

“Artificial Rainmaking by Laser System with Natural Technology”

(This novel technology has been scientifically and practically proven in laboratory cloud chambers and in the atmospheric up to 75m altitudes. The process involves "Laser-induced condensation and water drops formation " successfully demonstrated in controlled environments and real-world applications. Our ultimate goal is to initiate a “Green Revolution” globally, benefiting all of humanity.)



***Innovative Rainmaking Research Association, India
(IRRA Scientist)***

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(Short summary on Rainmaking Technology)

“Artificial Rainmaking by Laser System with Natural Technology”

(This novel technology has been scientifically and practically proven in laboratory cloud chambers and in the atmospheric up to 75m altitudes. The process involves "Laser-induced condensation and water drops formation " successfully demonstrated in controlled environments and real-world applications. Our ultimate goal is to initiate a “Green Revolution” globally, benefiting all of humanity.)

“Laser-based rain triggering demonstrator with remote sensing technology”

by IRRA Scientists Research Program for Rain Enhancement Science

(Flow Chart on Rainmaking Technology)

- 1) ****In atmosphere, after lightning, precipitation is formed and heavy rainfall occurs.***



- 2) ****Golde (1977) from a number of radar observations has reported that intense precipitation is not even presenting the clouds before the first discharge but develops abruptly in the same region after discharge from which the lightning flashes originate.***



- 3) ****This natural lightning phenomenon has been simulated by laser in laboratory cloud chamber and in the atmosphere.***



- 4) ***Results obtained are: condensation and water drop formation observed in laboratory cloud chamber and in the atmosphere up to 75m altitude.**



- 5) **Result “Laser induce condensation and water drops formation in the Laboratory clouds Chamber and in the atmosphere up to 75m altitude”**



- 6) ****Artificial lightning by Laser system creates high temperatures up to 2800K.***



- 7) ****At 2800K temperature, bonds of N₂ and O₂ of the atmosphere will break and excited N* and excited O* will be formed as follows:***



- 8) ****These excited N* and excited O* are very unstable, immediately react following reactions:***



- 9) ****Above reactions are endothermic, and therefore take heat (amount mentioned in bracket) from the surrounding atmospheric clouds.***



- 10) ****As a result, temperature falls, condensation takes place, natural seeds are formed and it rains in analogous way as rain is created in nature by lightning.***



11) *Formation of NO and O₃ in the above two endothermic reactions have been observed in the laboratory cloud chamber in experiment done by laser.



12) *Increase in density of NO and O₃ has also been measured after lightning in atmosphere also act as seed to create rain.



13) *NO and O₃ may undergo various reactions to form HNO₃, NO₃. (H₂O)_n, H. (H₂O)_n etc. compounds that bind water molecules (the value of n, as large as 100) which may use as natural seeding in the atmosphere.



14) *Carls and Brock did an experiment in which atmosphere was heated up to 1600 to 2800 K. They observed water droplet formation in the atmosphere. Bonds of N₂ and O₂ broke in this temperature range.



15) *IRRA Scientist Group, proposes laser system of specification: 10¹² watt, 800nm, 500mJ, 120fs and 10Hz to create artificial rain by initiating endothermic reactions in the atmosphere.



16) *In atmosphere, after lightning, precipitation is formed and heavy rainfall occurs.



17) *This natural lightning phenomenon has been simulated by laser in laboratory cloud chamber and in the atmosphere.



18) *Results obtained are: condensation and water drop formation observed in laboratory cloud chamber and in the atmosphere up to 75m altitude.



19) *As result “Laser induce condensation and water drops formation in Laboratory cloud chamber &as well in atmosphere up to 75m altitudes.



20) *In this process create: A) Artificial Lightning by high power Laser system, B) Condensations by endothermic reactions, C) Water drops form which is natural seeding by wind force in the atmosphere D) For heavy rainfall as similar natural lightning.



21) *This method is economical, natural process, harmless, eco-friendly, it can be used at any place and at any time.



22) *This process can be used in warm white clouds / other clouds in the atmosphere, it's must be converted in to black rainy clouds for artificial rainmaking by condensation process.



23) *Our findings could be used by scientists and engineers to create artificial rain as a new method.



24) The results could be of immense benefit to human being as well as eco-friendly and cost effective, which is the need of the hour.



25)*Artificial rain making methods help to increase the green life and oxygen and it's decreasing the pollution. Thus, these Artificial rainmaking process play major role in reducing drought and increasing the quantity of drinking water in future.

****IRRA Scientist's Aim:***
***“Green Revolution in the whole world for all
human beings”***

IRRA Scientists have developed two
research project proposals on
Rainmaking Natural Technology as
below

- 1) Artificial Rainmaking by Laser system onboard Aircraft.
- 2) Artificial Rainmaking by Laser system from Ground

**1) Artificial Rainmaking by Laser
system on board Aircraft:**

“Artificial rainmaking by using high power
terawatt mobile Laser(10^{12} watt) Which
initiates endothermic reactions, as a similar
natural lightning phenomenon, onboard
Aircraft with multiple lightning in the
atmosphere in large scale”.

“IRRA Scientist Group propose laser system of specification:
Femto-second mobile Laser 10^{12} watt, 800nm, 500mJ, 120fs and
10Hz for this research project”. It may be works for white
warm clouds or any types of clouds in the atmosphere. It's
converted into black rainy clouds with natural seeding by wind
force, occur heavy rainfall in the atmosphere when more than
50% to 65% humidity is present in the atmosphere. It covers
~450 Km², an area...& estimates cost 230 Cr./USA dollar 28.75
million, for three years, measuring & fixing atmospheric
parameters for maximum rainmaking in atmosphere. It's one
time investment, use multiple time, at anywhere.

Fig. No. 1 - For Rainmaking by Laser using Aircraft in the atmosphere.



Figure No.2: “Inner Deign of Aircraft with Laser system and *Posiotion of Laser system in Aircraft*”

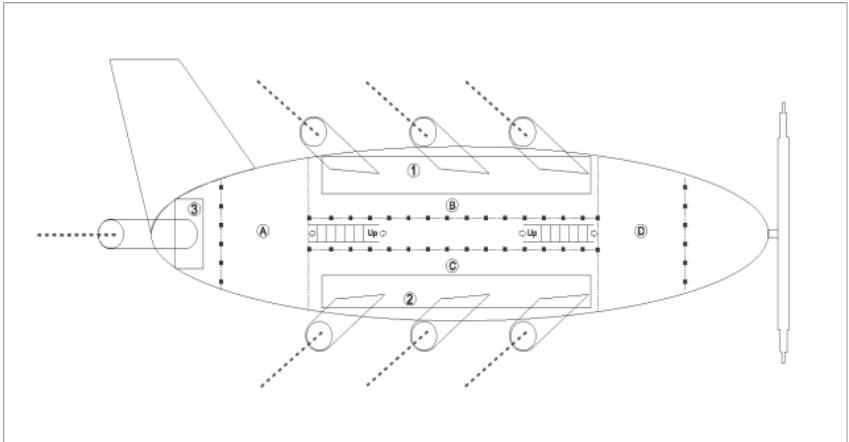


Fig.No.2: “Position of Laser system in Aircraft”

Note: * In figure No. 2, on first floor, height 9', shown parts (1), (2) and (3) are high power Laser release system which creates multiple artificial Lightning in the upper atmospheric clouds directly by Laser system

* In figure No.2, on second floor, height 7' 6", shown parts (A), (B), (C) and (D) with stair case are high power generation system for high power Laser system, with railing for open space as shown square dots

Key Words: 1) Endothermic reactions 2) Condensation & Precipitations form, 3) Rain drops create Natural seeding by wind with rainfall in the atmosphere.

2) Artificial Rainmaking by Laser system from Ground:

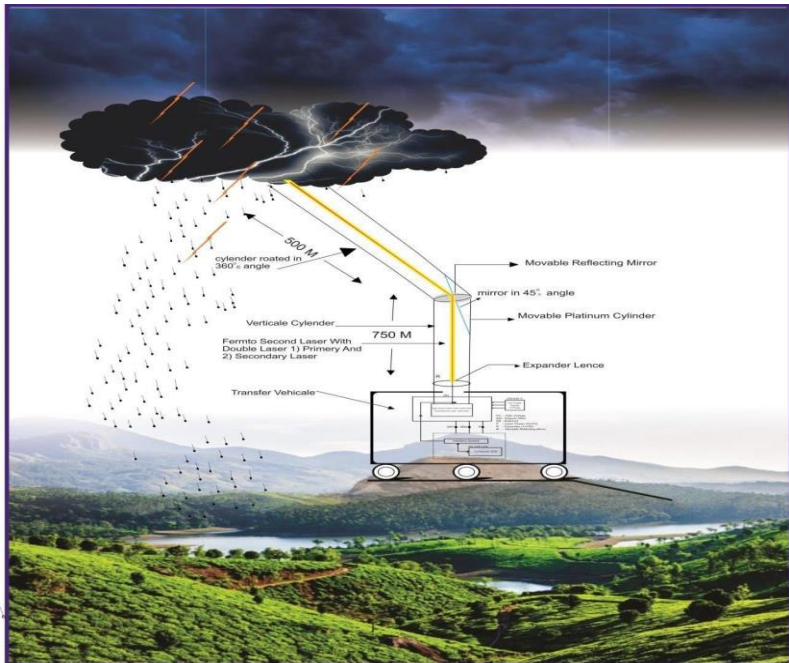
“Artificial rainmaking by Peta Watt (10^{15} watt), double coarse Laser system from ground initiation of Endothermic Reactions, as similar natural lightning phenomena with natural seeding, occur heavy rainfall in the atmosphere”

“IRRA Scientist Group propose laser system of specification: Peta watt Laser (10^{15} watt), 800nm, 500mJ, 120fs and 10Hz for this research project”. It may be works for white warm clouds or any types of clouds in the atmosphere. It's converted into black rainy clouds through natural endothermic reactions as condensations process with natural seeding by wind force, occur heavy rainfall as similar lightning phenomena in the atmosphere when more than 50% to 65% humidity is present in the atmosphere. It covers ~16 Km², an area... Estimate cost 9.02 Cr in Indian Rs. / USA 0.72 million Doller, for three years, measuring & fixing atmosphere parameters for maximum rainmaking in the atmosphere.

Key Words: 1) Endothermic reactions 2) Condensation &Prepetition form, 3) Rain drops create Natural seeding by wind with rainfall in the atmosphere.

“Artificial rainmaking by Peta Watt (10^{15} watt), double coarse Laser system fromground initiation of Endothermic Reactions, as similar natural lightning phenomenon in the atmosphere”

****IRRA Scientist’s Aim:
“Green Revolution in the whole world for all human beings”***



Artificial Rainmaking By Laser System From Ground Level Fig : 1

By

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Please visit our YouTube Channel search as
"Novel Technology for Artificial
Rainmaking". Click here
<https://youtu.be/UYfuH9fAmUs>

*Please search on Google as S.K.
Chopkar or "Rain Enhancement by
Endothermic reactions" or visit our
website - <http://www.irraindia.org>

PREFACE

DR. S.K. CHOPKAR



The IRRA Scientists Group has been dedicated to innovative rainmaking technology for the past 40 years. Our team has developed a pioneering research project titled “Innovative Rainmaking Technology by Laser System Similar to Natural Lightning Phenomena in the Atmosphere.” This technology has been scientifically and practically proven in both laboratory cloud chambers and atmospheric conditions. The process involves "Laser-induced condensation and the formation of water drops," successfully demonstrated in controlled environments and real-world applications. Our ultimate goal is to initiate a “Green Revolution” globally, benefiting all of humanity.

Dr. S.K. Chopkar, the Founder and Director of the IRRA Scientists Group, leads our organization. We operate primarily in rural areas, focusing on social, scientific, and welfare activities. Our research is conducted on a no-profit, no-loss basis, solely for the betterment of society. We receive no external funding and have no income sources; our scientists volunteer their time, and we fund our projects through personal contributions. Our organization is registered under Section 8 of the Government of India's Ministry of Corporate Affairs, confirming our status as a non-profit entity.

(12A approval, AAFCI5742PE20241_signed)

Please visit our YouTube Channel and search "Novel Technology for Artificial Rainmaking". Click here: - <https://youtu.be/UYfuH9fAmUs>

More details can be found in Google Search: as “Artificial rainmaking by endothermic reactions” or S.K. Chopkar or on our website: <http://www.irraindia.org>

In my life, some sentiment signal, from God’s power about “True facts of God” as ...

God is a divine power, not an ordinary mortal. Those who worship His authority ultimately attains supreme power.

ईश्वर ऐसे शक्ति ! ईश्वर नसे व्यक्ति !
जो करी भक्ति ! तयासी मिले शक्ति ! ध्रु!

God! such as soul power!
Soul is God! God is Soul!!
Who worship heartily God!
Ultimately gets God Power!!

-Shivshankar Chopkar

At the same times, in my mind

***“What is God...? God’s Power Means
G- Generation, O-Operation, D-Destruction ”***

I have got some sentiment signal again & again in my mind then I am thinking and searching about “Supreme God’s Power & Law of conservation”. Start my research study on 17/3/2007 about God’s power “True facts of God” which is explain in my publish research paper

***“SUPREME GOD POWER ALWAYS EXIST
IN THE UNIVERSE, ACTIVE AS SOUL IN
HUMAN BEING BODY”***

International Journal of Humanities and Social Sciences (IJHSS)
by ISSN (P): 2319–393X; ISSN (E): 2319–3948, Vol. 10, Issue
1, Jan– Jun 2021; 99–104, © IASET

In my research study about “Law of conservation means ---
Energy neither created, nor destroyed” in science. I have
research on this

“Law of conservation “and re-write new law as “Modified Law
of Conservation “Biomed J Sci & Tech Res 53(4)-2023. BJSTR.
MS.ID.008442. ISSN: 2574 -124, DOI:
10.26717/BJSTR.2023.53.008442

*IRRA Scientists developed a challenging research work on
“God power what’s in body as Soul that’s in Universe as
Supreme God Power!” & “Modified Law of Conservation” in
Part I -*

*Supreme God’s Power & Modified Law of conservation with
IRRA Scientists developed a challenging research work on
“Innovative rainmaking technology by Laser system similar to
natural lightning phenomena in the atmosphere “in Part II-
Innovative Rainmaking Technology & Research Activities in
our Book as title*

***“What is God...? God’s Power Means
G- Generation, O-Operation, D-Destruction”***

Just now! IRRA scientist already published book as title

“Artificial Rain production by endothermic reactions”.

‘Our Intension’

IRRA Scientists would like to work on “No war but peace in the whole world for all human beings”. Everything is getting destroyed in war, but a peaceful life gain everything. Scientists should stop researching on weapons which destroys humanity.

“No war No Violence”

We are for peace and nonviolence.

IRRA Scientist Group, India.

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ACKNOWLEDGEMENT

We express our sincere thanks to scientists: Prof D.K. Chakarbarty (PRL Ahmadabad), Prof Mamata R. Lanjewar (RTM University Nagpur), Prof A. P. Deshpande (Principal, Science College), Prof. Padmanabhan Murthy (J.N. University, New Delhi), Prof Umesh Kulshetra (J.N. University, New Delhi), Prof K. S. Korgaokar (Pune University, Pune), Dr. A.L. Agarwal (NEERI Nagpur), Dr. Nitin Saraf (B.D. Engineering College, Sewagram), Dr. K. M. Kharate, (GM Engineering College & Research Centre, Sheogao), Dr. Mrs. Sumanlatha Pandey (Medical officer in Alternative medicine department MGIMS Sevagram), Mr. Shyam Ujjaninkar (Engineer), Mr. Rajesh Iyengar (P. N. College, Nanded), Mr. Anant Kutemate (Manager), Abhinav Zade (Sheetal Photo ,Sewagram), Eng. Avinash Prate, Sewagram, Eng. Kunal Sangani, Sewagram for their valuable suggestions and guidance for project proposal.

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PART- 1

INNOVATIVE RAINMAKING TECHNOLOGY BY IRRA SCIENTIST

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1.0 Request Letter by IRRA Scientists

“GREEN REVOLUTION”

INNOVATIVE RAINMAKING RESEARCH ASSOCIATION (IRRA Scientists), INDIA

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***Subject: - “To encourage research activities of IRRA Scientists
in the Field of Innovative Rainmaking Technology”***

Respected Sir,

“Greeting from IRRA Scientists”

IRRA Group has developed a challenging research work “Innovative rainmaking technology by Laser system similar to natural lightning phenomena in the atmosphere “. This technology is practically proved in laboratory cloud chambers too, as well as in the atmosphere. This includes "Laser-induced condensation and formation of water drops in laboratory cloud chamber as well as in the atmosphere".

At the outset, let me introduce IRRA Group, an ensemble of scientists in India, who have invented a novel rainmaking technology. IRRA Scientist members hail from poor farmer families and arid land. IRRA Group’s aim is to develop a novel Rainmaking Technology using a Laser system for “Green Revolution in the whole world for all human beings”.

Now IRRA Scientists have developed two research project proposals as below.

- 1) *“Artificial rainmaking by Peta Watt (10^{15} watt), double Laser system from ground initiation of Endothermic Reactions, as similar natural lightning phenomena in the atmosphere”.*

“IRRA Scientist Group propose laser system of specification: Peta watt Laser (10^{15} watt), 800nm, 500mJ, 120fs and 10Hz for this research project”. It works when more than 65% humidity is present in the atmosphere. It covers ~16 Km², an area... Estimate cost 9.02 Cr in Indian Rs/ USA 0.72 million Dollar)

- 2) *“Artificial rainmaking by using high power terawatt mobile Laser Which initiates endothermic reactions, as a similar natural lightning phenomenon, onboard Aircraft with create multiple lightning in the atmosphere”.*

“IRRA Scientist Group propose laser system of specification: Femto-second mobile Laser 10^{12} watt, 800nm, 500mJ, 120fs and 10Hz for this research project”. It works when more than 65% humidity is present in the atmosphere. It covers ~450 Km², an area...& estimates cost 230 Cr./USA dollar 28.75 million.

Our findings could be used by scientists and engineers to create artificial rain as a new method. The results could be of immense benefit to human being as well as eco-friendly and cost effective which is the need of the hour. As per reports a group of European scientists working on artificial rain said in 2010 that.....as fallow...

“Firing extremely powerful laser pulses through humid air can stimulate the formation of clouds, according to a team of European scientists. They say that the effectiveness of this method is much easier to gauge than traditional cloud-seeding techniques and that it could provide to be a practical means of triggering rainfall”. (Search Google as ‘Laser makes rain, heavily’ 2010). Florida University scientists too have experimentally observed that “Laser makes rain “. This lightning phenomenon created through artificial lightning by plasma laser pulse or laser system can produce rain as similar natural lightning phenomena, in the atmosphere has been practically proven “Laser-induced water condensation in air” is mentioned in the literature. Scientists have succeeded in obtaining raindrops from an altitude of 75m of the atmosphere by terawatt mobile laser.

We well known as above, after lightning/Lase shooting precipitation form, Now the question arises that what are the conditions required for condensation? This means that only, endothermic reactions are responsible for condensations, which also produces NO and O₃ after shooting laser beams/after lightning it’s observed, it can endothermic reactions, lot of heat energy required these endothermic reactions, which is absorbs from surrounding, condensation take place and precipitation form. These tiny water drops act as a natural seeding process, due to

acceleration and tribulation by wind force in the atmosphere, to form set of raindrops with heavy rainfall as lightning rain. Endothermic reactions are responsible for condensation. Condensation is the basic need for water drop formation. This novel Rainmaking Technology can be used for white warm clouds too which gets converted into black rainy clouds. This lightning phenomenon created through artificial lightning by plasma laser pulse or laser system can produce rain in the atmosphere has been practically proven “Laser-induced water condensation in air” is mentioned in the literature. Scientists have succeeded in obtaining raindrops from an altitude of 75m of the atmosphere by terawatt mobile laser

IRRA Group has published number of research papers in National and International Journals [website](http://www.irraindia.org) <http://www.irraindia.org> “The International Journal of Meteorology (U.K.), Volume 35, number 355, November 2010 issue, also IRRA Scientist Group has presented research paper in National & International Conference.

Thanking you, With best regards. Sincerely



IRRA Scientist Group, India.

*Please visit our YouTube Channel search as "Novel

Technology for Artificial Rainmaking”. Click here:-
<https://youtu.be/UYfuH9fAmUs>

*Please search on Google as S.K.Chopkar or “Rain Enhancement by Endothermic reactions” or visit our web site <http://www.irraindia.org>.

2.0 “RAINMAKING TECHNOLOGY”

Flow Chart

Innovative Rainmaking Technology is scientifically and practically proven in laboratory cloud chambers, as well as in the atmosphere. This includes as "Laser-induced condensation and formation of water drops in laboratory cloud chamber as well as in the atmosphere up to 75m altitude.

“Artificial rainmaking by using high power laser which initiates endothermic reactions, similar to nature’s lightning phenomenon, onboard Aircraft in the atmosphere”

**Innovative Rainmaking Research Association
(IRRA Scientist), India**

***Shivshankar K. Chopkar, D. K. Chakrabarty, Nitin Saraf, M.R. Lanjewar, K.R. Gangakhedkar, Shyam Ujjainkar, R.M. Kharate, A.P. Deshpande, Umesh Kulshetra. Prof. Dr. Jzsef Dr. Steier
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(Flow Chart on Innovative Rainmaking

Technology for Demonstration)

In atmosphere, after lightning, precipitation is formed and heavy rainfall occurs.



This natural lightning phenomenon has been simulated by laser in laboratory cloud chamber and in the atmosphere.



Results obtained are: condensation and water drops formation observed in laboratory cloud chamber and in the atmosphere up to 75m altitude



In lightning, temperature of the atmosphere is ~30,000K. Laser can create this high temperature in the atmosphere. At this high temperature, bonds of N₂ and O₂ of the atmosphere will break and excited N* and excited O* will be formed as follows:



These excited N* and excited O* are very unstable, immediately react following reactions:



Above reactions are endothermic, and therefore take heat (amount mentioned in bracket) from the surrounding atmospheric clouds.



As a result, temperature falls, condensation takes place, natural seeds are formed and it rains in

analogous way as rain is created in nature by lightning.



Formation of NO and O₃ in the above two endothermic reactions have been observed in the laboratory cloud chamber in experiment done by laser.



Increase in density of NO and O₃ has also been measured after lightning in atmosphere

O₃ and NO may undergo various reactions to form HNO₃, NO₃, (H₂O)_n, H₂O_n etc. compounds that bind water molecules (the value of n, as large as 100) which may also act as seed to create rain.



Carls and Brock did an experiment in which atmosphere was heated up to 1600 to 2800 K. They observed water droplet formation in the atmosphere. Bonds of N₂ and O₂ broke in this temperature range.



IRRA Scientist Group, proposes laser system of specification: 10¹²watt, 800nm, 500mJ, 120fs and 10Hz to create artificial rain in large scale by initiating endothermic reactions on board Aircraft, Laser design creates multiple lightning in the atmosphere.



This method is economical, natural process, harmless, eco-friendly, it can be used at any place and at any time.



It's most useful for mankind's as "Green revolution

in the whole world for all human beings”.



By IRRA Scientists Group, India

We are very happy to wish to nominate the IRRA Scientists group, Sewagram, India who have developed for their excellent research, an innovative method of artificial rain forming. This invention is very much valuable for mankind. This is a great contribution to atmospheric Chemistry. We strongly recommend the IRRA Scientists group, Sewagram India for encouraging research activities.

IRRA Group developed a challenging research work “Innovative rainmaking technology by Laser system similar to natural lightning phenomena in the atmosphere ”. This technology is scientifically and practically proven in laboratory cloud chambers, as well as in the atmosphere. This includes "Laser-induced condensation and formation of water drops in laboratory cloud chamber as well as in the atmosphere". IRRA Scientists aim for a “Green revolution in the whole World for all human beings”.

Any Government / Institutions / Company are interested for Demonstration on Rainmaking Technology, IRRA Scientist Groups are very pleasure to work with them.

IRRA Scientists proposes laser design system of specification: 10^{12} watt, 800nm, 500mJ, 120fs and 10Hz to create artificial rain in large scale by initiating

endothermic reactions on board Aircraft, Laser design creates multiple lightning in the atmosphere. Laser design, estimate budget, work plan etc. are ready with IRRA Scientists for demonstration “Artificial rainmaking in large scale by using high power laser which initiate endothermic reactions, as similar natural lightning phenomenon, onboard Aircraft in the atmosphere” It’s most useful for mankind’s “Green revolution in the whole world for all human beings”. Please let us know, if you have any suggestion / queries / questions, contact! without hesitation to IRRA Scientists

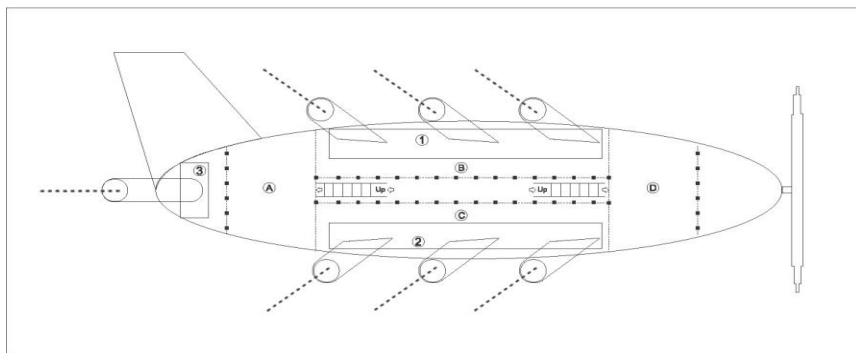
Figure for Demonstration on Rainmaking Technology”

“Artificial rainmaking by using high power laser which initiate endothermic reactions, as similar natural lightning phenomenon, onboard Aircraft in the atmosphere”

Fig. 1 - Aircraft for making artificial rain in large scale by laser system in the atmosphere



Fig. 2: “Position of Laser system and other instruments inside the aircraft design:



Note: * In figure No. 2, on first floor, height 9', shown parts (1), (2) and (3) are high power Laser release system which creates multiple artificial Lightning in the upper atmospheric clouds directly by Laser system

**** In figureNo.2, on second floor, height 7' 6", shown parts (A),(B),(C) and (D) with stair case are high power generation system for high power Laser system, with railing for open space as shown square dots***

“Request for Help”

Now days, IRRA scientist group are struggling with funds for research activities. Your little help may be most useful for “Green revolution in the whole world for all human being”.
Your co-operation is solicited.

With best regards Yours faithfully IRRA Scientist Group

Bank Account Details

- 1) **Bank Name-CENTRAL BANK OF INDIA, MIDC
SEWAGRAM ROAD -- 442102,**

Warud, Dist.-Wardha. (Maharashtra.), India.

Bank A/c Name: - Innovative Rainmaking Research
Association, Sewagram, Dhanvantri Nager-30, Bank A/c No.
3806623156, IFSC Code No.: - CBIN0282189,

- 2) **Bank Name-CENTRAL BANK OF INDIA,
SEWAGRAM BRANCH--442102,**

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Academy, Sevagram, Dhanvantri Nager-30,
Bank A/c No. 3841144252, IFSC Code No.: - CBIN0280697



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RESEARCH ASSOCIATION**



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***Please visit our YouTube Channel and search "Novel Technology
for Artificial Rainmaking". Click here: -
<https://youtu.be/UYfuH9fAmUs>***

***More details can be found in Google Search: as “Artificial
rainmaking by endothermic reactions” or S.K. Chopkar or on the
website: <http://www.irraindia.org>.***

3.0 Greetings from IRRA Scientists

Innovative Rainmaking Technology is scientifically and practically proven in laboratory cloud chambers and the atmosphere. This includes "Laser- induced condensation and formation of water drops in laboratory clouds chamber as well as in the atmosphere up to 75 altitudes.

“To encourage research activities of IRRA Scientists in the Field of Innovative Rainmaking Technology”

IRRA Group has developed a challenging research work “Innovative rainmaking technology by Laser system similar to natural lightning phenomena in the atmosphere “. This technology is practically proved in laboratory cloud chambers too, as well as in the atmosphere. This includes "Laser-induced condensation and formation of water drops in laboratory cloud chamber as well as in the atmosphere". At the outset, let me introduce IRRA Group, an ensemble of scientists in India, who have invented a novel rainmaking technology. IRRA Scientist members hail from poor farmer families and arid land. IRRA Group’s aim is to develop a novel Rainmaking Technology using a Laser system for “Green Revolution in the whole world for all human beings”

Now IRRA Scientists have developed two research project proposals as below.....

1] “Artificial rainmaking by Peta Watt (10^{15} watt), double core Laser system from ground Initiation of Endothermic Reactions, as similar natural lightning phenomena in the atmosphere”. “IRRA Scientist Group propose laser system of specification:

Peta watt Laser (10^{15} watt), 800nm, 500mJ, 120fs and 10Hz for this research project”.

It works when more than 65% humidity is present in the atmosphere. It covers ~ 16 Km², an area... Estimate cost 9.02 Cr. in Indian Rs. / USA 0.72 million Dollar) “Artificial rainmaking by using high power terawatt mobile Laser Which initiates endothermic reactions, as a similar natural lightning phenomenon, onboard Aircraft with multiple lightning in the atmosphere”. “IRRA Scientist Group propose laser system of specification: Femto-second mobile Laser 10^{12} watt, 800nm, 500mJ, 120fs and 10Hz for this research project”. It works when more than 65% humidity is present in the atmosphere. It covers ~ 450 Km², an area... estimates cost 230 Cr./USA dollar 28.75 million.

Our findings could be used by scientists and engineers to create artificial rain as a new method. The results could be of immense benefit to human being as well as eco-friendly and cost effective which is the need of the hour.

IRRA Scientists are ready to collaborate with any government/organization/institution interested in a demonstration of Rainmaking Technology, IRRA Scientist Groups are very pleased to work with them. for the Green Revolution. For the above proposal, Laser design, estimate, budget, work plan etc. with IRRA scientists to demonstrate novel Rainmaking Technology in the atmosphere.

IRRA Scientists India would like to inform about our organization “The Innovative Rainmaking Research Association (IRRA Scientists), India on research activities of

Novel Rainmaking Technology in recent 37years, which is scientifically & practically proven. Our organization is working in the rural areas as a social, scientist for social welfare. Our organization is registered under the Government Of INCORPORATION, Section -8. Our research activities are on a no-profit and no-loss basis. We work for the welfare of society. We have no source of income; no funding from anyone. Our scientists work here voluntarily during their free time. We manage by contributing money from our own pockets.

We are delighted to provide information on the research activities of the IRRA Scientists group, Sewagram, India who have developed their excellent research, an innovative method of artificial rain forming. This invention is very much valuable for mankind. This is a great contribution to atmospheric Chemistry. We strongly recommend the IRRA Scientists group, Sewagram India for encouraging research activities.

IRRA Group developed a challenging research work “Innovative rainmaking technology by Laser system similar to natural lightning phenomena in the atmosphere ”. This technology is scientifically and practically proven in laboratory cloud chambers, as well as in the atmosphere. This includes a result in Laboratory cloud's chamber “Laser-induced condensation and formation of water drops in laboratory cloud chamber as well as in the atmosphere”. IRRA Scientists aim for a “Green revolution in the whole World for all human beings”. Please let us know if you have any suggestions/queries/questions/comments contact us! Without any hesitation to IRRA Scientists

Artificial rain-making methods help to increase green life and

oxygen and decrease pollution. Thus, these methods play a major role in reducing drought and increasing the quantity of drinking water in future

It's most useful for mankind's providing food & water for all human beings "Green revolution in the world for all human beings". IRRA Scientists are ready for discussion on "Innovative rainmaking technology for demonstration.

IRRA Scientist Group, India.

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Mob. +91 9420445108, Email- skc.arr@rediffmail.com, E-skchopkar@irraindia.org, E- irra.scientistgroup@gmail.com Please visit our YouTube Channel and search "Novel Technology for Artificial Rainmaking". Click here: - <https://youtu.be/UYfuH9fAmUs> More details can be found in Google Search: as "Artificial rainmaking by endothermic reactions" or S.K. Chopkar or on the website: <http://www.irraindia.org>.

4.0 Project proposal For Rainmaking from Ground:

“Artificial rainmaking by Peta Watt double Laser system from ground initiation of Endothermic Reactions, as similar natural lightning phenomena in the atmosphere”

Innovative Rainmaking Research Association (IRRA Scientist Group)

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Abstract

In the atmosphere, after lightning, precipitation is formed and heavy rainfall occurs. This is a well-known process. This natural lighting phenomenon has been practically demonstrated in the laboratory cloud chamber, as “Laser-induced condensation & water drops formation” and “Water drops formation by each and every laser shot in the cloud chamber”. In this process, lightning/laser creates high temperature which breaks the bonds of N_2 and O_2 to form excited N^* and excited O^* . Total heat energy of lightning/laser is completely utilized for breaking the bonds of N_2 and O_2 (Chopkar, 1993). These excited N^* and excited O^* move to new place by wind and undergo reactions to form NO and O_3 which are endothermic reactions. Heat energy required for these reactions are taken from the surrounding

atmospheric clouds. As a result of these reactions, temperature falls, condensation takes place, rain drops form, these raindrops act as natural seeding process, to form another sets of rain drops, seeds are created and rain occurs in analogous way similar to rains created in nature by lightning. In this process, white clouds convert into black rainy clouds for rainmaking in the atmosphere. This process has been practically proved in the laboratory as “Production of ozone and nitrogen oxides by laser filamentation”. It is believed that “Laser photons photo-dissociate atmospheric compounds N_2 and O_2 form ozone (O_3) and nitrogen molecules (NO). “Increase of O_3 and NO concentration after lightning has also been experimentally observed”.

This lightning phenomenon created through artificial lightning by Peta Watt double laser pulse system can produce rain in the atmosphere has been practically proven as “Laser-induced water condensation in air”. Scientists have succeeded in obtaining raindrops from an altitude of 75m of the atmosphere by terawatt mobile laser.

“IRRA Scientist Group propose Peta Watt double laser system from ground of specification: 10^{15} watt, 800nm, 500mJ, 120fs and 10Hz for this research project”. The results could be of immense benefit to human being.

Keywords: Artificial rain; Atmospheric cloud; Condensation; Endothermic reactions; Laser system; Precipitation; Raindrops; Rainfall; Natural Seeding.

Introduction:

Several attempts have been made by various researchers to create artificial rain by laser. Golde (1977) from a number of radar observations has reported that intense precipitation is not

even present in the clouds before the first discharge but develops abruptly in the same region after discharge from which the lightning flashes originate. Carls and Brock (1987) heated the atmosphere by a laser pulse up to 1600 to 2800K and observed water droplet formation. They predicted that high temperature causes ionization of N_2 and O_2 and, when this ionized air is subjected to more radiation, avalanche breakdown of air can occur. Braun et al. (1995) have observed laser induced condensation and water drops formation by shooting self-channeling of high- peak power femtosecond laser pulses in the air. Yoshihara et al. (2007) have shown that the pulsed UV-laser irradiation of ambient air induces formation of water droplets or small ice particles in the laboratory. They also observed that $[O]$ formed in this process quickly reacts with O_2 molecules to form O_3 . Rohwetter et al. (2010) have shown that ionized filament, generated by ultra-short wave laser pulses induce water-cloud condensation in the sub-saturated atmosphere in the altitude region between 45m and 75m. A team, called terra-mobile- group (TMG), consisting of scientists from Switzerland, Germany and France, have been trying to create artificial rain by laser (Kasparian et al.2000; 2003; Mejean et al. 2006; Rohetteret al. 2010; Kasparian al. 2012). They have done simulation experiment in laboratory cloud chamber and have observed condensation and water drops formation. They also succeeded in producing tiny water particles in moderately humid air in an altitude of 45 to 75m of the atmosphere by terawatt mobile laser. But the droplets were about a hundred times too small to fall as raindrop; instead, they remained suspended in the air. The team feels that it is feasible to get larger droplets if the power of laser is increased to petawatt (10^{15} watts) or exawatt(10^{18} watts). They

further say that the effectiveness of this method is much easier to gauge than traditional cloud-seeding techniques and that it could provide to be a practical means of triggering rainfall”. (Search Google as ‘Laser makes rain, heavily’2010). A group of Scientists from Florida University also observed water drops formation by high power laser shooting experiment. It appears from the above that laser has not yet succeeded in producing artificial rain. In this paper, a novel method is described to create artificial rain by laser.

2.0 Condensation is the Basic Need for Water Drops Formation:

IRRA Scientist Group has been doing successful experiments in laboratory, for ‘condensation is the basic need for water drop formation’. That condensation is the basic need for water drop formation can be understood by taking two glasses, one filled with normal water and another with ice pieces. After sometime one can observe water droplets on the outer surface of the glass which contains ice but not in the other. This is due to the condensation process that occurs around the ice glass. So, IRRA Scientist Group, proposed a laser system for this research project, to create artificial lightning by initiation of endothermic reactions, similar to natural lightning phenomena, for artificial rainmaking. As a result of these reactions, temperature falls, condensation takes place, seeding occurs and it rains in an analogous way similar to rains created by lightning. This process has been practically proved in the laboratory and atmosphere as “production of ozone and nitrogen oxides by laser filamentation”. A number of scientific and practical tests have been conducted in cloud chambers and in the atmosphere to prove this hypothesis, as “Laser induce condensation and

water drops formation by Laser shooting in the laboratory cloud chambers as well as in the atmosphere”.

Now the question arises that what are the conditions required for condensation. This means that, only and only, endothermic reactions are responsible for condensations, which also produces NO (Nitrogen Oxides) and O₃ (Ozone) after shooting laser beams triggering endothermic reactions, condensation and precipitation. These tiny water drops act as a natural seeding process, due to acceleration and tribulation by wind force in the atmosphere, to form another set of raindrops with heavy rainfall as lightning rain. Endothermic reactions are responsible for condensation. Condensation is the basic need for water drop formation as above laboratory experiment, “Condensation is the Basic Need for Water Drops Formation”.

3.0 Scientific, & Practical background on Rainmaking Technology: This novel Rainmaking Technology can be used for white, warm clouds too which get converted into black rainy clouds for rain enhancement. As well as, water drops formation by high power Laser shooting, “Laser makes rain”.

The IRRA scientist Group has already demonstrated “Innovative Rainmaking Technology” in the Laboratory cloud’s chamber successfully, and results have been published in “Indian Journal of Science & Technology”, <http://indjst.org>, vol.1, No.6 (2008).

Now, the project proposal, the design of the laser system, the Budget estimate, and the work plan are ready with IRRA Scientist Group, India. IRRA Scientist is ready for demonstration and collaboration with the Government for funding purposes for project proposal on “Artificial rainmaking by Peta Watt double Laser system from ground initiation of

Endothermic Reactions, as similar natural lightning phenomena in the atmosphere”

In this experiment, Peta Watt (10^{15} watt) double laser creates artificial lightning in the atmospheric cloud's regions from ground. These white warm clouds are converted into black rainy clouds with natural seeding for rain enhancement in the atmosphere.

A laser pulse will be sent to the cloud to initiate endothermic reactions which will create lightning phenomena, as in nature, mentioned above. For example, a German-French group has used a femtosecond– terawatt laser to obtain “Laser-assisted water condensations in the atmosphere” They have succeeded in obtaining raindrops from an altitude of 45m to 75m of the atmosphere. In this experiment, intensity of Laser system can't reach above 75m an altitude in the atmosphere. IRRA Scientist propose “Artificial rainmaking by Peta Watt (10^{15} watt) double Laser system from ground initiation of Endothermic Reactions, as similar natural lightning phenomena in the atmosphere”

This novel Rainmaking Technology can be used for white, warm clouds too which get converted into black rainy clouds for rain enhancement.

*As well as, water drops formation by high power Laser shooting. “Laser makes rain” by Florida University, Scientist experimentally observed.

*As per report, a group of European scientists working on artificial rain said in 2010, “Firing extremely powerful laser pulses through humid air can stimulate the formation of clouds, according to a team of European scientists. They say that the effectiveness of this method is much easier to gauge than

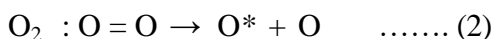
traditional cloud-seeding techniques and that it could provide to be a practical means of triggering rainfall”. (Search Google as ‘Laser makes rain, heavily’2010). In Indian ancient tradition, there is a mention in Vedshastra that “Fire arrows are sent towards the atmospheric clouds which is responsible for immediate rainfall”

Our system could be Peta Watt (10^{15} watt) double Laser system from ground, its fundamental wavelength could be $\sim 800\text{nm}$. The pulse will have energy of $\sim 500\text{mJ}$, 120fs and repetition frequency of 10Hz. The laser pulse has to propagate with almost high peak intensity in atmospheric clouds. It works when more than 65% humidity is present in the atmosphere. Our findings could be used by scientists and engineers to create artificial rain through a new method. The results could be of immense benefit to human being.

How will laser create artificial rain? Theory:

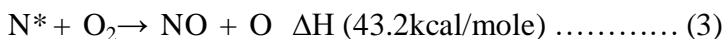
For creation of rain, according to well established meteorology theory (can be found in any textbook of meteorology), steps are the following: First (i) creation of low temperature \rightarrow then (ii) condensation then (iii) seed (CCN) formation \rightarrow then (iv) tiny water drops formation and rain occur in the atmosphere.

The present methodology is to send laser pulse to the cloud region of the atmosphere to create high temperature. This high temperature will break the bonds of O_2 (21%) and N_2 (as follows:



In this processing N and O in excited state (N^* , O^*) will be

created. These excited N^* and O^* are very unstable and immediately come to the ground state through following reactions.



The occurrence of reactions 3 and 4 and formation of NO and O_3 have confirmation from NASA laboratory experiments [Sanders et al. 2003]. Formation of O_3 and NO, after laser shot, has been observed in laser experiment in atmosphere (Petit et al. 2010). The reactions 3 and 4 are endothermic and therefore, they need heat energy (amount mentioned in brackets) which is absorbed from the cloud region. As a result, temperature of the cloud region falls (first step of rain formation is achieved and then other steps follow), condensation takes place, seeds (CCN) will be formed, and tiny water drops will be created. These tiny water drops may act as natural seeds to form another sets of rain drops. This chain process will result in rainfall. Ozone and Nitric oxide, O_3 and NO (formed in reactions 3 and 4) will undergo further reaction to form HNO_3 particles other nitrogen compounds, which will bind water molecules together to create water droplets. These water droplets again will act as natural seeds to form another sets of rain drops. In the atmosphere, due to turbulence, small water drops coalesce and form big rain drops. In addition, ions N_2^+ and O_2^+ and electrons formed by cosmic rays can create complex hydrated heavy positive and negative ions. $HNO_3^-(H_2O)_n$ (where the value of n could be as large as 50) which can also act as seed to create rain. In short, to create artificial rain by laser, endothermic reactions

are to be generated in the cloud region. It has been shown earlier how much heat energy is absorbed by endothermic reactions from atmospheric clouds (Chopkar 1993a, b; Chopkar and Chakrabarty 2008; Chakrabarty et al. 2010; Chopkar et al. 2010). The energy required to break bonds of 1 molecule of N_2 and 1 molecule of O_2 , $= 2.25 \times 10^{-18}$ Joule. A laser pulse of energy 500mJ can dissociate a column of N_2 and O_2 containing $(\sim 0.5/2.25 \times 10^{-18}) \sim 10^{17}$ molecules which is much higher than the density in the atmosphere.

Laser can be operated from the ground as well as from an aircraft. In former case, laser pulse has to propagate to a height of ~ 1 km (cloud height) from the ground. There will be attenuation of energy in this propagation. Kasparian et al. (2012) experimented with terawatt laser from the ground and observed tiny raindrops in an altitude of 45m to 75m of the atmosphere. To create large water droplets at higher altitudes, the group feels that laser power has to be peta-watt (10^{15} watt) or hexa-watt (10^{18} watt). If laser is operated from aircraft, then attenuation of energy will be less. In that case, laser power can reach the cloud region without much attenuation. It can also cover large area and can move to any place. Turbulence created by the aircraft in the atmosphere can also create small water drops which would collide with each other and form big rain drops.

In this research paper, IRRA Scientist propose “Artificial rainmaking by Peta Watt (10^{15} watt) double Laser system from ground initiation of Endothermic Reactions, as similar natural lightning phenomena in the atmosphere” Artificial rain making methods help to increase the green life and oxygen and decreasing the pollution. Thus, these methods play major role in

reducing drought and increasing the quantity of drinking water in future.

5.0 Methodology for Artificial Rainmaking by Laser system from Ground:

In this experiment, Peta Watt (10^{15} watt) double Laser system creates artificial lighting in the atmosphere up to 1.2 Km to 2.7 Km altitude in the white warm cloud's regions. These white warm clouds are converted into black rainy clouds with natural seeding for rain enhancement in the atmosphere.

A laser pulse will be sent to the cloud to initiate endothermic reactions which will create lightning phenomena, as in nature, mentioned above. The laser technology for this purpose, though not fully developed, yet exists. For example, a German-French group has used a femtosecond– terawatt laser to obtain “Laser-assisted water condensations in the atmosphere”. They have succeeded in obtaining raindrops from an altitude of 45m to 75m of the atmosphere.

This novel Rainmaking Technology can be used for white, warm clouds too which get converted into black rainy clouds for rain enhancement.

*As well as, water drops formation by high power Laser shooting. “Laser makes rain” by Florida University, Scientist experimentally observed.

*As per report, a group of European scientists working on artificial rain said in 2010, “Firing extremely powerful laser pulses through humid air can stimulate the formation of clouds, according to a team of European scientists. They say that the effectiveness of this method is much easier to gauge than

traditional cloud-seeding techniques and that it could provide to be a practical means of triggering rainfall”. (Search Google as ‘Laser makes rain, heavily’2010). In Indian ancient tradition, there is a mention in Vedshastra that “Fire arrows are sent towards the atmospheric clouds which is responsible for prompt rainfall”

Our system could be Peta Watt (10^{15} watt) double Laser system, its fundamental wavelength could be $\sim 800\text{nm}$. The pulse will have energy of $\sim 500\text{mJ}$, 120fs and repetition frequency of 10Hz. The laser pulse has to propagate with almost high peak intensity over a distance of $\sim 1\text{km}$. It works when more than 65% humidity is present in the atmosphere. Our findings could be used by scientists and engineers to create artificial rain through a new method. The results could be of immense benefit to human being.

This laser system can be operated from ground as well as from an aircraft. In this experiment, laser system can be operated from ground, Innovative rainmaking technology in the atmosphere as shown in Fig.No.1, in this demonstration, Peta Watt (10^{15} watt) pulse laser with double coarse Laser (1) primary laser and (2) secondary Laser as shown in fig.No.1.

A laser pulse has to be sent in the atmosphere to reach white warm clouds regions about 1.2 Km to 2.7 Km altitude. It will initiate endothermic reactions which will create lightning phenomena and rain as in nature. These white warm clouds will be converted in to black rainy clouds with natural seeding for rain enhancement in the atmosphere.

This laser system can be operated from ground as well as from aircraft. Plans to operate from ground are shown in figures No.1.

When operated from ground, covered area on the ground could be ~5 Km to 7 Km in radius. Fig.1 shows a plan to use two lasers. In this figure, Peta Watt (10^{15} watt) double Laser pulse laser with double coarse laser (1) primary laser and (2) secondary laser is shown. In this system, secondary laser energy is used for laser pulse travelling purpose and primary laser energy is used for creating artificial lightning in the upper atmosphere up to 1.2 Km to 2.7Km altitude for initiation of endothermic reactions, lot of heat energy absorbs from surrounding atmospheric clouds, condensations take place, water drops formations in the atmosphere. It's used as natural seeding process, to form another sets of raindrops, chains process occurs for rain enhancement in the atmosphere.

Innovative rainmaking technology by laser system from ground level can be used in the field of farmers. When the crops are on the verge of drying due to lack of rain since one to two months, this experiment can come to an aid. It can cover an area of more than 7 km of radius in a wind direction in the atmosphere as per Fig.No.1. In this experiment, two cylinders for Laser sending and travelling, one is vertical 750m height, another inclined cylinder 500m with rotating around in 360 angles horizontally as shown Fig.No.1.

For this experiment, hilly area must be selected on the field of farmer, with high power electric supply point already managed near the experiment site. High power laser system must be placed in a 12-wheel truck so that it becomes easy to transport it from one place to another. When the upper atmosphere is cloudy and more than 65% humidity is present in the atmosphere, the experiment can be started in the field of the farmer. We will measure atmospheric parameters such as humidity, temperature,

pressure, wind velocity, wind direction, etc. on ground level as well as in the upper level. For this purpose, a separate unit/department must be established as “Measuring & Maintains Department”. After the success of experiment, all related data, must be put it in software computer, for analysis and conclusion, with fixed perfect Laser design for maximum rainmaking / rainfall in the atmosphere.

In this way, we will use Laser system from ground as Peta Watt (10^{15} watt) double Laser power with double Laser means primary and secondary laser). Secondary Laser power will used for travelling purpose and primary Laser power used for creating artificial lightning in the atmosphere for rainmaking. Similarly, Laser power has to be peta-watt (10^{15} watt) or hexa-watt (10^{18} watt) should be used for creating artificial lightning in the atmosphere for rainmaking from ground level which is send as Laser pulses length 2.5m to 5.0m in repetition process in upper cloud regions as shown in Fig.No.1.

Demonstration on project proposal of Innovative Rainmaking Technology by Laser system from Ground level for Rain enhancement in the Atmosphere by IRRA Scientist Group.

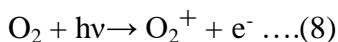
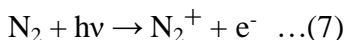
“Artificial Rainmaking Methodology by Laser system from Ground”, it’s most useful for green revolution in the whole world for all human beings.

In this way “Innovative Rainmaking Technology by Laser system from Ground”, can be used for green revolution in the whole world for all human beings.

DISCUSSION:

Innovative Rainmaking Technology is scientifically and

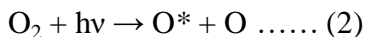
practically proven as “Laser induces condensation and water drops formation in Laboratory cloud’s chamber as well as in the atmosphere. However, according to Kasparian group, a laser pulse shot in the atmosphere ionizes N_2 and O_2



They have observed lightning phenomenon in the laboratory cloud chamber as “Laser induced condensation and water drops formation in the laboratory cloud chamber by Femtosecond – Terawatt mobile laser system”. Kasparian (2012) group says that it is the ionized species N_2^+ and O_2^+ which produce rain. But these two species are of micro size which cannot act as seeding agents. Also, N_2^+ and O_2^+ radicals are not observed by Kasparian group in laser filamentation experiments but production of O_3 and NO has been observed by them in laser filamentation experiments. Experiments of Kasparian group finds condensation and water drop formation and they say in their ionization theory that N_2^+ and O_2^+ act as seeding agent. They also say “Mechanism of laser-induced condensation involves photo dissociation, in which photons break down atmospheric compounds in the atmosphere”. This process produces Ozone and Nitrogen oxides, which lead to the formation of Nitric acid particles that bind water molecules together to create water droplets.” But there is no seeding and condensation and water drop formation is not due to seeding. Small water drops formed by laser in the laboratory cloud chamber are due only to endothermic reactions (cooling) and this is obvious. In the atmosphere, due to acceleration and

turbulence, these small sized water drops coalesce to form big rain drops. These rain drops act as a natural seeding process to form different sets of rain drops; this chain process continues with heavy rainfall.

Calculation for the energy required for dissociation is almost half of that required for ionization. The energy of a laser beam of wavelength λ is $h\nu$ ($\nu = 1/\lambda$ and h is Planck's constant). We will shoot laser pulse in the atmosphere and dissociate (break bonds of) N_2 and O_2 as follows:



Bond energy of $N_2 = 226$ kcal/mole.

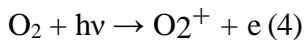
1 cal = 4.184 Joule, Avogadro number = 6×10^{23} . Therefore, energy required to break 1 molecule of $N_2 = 226 \times 10^3 \times 4.184 / (6 \times 10^{23}) = 1.58 \times 10^{-18}$ Jou

Bond energy of $O_2 = 96$ kcal/mole.

Therefore, energy required to break 1 molecule of $O_2 = 96 \times 10^3 \times 4.184 / (6 \times 10^{23}) = 0.67 \times 10^{-18}$ Joule

So, the total energy required for breaking 1 molecule of N_2 and 1 molecule of O_2 will be $(1.58 \times 10^{-18} + 0.67 \times 10^{-18}) = 2.25 \times 10^{-18}$ Joule.

When a laser pulse is shot in the atmosphere, it may ionize N_2 and O_2 as follows:



Ionizing potential of $\text{N}_2 = 15.58 \text{ eV} = 2.49 \times 10^{-18} \text{ Joule}$

Ionizing potential of $\text{O}_2 = 12.2 \text{ eV} = 1.95 \times 10^{-18} \text{ Joule}$

So the total energy required ionizing 1 molecule of N_2 and 1 molecule of

O_2 is $2.49 \times 10^{-18} \text{ Joule} + 1.95 \times 10^{-18} \text{ Joule} = 4.44 \times 10^{-18} \text{ Joule}$.

The above calculation shows that the energy required dissociating 1 molecule of N_2 and 1 molecule of O_2 is about half of that required to ionize them.

The energy required for dissociation is almost half of that required for ionization.

That means energy is first used up for dissociation, then the remaining energy (which may not be sufficient for ionization of N_2 and O_2) is delivered for ionization of N_2 and O_2 . Hence dissociation takes place and not ionization. The Kasparian group does not talk about dissociation. It is not only near the IR laser system, Yoshihara, et al. (2007), have discussed in their paper the possibility of creating artificial rain by using UV lasers. Our methodology is to send laser pulses to cloud regions to break bonds of O_2 and N_2 (by reactions 1 and 2), create endothermic reactions and condensation (by reactions 3 and 4) and produce rain in the similar way as in lightning. There is attenuation of energy in operating the laser through Aircraft.

Kasparian's group suggests an increase of laser power to petawatt (10^{15} watt) or exawatt (10^{18} watt) to create large water

droplets. We will operate from an aircraft in the same way as spraying chemicals from Aircraft. A laser pulse of energy 500mJ is capable of dissociating a column of N₂ and O₂ containing ($\sim 0.5/2.25^{-18}$) $\sim 10^{17}$ molecules which is much higher than the density in the atmosphere.

ACKNOWLEDGEMENT:

We express our sincere thanks to scientists: Prof Mamata R. Lanjewar (RTM University Nagpur), Prof A. P. Deshpande (Principal, Science College), Prof. Padmanabhan Murthy (J.N. University, New Delhi), Prof Umesh Kulshetra (J.N. University, New Delhi), Prof K. S. Korgaokar (Pune University, Pune), Dr. A.L. Agarwal (NEERI Nagpur), Dr. Nitin Saraf (B.D. Engineering College, Sewagram), Dr. K. M. Kharate, (GM Engineering College & Research Centre, Sheogao), Dr. Mrs. Sumanlatha Pandey, Mr. Shyam Ujjaninkar (Engineer), Mr. Bhola Katare, Bhandewadi, (Jay Shri Jaganatha Namom Namha), Mr. Withal Wagh, Waijegao, Sadguru Parmhans shri Ramchandra Maharaj Namom Nemaha. Mr. Rajesh Iyengar (P. N. College, Nanded). Dr. K.R. Gangakhedkar, (P. N. College, Nanded). Ex. Prof. Ratnakar Lanjewar (HOD, Chemistry Department), Science college, Nagpur. Nanded) for their valuable suggestions and guidance for project proposal.

8.0 ADDITIONAL USES:

This method can be used for rain harvesting by “rain drain”. When huge clouds are present above a lake or dam, a laser beam can be shot into the cloud region; then with blast of clouds heavy rainfall will occur to fill the lake or dam for future use of water. This method can also be used to reduce pollution of the atmosphere by spraying artificial rain on the polluted city.

Another use of this method is to stop excess rainfall. Low intensity laser pulse shot into the cloud region will evaporate the clouds from the excess rainfall area. This method can also be used to drive away the rain cloud from the region where rain is not needed.

CONCLUSION:

It is shown in this article that by initiating endothermic reactions in the cloud region of the atmosphere by a laser, artificial rain can be created. Laser may have the following specification: 10^{15} watt, 800nm, 500mJ, 120fs and 10Hz for operation from ground level. This method is economical (one time investment), harmless, eco-friendly and can be switched on and off when desired. It can be used at any place and at any time. It can also be used to fill lake or dam for storing rain water for future use (rain harvesting), to reduce pollution by spraying artificial rain on the polluted city, to stop rain in the region where it is not wanted or where rainfall is in abundance. It may not be out of place to state here that in the holy Hindu book "Mahabharata", there is a mention that by firing arrows in the atmosphere, rain was created by Arjun to quench the thirst of God "Bhishma".

Artificial rain making methods help to increase the green life and oxygen and decreasing the pollution. Thus, these methods play major role in reducing drought and increasing the quantity of drinking water in future.

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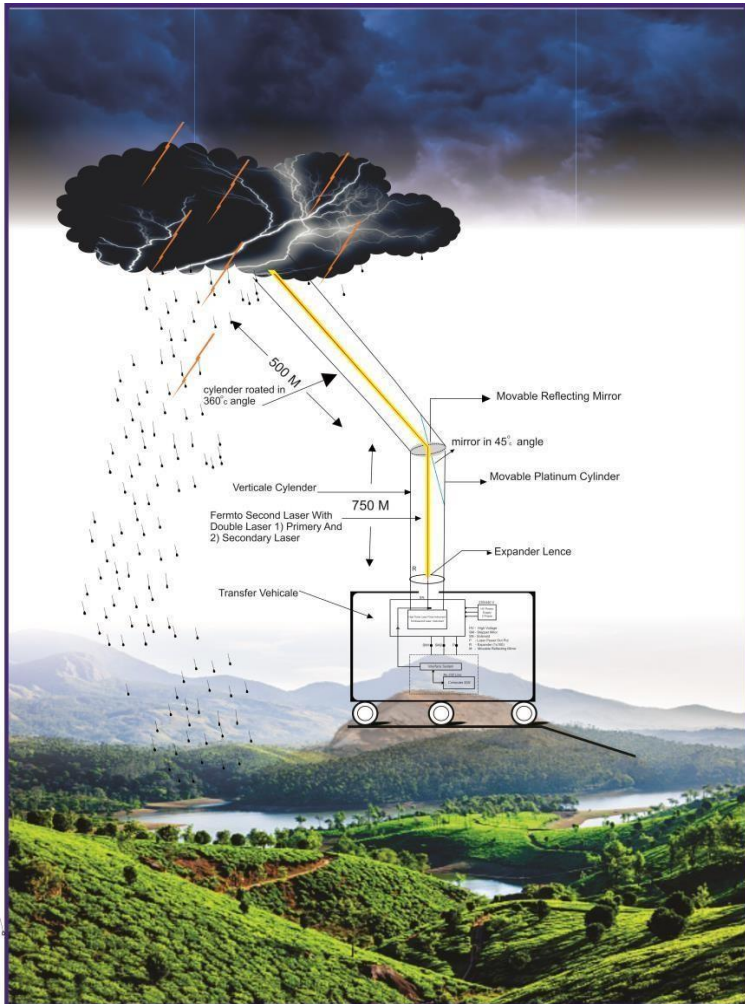
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*Please visit our YouTube Channel and search "Novel Technology for Artificial Rainmaking". Click here: - <https://youtu.be/UYfuH9fAmUs> More details can be found in Google Search: as "Artificial rainmaking by endothermic reactions" or S.K. Chopkar or on the

10.0 Figure:

Demonstration on Rainmaking Technology by Peta watt double Laser system from Ground:



Artificial Rainmaking By Laser System From Ground Level Fig : 1

Fig. 1

Work-Plan

Demonstration on Rainmaking Technology project proposal
for Three Years Work Planning

First Year		
1-4 Months	5-8 Months	9-12 Months
Publishing the advertisement for the appointment of scientists, skilled and non-skilled workers in the reputed newspaper.	Inviting experts from the concerned area for discussion on the project	Organization of two days national conference on the theme of the project
Demand for different instruments to different venders	Comparative statements of received quotations for the different instruments.	Accessories , assembly and instalment of received instruments on the mobile van and their testing
Selection of proper site and arrangement of electricity, road, guest house etc.	Purchase order of proper instrument to proper manufacturing company	
Second Year		
1-4 Months	5-8 Months	9-12 Months

carrying experiments on the selected site and recording the observations	Inviting experts from the concerned areas for table discussion on the observations taken	Analysis of the observations taken
	carrying experiments on the selected site and recording the	Interpretation of the data
	observations as per the direction given by the experts	
		Publication of the result in the reputed national and international journals
Third Year		
1-4 Months	5-8 Months	9-12 Months
Analysis of the observations taken	Compilation of the data in computer software and commercialization of the same for the benefit of society.	Filing the patent for the artificial rainmaking system

Interpretation of the data		Appeal to the Indian government and other countries to utilize this project for the benefit of Humankind.
Publication of the result in the reputed national and international journals		

5.0 Project proposal For Rainmaking in large scale from Aircraft

“Artificial rainmaking by Tera Watt (10^{12} Watt) mobile Laser system from Aircraft, initiation of Endothermic Reactions, as similar natural lightning phenomena in the atmosphere”

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Abstract:

In the atmosphere, after lightning, precipitation is formed and heavy rainfall occurs. This is a well-known process. This natural lighting phenomenon has been practically demonstrated in the laboratory cloud chamber, as a “Laser-induced condensation & water drop formation” and “Water drops formation by each and every laser shot in the cloud chamber”. In this process, lightning/laser creates high temperature which breaks the bonds of N_2 and O_2 to form excited N^* and excited O^* . The total heat energy of lightning/laser is completely utilized for breaking the bonds of N_2 and O_2 (Chopkar, 1993). This excited N^* and excited O^* moves to the new place by wind and undergoes reactions to form NO and O_3 which are endothermic reactions. The heat energy required for these reactions is taken from the surrounding atmospheric clouds.

As a result of these reactions, the temperature falls, condensation takes place, and raindrops form, these raindrops act as a natural seeding process, to form another set of raindrops, seeds are created and rain occurs in an analogous way similar to rains created in nature by lightning.

In this process, white clouds convert into black rainy clouds for rainmaking in the atmosphere. This process has been practically proven in the laboratory as “Production of ozone and nitrogen oxides by laser filamentation”. It is believed that “Laser photons photo-dissociate atmospheric compounds N_2 and O_2 form ozone (O_3) and nitrogen molecules (NO). “An increase in O_3 and NO concentration after lightning has also been experimentally observed”.

This lightning phenomenon created through artificial lightning by a plasma laser pulse or laser system can produce rain in the atmosphere and has been practically proved as “Laser-induced water condensation in the air”.

Scientists have obtained raindrops from an altitude of 75m of the atmosphere by terawatt mobile laser. “IRRA Scientist Group propose laser system of specification: 10^{12} -watt, 800nm, 500mJ, 120fs and 10Hz for this research project”. The results could be of immense benefit to human beings.

Keywords: Artificial rain; Atmospheric cloud; Condensation; Endothermic reactions;

Laser system; Precipitation; Raindrops; Rainfall; Natural Seeding.

10.0 Introduction:

Rain plays a great role in national economy by influencing the

agriculture yield. Nevertheless, rain is a natural phenomenon and it does not fall as and when man needs it and hence, man has been trying to create artificial rain for the past many years. At present, the process, which is used for creating artificial rain, is seeding. In this process, chemicals such as silver iodide, calcium chloride or sodium chloride are used as seeds. They are spread from the aircraft in the cloud region. Nucleation starts on these chemicals, which lead to the precipitation and then rain. This process has been tried in South Africa,

Thailand, Japan, Mexico, Brazil and some parts of India. However, this process, on most of the occasion fails. Besides, it is harmful to humankind because it brings harmful

chemicals on earth along with the rain. It is, also, expensive. In this paper, we propose a laser system to produce artificial rain. Our system has advantages over the seeding process that it does not pollute the environment; it is a onetime investment and is less expensive. In addition, it can be targeted to even warm white clouds, which are not rainy (in seeding process only black rainy clouds are targeted).

10.1 Practical Evidences:

Several attempts have been made by various researchers to create artificial rain by laser. Golde (1977) from a number of radar observations has reported that intense precipitation is not even present in the clouds before the first discharge but develops abruptly in the same region after discharge from which the lightning flashes originate.

Carls and Brock (1987) heated the atmosphere by a laser pulse up to 1600 to 2800K and observed water droplet formation. They predicted that high temperature causes ionization of N_2 and

O₂ and, when this ionized air is subjected to more radiation, avalanche breakdown of air can occur. Braun et al. (1995) have observed laser induced condensation and water drops formation by shooting self-channeling of high- peak power femtosecond laser pulses in the air. Yoshihara et al. (2007) have shown that the pulsed UV-laser irradiation of ambient air induces formation of water droplets or small ice particles in the laboratory. They also observed that [O] formed in this process quickly reacts with O₂ molecules to form O₃. Rohwetter et al. (2010) have shown that ionized filament, generated by ultra-short wave laser pulses induce water-cloud condensation in the sub-saturated atmosphere in the altitude region between 45m and 75m. A team, called terra-mobile-group (TMG), consisting of scientists from Switzerland, Germany and France, have been trying to create artificial rain by laser (Kasparian et al.2000; 2003; Mejean et al. 2006; Rohwetter al. 2010; Kasparian et al. 2012). They have done simulation experiment in laboratory cloud chamber and have observed condensation and water drops formation. They also succeeded in producing tiny water particles in moderately humid air in an altitude of 45 to 75m of the atmosphere by terawatt mobile laser. But the droplets were about a hundred times too small to fall as raindrop; instead, they remained suspended in the air.

The team feels that it is feasible to get larger droplets if the power of laser is increased to petawatt (10¹⁵watts) or exawatt (10¹⁸watts).

They further say that the effectiveness of this method is much easier to gauge than traditional cloud-seeding techniques and that it could provide to be a practical means of triggering rainfall". (Search Google

as ‘Laser makes rain, heavily’2010). A group of Scientists from Florida University also observed water drops formation by high power laser shooting experiment. It appears from the above that laser has not yet succeeded in producing artificial rain. In this paper, a novel method is described to create artificial rain by laser.

10.2 Condensation is the Basic Need for Water Drops Formation:

IRRA Scientist Group has been doing successful experiments in laboratory, for ‘Condensation is the basic need for water drop formation’. That condensation is the basic need for water drop formation can be understood by taking two glasses, one filled with normal water and another with ice pieces. After sometime one can observe water droplets on the outer surface of the glass which contains ice but not in the other. This is due to the condensation process that occurs around the ice glass. So, IRRA Scientist Group, proposed a laser system for this research project, to create artificial lightning by initiation of endothermic reactions, similar to natural lightning phenomena, for artificial rainmaking. As a result of these reactions, temperature falls, condensation takes place, seeding occurs and it rains in an analogous way similar to rains created by lightning. This process has been practically proved in the laboratory and atmosphere as “production of ozone and nitrogen oxides by laser filamentation”. A number of scientific and practical tests have been conducted in cloud chambers and in the atmosphere to prove this hypothesis, as

“Laser induce condensation and water drops formation by Laser shooting in the laboratory cloud chambers as well as in the atmosphere”.

Now the question arises that what are the conditions required for condensation.

This means that, only and only, endothermic reactions are responsible for condensations, which also produces NO (Nitrogen Oxides) and O₃ (Ozone) after shooting laser beams triggering endothermic reactions, condensation and precipitation. These tiny water drops act as a natural seeding process, due to acceleration and tribulation by wind force in the atmosphere, to form another set of raindrops with heavy rainfall as lightning rain. Endothermic reactions are responsible for condensation. Condensation is the basic need for water drop formation as above laboratory experiment, “Condensation is the Basic Need for Water Drops Formation”.

This novel Rainmaking Technology can be used for white, warm clouds too which get converted into black rainy clouds for rain enhancement. As well as, water drops formation by high power Laser shooting, “Laser makes rain”.

The IRRA scientist Group has already demonstrated “Innovative Rainmaking Technology” in the Laboratory cloud’s chamber successfully, and results have been published in “Indian Journal of Science & Technology”, <http://indjst.org>, vol.1, No.6 (2008).

Now, the project proposal, the design of the laser system, the Budget estimate, and the work plan are ready with IRRA Scientist Group, India. IRRA Scientist is ready for demonstration and collaboration with the Government for funding purposes for project proposal on “An Innovative Rainmaking Technology using Laser system from Aircraft to form raindrops acting as the natural seeding process due to initiation of Endothermic Reactions, for rain enhancement in

large scale in the atmosphere”.

In this experiment, femto-second–terawatt laser creates artificial lightning in the atmospheric cloud’s regions by Air craft. These white warm clouds are converted into black rainy clouds with natural seeding for rain enhancement in the atmosphere.

A laser pulse will be sent to the cloud to initiate endothermic reactions which will create lightning phenomena, as in nature, mentioned above. For example, a German-French group has used a femtosecond–terawatt laser to obtain “Laser-assisted water condensations in the atmosphere”. They have succeeded in obtaining raindrops from an altitude of 45m to 75m of the atmosphere. This novel Rainmaking Technology can be used for white, warm clouds too which get converted into black rainy clouds for rain enhancement.

*As well as, water drops formation by high power Laser shooting. “Laser makes rain” by Florida University, Scientist experimentally observed.

*As per report, a group of European scientists working on artificial rain said in 2010, “Firing extremely powerful laser pulses through humid air can stimulate the formation of clouds, according to a team of European scientists.

They say that the effectiveness of this method is much easier to gauge than traditional cloud-seeding techniques and that it could provide to be a practical means of triggering rainfall”. (Search Google as ‘Laser makes rain, heavily’2010).

In Indian ancient tradition, there is a mention in Vedshastra that “Fire arrows are sent towards the atmospheric clouds which is responsible for immediate rainfall “Our system could be a

terawatt femtosecond Ti: sapphire pulse laser. Its fundamental wavelength could be ~800nm. The pulse will have energy of ~500mJ, 120fs and repetition frequency of 10Hz. The laser pulses have to propagate with almost high peak intensity in atmospheric clouds.

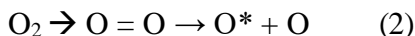
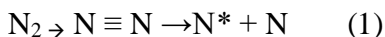
It works when more than 65% humidity is present in the atmosphere. Our findings could be used by scientists and engineers to create artificial rain through a new method. The results could be of immense benefit to human being.

10.3 How will laser create artificial rain? Theory:

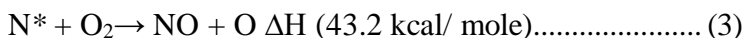
For creation of rain, according to well established meteorology theory (Can be found in any textbook of meteorology), steps are the following:

First (i) creation of low temperature → then (ii) condensation then (iii) seed (CCN) formation → then (iv) tiny water drops formation and rain occur in the atmosphere.

The present methodology is to send laser pulse to the cloud region of the atmosphere to create high temperature. This high temperature will break the bonds of O₂ and N₂ as follows:



In this processing N and O in excited state (N*, O*) will be created. These excited N* and O* are very unstable and immediately come to the ground state through following reactions.



The occurrence of reactions 3 and 4 and formation of NO and O₃ have confirmation from NASA laboratory experiments [Sanders et al. 2003]. Formation of O₃ and NO, after laser shot, has been observed in laser experiment in atmosphere (Petit et al. 2010). The reactions 3 and 4 are endothermic and therefore, they need heat energy (amount mentioned in brackets) which is absorbed from the cloud region. As a result, temperature of the cloud region falls (first step of rain formation is achieved and then other steps follow), condensation takes place, seeds (CCN) will be formed, and tiny water drops will be created. These tiny water drops may act as natural seeds to form another sets of rain drops. This chain process will result in rainfall. Ozone and Nitric oxide, O₃ and NO (formed in reactions 3 and 4) will undergo further reaction to form HNO₃ particles other nitrogen compounds, which will bind water molecules together to create water droplets.

These water droplets again will act as natural seeds to form another sets of rain drops. In the atmosphere, due to turbulence, small water drops coalesce and form big rain drops. In addition, ions N₂⁺ and O₂⁺ and electrons formed by cosmic rays can create complex hydrated heavy positive and negative ions... HNO₃ (H₂O)_n (where the value of n could be as large as 50) which can also act as seed to create rain.

In short, to create artificial rain by laser, endothermic reactions are to be generated in the cloud region. It has been shown earlier how much heat energy is absorbed by endothermic reactions from atmospheric clouds

(Chopkar 1993a, b; Chopkar and Chakrabarty 2008; Chakrabarty et al. 2010; Chopkar et al. 2010). The energy required to break bonds of 1 molecule of N₂ and 1 molecule of O₂, = 2.25×10^{-18} Joule. A laser pulse of energy 500mJ can

dissociate a column of N_2 and O_2 containing $(\sim 0.5/2.25^{-18}) \sim 10^{17}$ molecules which is much higher than the density in the atmosphere?

Laser can be operated from the ground as well as from an aircraft. In former case, laser pulse has to propagate to a height of $\sim 1\text{km}$ (cloud height) from the ground. There will be attenuation of energy in this propagation. Kasparian et al. (2012) experimented with terawatt laser from the ground and observed tiny raindrops in an altitude of 45m to 75m of the atmosphere. To create large water droplets at higher altitudes, the group feels that laser power has to be peta-watt (10^{15}watt) or hexa-watt (10^{18}watt). If laser is operated from aircraft, then attenuation of energy will be less. In that case, laser power can reach the cloud region without much attenuation. It can also cover large area and can move to any place. Turbulence created by the aircraft in the atmosphere can also create small water drops which would collide with each other and form big rain drops.

10.4 Methodology for Artificial Rainmaking by Laser system, on board Aircraft:

We propose a laser system of following specification: 10^{12}watt , 800nm, 500mJ, 120fs and 10Hz for this research project on board aircraft (Fig.1).

In aircraft, as shown in Fig. 2, there are two floors. In the 1st Floor of height 9', the parts shown as (1), (2) and (3) are where laser system is installed, and in the 2nd Floor of height 7' 6" parts shown in (A), (B), (C) and (D) with stair case are where power supply unit is installed. There is railing for open space shown as square dots. In the aircraft, seven Laser instruments

shall be installed, 3 on right side, 3 on left side (as shown in part-1) and one on back side. Aircraft will release seven high power laser pulse in the atmospheric clouds. They will cover more than 200Km² area. Speed of aircraft will be ~100km/hr.

In aircraft there shall be instruments by which we have to measure atmospheric parameters such as humidity, temperature, pressure, wind velocity, wind direction, etc. on ground level as well as in the upper level of atmosphere. When the upper atmosphere is cloudy and more than 65% humidity is present in the atmosphere; the experiment can be started. After the completion of the experiment, all data are analyzed.

In this experiment, femto-second–terawatt laser creates artificial lighting in the atmosphere up to 1.2 Km to 3.2 Km altitude in the white warm cloud's regions.

These white warm clouds are converted into black rainy clouds with natural seeding for rain enhancement in the atmosphere.

A laser pulse will be released from Aircraft as multiple lightning created in to the upper atmospheric cloud to initiate endothermic reactions which will create lightning phenomena, as in nature, mentioned above. The laser technology for this purpose, though not fully developed, yet exists. For example, a German-French group has used a femtosecond–terawatt laser to obtain “Laser-assisted water condensations in the atmosphere”.

They have succeeded in obtaining raindrops from an altitude of 45m to 75m of the atmosphere. This novel Rainmaking Technology can be used for white, warm clouds too which get converted into black rainy clouds for rain enhancement. *As well as, water drops formation by high power Laser shooting. “Laser make s rain” b y F l o r i d a University, Scientist

experimentally observed.

*As per report, a group of European scientists working on artificial rain said in 2010, “Firing extremely powerful laser pulses through humid air can stimulate the formation of clouds, according to a team of European scientists.

They say that the effectiveness of this method is much easier to gauge than traditional cloud-seeding techniques and that it could provide to be a practical means of triggering rainfall”. (Search Google as ‘Laser makes rain, heavily’2010). In Indian ancient tradition, there is a mention in Vedshastra that “Fire arrows are sent towards the atmospheric clouds which is responsible for prompt rainfall”

Our system could be a terawatt femtosecond Ti: sapphire pulse laser.

Its fundamental wavelength could be ~800nm. The pulse will have energy of ~500mJ, 120fs and repetition frequency of 10Hz. The laser pulse has to propagate with almost high peak intensity over a distance of ~1km.

It works when more than 65% humidity is present in the atmosphere.

Our findings could be used by scientists and engineers to create artificial rain through a new method. The results could be of immense benefit to human being.

It will initiate endothermic reactions which will create lightning phenomena and rain as in nature. These white warm clouds will be converted in to black rainy clouds with natural seeding for rain enhancement in the atmosphere.

When the upper atmosphere is cloudy and more than 65% humidity is present in the atmosphere; the experiment can be started in the field of the farmer.

We will measure atmospheric parameters such as humidity, temperature, pressure, wind velocity, wind direction, etc. on ground level as well as in the upper level.

For this purpose, a separate unit/department must be established as “Measuring & Maintains Department”. After the success of experiment, all related data, must be put in software computer, for analysis and conclusion, with fixed perfect Laser design for maximum rainmaking / rainfall in the atmosphere.

In this way, we will use Laser system as Femto-second terawatt Laser 10^{12} watt power, on board Aircraft. Similarly, Laser power has to be peta-watt (10^{15} watt) or hexa-watt (10^{18} watt) should be used for creating artificial lightning in the atmosphere for rainmaking from ground level which is send as Laser pulses length 2.5m to 5.0m in repetition process in upper cloud regions.

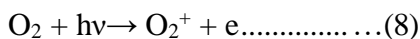
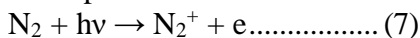
Demonstration on project proposal of Innovative Rainmaking Technology by Laser system on board Aircraft for Rain enhancement in the Atmosphere by IRRA Scientist Group.

“Artificial Rainmaking Methodology by Laser system on board Aircraft”, it’s most useful for “Green revolution in the whole world for all human beings”.

10.5 DISCUSSION:

Innovative Rainmaking Technology is scientifically and practically proven as “Laser induces condensation and water drops formation in Laboratory cloud’s chamber as well as in the atmosphere

However, according to Kasparian group, a laser pulse shot in the atmosphere ionizes N_2 and O_2



They have observed lightning phenomenon in the laboratory cloud chamber as “Laser induced condensation and water drops formation in the laboratory cloud chamber by Femtosecond – Terawatt mobile laser system”. Kasparian (2012) group says that it is the ionized species N_2^+ and O_2^+ which produce rain.

But these two species are of micro size which cannot act as seeding agents. Also, N_2^+ and O_2^+ radicals are not observed by Kasparian group in laser filamentation experiments but production of O_3 and NO has been observed by them in laser filamentation experiments. Experiments of Kasparian group finds condensation and water drop formation and they say in them ionization theory that N_2^+ and O_2^+ act as seeding agent. They also say

“Mechanism of laser-induced condensation involves photo dissociation, in which photons break down atmospheric compounds in the atmosphere”.

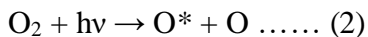
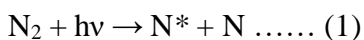
This process produces Ozone and Nitrogen oxides, which lead to the formation of Nitric acid particles that bind water molecules together to create water

droplets.” But there is no seeding and condensation and water drop formation is not due to seeding. Small water drops formed by laser in the laboratory cloud chamber are due only to endothermic reactions (cooling) and this is obvious. In the atmosphere, due to acceleration and turbulence, these small

sized water drops coalesce to form big rain drops. These rain drops act as a natural seeding process to form different sets of rain drops; this chain process continues with heavy rainfall.

Calculation for the energy required for dissociation is almost half of that required for ionization.

The energy of a laser beam of wavelength λ is $h\nu$ ($\nu = 1/\lambda$ and h is Planck's constant). We will shoot laser pulse in the atmosphere and dissociate (break bonds of) N_2 and O_2 as follows:



Bond energy of $N_2 = 226 \text{ kcal/mole}$.

1 cal = 4.184 Joule, Avogadro number = 6×10^{23}

Therefore, energy required to break 1 molecule of

$$N_2 = 226 \times 10^3 \times 4.184 / (6 \times 10^{23}) = 1.58 \times 10^{-18} \text{ Jou}$$

Bond energy of $O_2 = 96 \text{ kcal/mole}$.

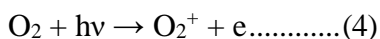
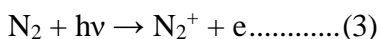
Therefore, energy required to break 1 molecule of

$$O_2 = 96 \times 10^3 \times 4.184 / (6 \times 10^{23}) = 0.67 \times 10^{-18} \text{ Joule}$$

So, the total energy required for breaking 1 molecule of N_2 and 1 molecule of

$$O_2 \text{ will be } (1.58 \times 10^{-18} + 0.67 \times 10^{-18}) = \underline{2.25 \times 10^{-18} \text{ Joule.}}$$

When a laser pulse is shot in the atmosphere, it may ionize N_2 and O_2 as follows:



Ionizing potential of $N_2 = 15.58 \text{ eV} = 2.49 \times 10^{-18} \text{ Joule}$

Ionizing potential of $O_2 = 12.2 \text{ eV} = 1.95 \times 10^{-18} \text{ Joule}$

So the total energy required ionizing 1 molecule of N_2 and 1 molecule of O_2 is $2.49 \times 10^{-18} \text{ Joule} + 1.95 \times 10^{-18} \text{ Joule}$ _____
 $= 4.44 \times 10^{-18} \text{ Joule}$.

The above calculation shows that the energy required dissociating 1 molecule of N_2 and 1 molecule of O_2 is about half of that required to ionize them.

The energy required for dissociation is almost half of that required for ionization.

That means energy is first used up for dissociation, then the remaining energy (Which may not be sufficient for ionization of N_2 and O_2) is delivered for ionization of N_2 and O_2 . Hence dissociation takes place and not ionization. The Kasparian group does not talk about dissociation. It is not only near the IR laser system,

Yoshihara, et al. (2007), have discussed in their paper the possibility of creating artificial rain by using UV lasers. Our methodology is to send laser pulses to cloud regions to break bonds of O_2 and N_2 (by reactions 1 and 2), create endothermic reactions and condensation (by reactions 3 and 4) and produce rain in the similar way as in lightning. There is attenuation of energy in operating the laser through Aircraft. Kasparian's group suggests an increase of laser power to petawatt (10^{15} watt) or exawatt (10^{18} watt) to create large water droplets. We will operate from an aircraft in the same way as spraying chemicals from Aircraft. A laser pulses of energy 500mJ is capable of dissociating a column of N_2 and O_2 containing $(\sim 0.5/2.25^{-18}) \sim$

10^{17} molecules which is much higher than the density in the atmosphere.

10.6 ADDITIONAL USES:

This method can be used for rain harvesting by “rain drain”. When huge clouds are present above a lake or dam, a laser beam can be shot into the cloud region; then with blast of clouds heavy rainfall will occur to fill the lake or dam for future use of water. This method can also be used to reduce pollution of the atmosphere by spraying artificial rain on the polluted city.

Another use of this method is to stop excess rainfall. Low intensity laser pulse shot into the cloud region will evaporate the clouds from the excess rainfall area.

This method can also be used to drive away the rain cloud from the region where rain is not needed.

10.7 ACKNOWLEDGEMENT:

We express our sincere thanks to scientists: Prof D.K. Chakarbarty (PRL Ahmadabad Prof Mamata R. Lanjewar (RTM University Nagpur), Prof A. P. Deshpande (Principal, Science College), Prof. Padmanabhan Murthy (J.N. University, New Delhi), Prof Umesh Kulshetra (J.N. University, New Delhi), Prof K. S. Korgaokar (Pune University, Pune),

Dr. A.L. Agarwal (NEERI Nagpur), Dr. Nitin Saraf (B.D. Engineering College, Sewagram), Dr. K. M. Kharate, (GM Engineering College & Research Centre, Sheogao), Dr. Mrs. Sumanlatha Pandey, Mr. Shyam Ujjaninkar (Engineer), Mr. Rajesh Iyengar (P. N. College, Nanded) for their valuable suggestions and guidance for project proposal.

10.8 CONCLUSION:

“Artificial rainmaking in large scale by laser system which initiate endothermic reactions, as similar natural lightning phenomenon, onboard Aircraft in the atmosphere” It is shown in this project proposal that by initiating endothermic reactions in the cloud region of the atmosphere by high power laser, artificial rain can be created. Laser may have the following specification: 10^{12} watt, 800nm, 500mJ, 120fs and 10Hz for operation onboard Aircraft. This method is economical (one time investment), harmless, eco-friendly and can be switched on and off when desired. It can be used at any place and at any time. It can also be used to fill lake or dam for storing rain water for future use (rain harvesting), to reduce pollution by spraying artificial rain on the polluted city, to stop rain in the region where it is not wanted or where rainfall is in abundance. It may not be out of place to state here that in the holy Hindu book “Mahabharata”, there is a mention that by firing arrows in the atmosphere, rain was created by Arjun to quench the thirst of God “Bisham”.

Artificial rain making methods help to increase the green life and oxygen and decreasing the pollution. Thus, these methods play major role in reducing drought and increasing the quantity of drinking water in future.

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10.11: Figures for Demonstration on Rainmaking:

Demonstration on Innovative Rainmaking Technology by Laser system onboard Aircraft.



Fig. No. 1 - For Rainmaking by Laser using Aircraft in the atmosphere.

Figure No.2: “Inner Deign of Aircraft with Laser system and Position of Laser system in Aircraft”

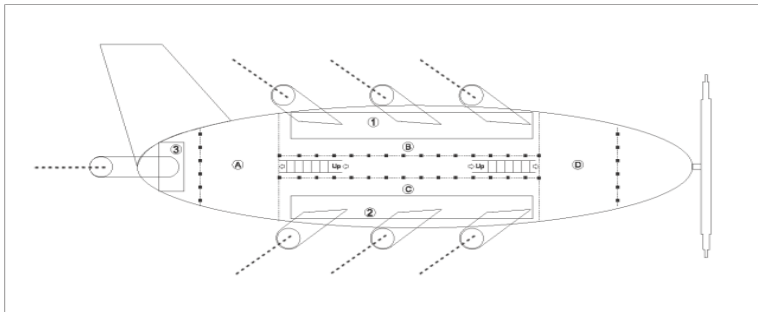


Fig.No.2: “Position of Laser system in Aircraft”

Note: * In figure No. 2, on first floor, height 9’, shown parts (1), (2) and (3) are high power Laser release system which creates multiple artificial Lightning in the upper atmospheric clouds directly by Laser system

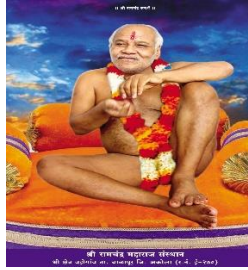
* In figureNo.2, on second floor, height 7’ 6”, shown parts (A),(B),(C) and (D) with stair case are high power generation system for high power Laser system, with railing for open space as shown square dots ...

PART- 2

SUPREME GOD'S POWER & MODIFIED LAW OF CONSERVATION

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6.0 Shri Sadguru Parmhans Ramchandra Maharaj Namonamha''



***“What is God...? God’s Power Means
G- Generation, O-Operation, D-Destruction”***

S.K. Chopkar, Rajesh Iyengar, D.K. Chakarbarti IRRA
Scientists Group, India.

God is a divine power,
not an ordinary mortal.

Those who worship

His authority ultimately attains supreme power.

ईश्वर ऐसे शक्ति ! ईश्वर नसे व्यक्ति !
जो करी भक्ति ! तयासी मिले शक्ति ! ध्रु!

**God! such as soul power!
Soul is God! God is Soul!!
Who worship heartily God!
Ultimately gets God Power!!**

-Shivshankar Chopkar

Shri Sadguru Parmhans Ramchandra Maharaj Namoh Namha

****No Problem in Whole Life****

"No Problem"

***For each and every one,
Somewhere or another,
There are so many problems!
But no problem!***

***If you are a passenger,
And God is the driver,
Then, no problem in whole life!***

***Otherwise, for each and every one,
Somewhere or another,
There are so many problems!
But, no problem!***

***If you are a passenger,
And God is the driver,
Then, no problems in whole life!***

By -Shivshankar Chopkar

(Devotees of shri Ramchandra's God)



**International Academy of Science,
Engineering and Technology**
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International Journal of Humanities and Social Sciences
(IJHSS) ISSN (P): 2319–393X; ISSN (E): 2319–3948
Vol. 10, Issue 1, Jan–Jun 2021; 99–104
© IASET

Article History

Received: 21 Apr 2021 | Revised: 30 Apr 2021 | Accepted: 08 May 2021

7.0 Supreme God Power Always Exist in The Universe, Active as Soul in Human Body

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ABSTRACT

When the soul is present in human body, the body does all the activities. But when human body dies, the soul disappears from the body. No sooner it leaves the human then the physical activities get stunted. But do you know why it does not work? Our eyes, hands, mouth and each and every part of human body is very much there, but still the body does not work without the soul? Why? Soul is very vital for human body since it helps

human body to work, eat, speak, walk...etc. This is the same power which works in the Universe system which in other words could be called the God Power.

The whole Universe is controlled by SUPREME GOD POWER. But Science fails to recognize this supreme God power, which always exists in the whole Universe. It is an ultimate truth. The Supreme God power exists in each and every soul of the Universe.

KEYWORDS: Soul, God, Universe, Law of Conservation, Supreme God Power, Human Body, Science, Spiritual Power.

INTRODUCTION

This is a solemn effort to deliberate about the soul which is present in human body. When the soul is present in human body the body does all the activities like working, eating, speaking, walking, etc.....But when human body dies, the soul goes away and disappears from the body. The moment it leaves the human self then the physical activities stop abruptly.....etc. But do you know why it does not work? Physical attributes of human body is there, still the body does not work without the soul? Why? Soul is very vital for human body since it helps human body to function. This is the same power which works in the Universe system which in other words could be called the God Power, Search on Google about Christianity, Bible (2019).

The whole Universe is controlled by one SUPREME GOD. But Science fails to recognize this supreme God power, which always exists in the whole Universe. It is an ultimate truth. The Supreme God power exists in each and every soul of the Universe, Google Search as Judaism (2018).

SCIENCE CAN'T PROVE THE EXISTENCE OF GOD NOR COULD IT CREATE GOD POWER PRACTICALLY

As per our knowledge, we cannot create God particles since the power of God already exists in the whole Universe. That's called Supreme 'Power of God'. In fact, we are made by the God, so we can't make God or God particles. It's a universal truth. But some scientists are in pursuit of producing God particles, with no success as yet, Search on Google as creation of God Particle practical Result (2019).

The supreme Power of God is present within our soul and also present inside all human beings and animals, birds and other creatures too. It is the power of the soul within us that makes us eats, work, speak, walk etc. But after our death, when the soul departs, we can't do the same things. This power of soul means Power of God, which cannot be practically measured by science. This soul is nothing but power of God which is very important. Similarly, in the Universe, Supreme power of God is very essential. It is this power which maintains planetary position in the Universe. A soul constitutes power of God within the human frame of body which functions in the Universe, Search on Google as Sikh (2018).

This theory is a fact without a shroud of doubt. Supreme power of God pervades the whole of Universe i.e. Moon, 3Earth, Jupiter etc. too. We can't see this supreme power of God with naked eyes. Because the power of God is without shape, length, width, volume, etc. God is "Nirgun", and "Nirvikar" as per Adhayatm Guru, Shrimad Bhagawat Gita (2017). Along with the Universe, the supreme power of God has created us. If Science reposes faith on this Supreme power of God, then things could

work out in better direction.

GOD POWER FUNCTION

Our Soul is the power of God and this power is present in our body. Our body activities such as eating, walking, working etc., are the result of our soul, but when the soul, which means power of God disappears from our body, our body will be there for sure, our eyes will be there, all things will be there, but it can't be termed as working. Why? Can Science answer this question? Who runs this system? Power of God is important. But our question is why the power of soul could be not measured by science? Quran (2018).

Power can be described in two parts:

Supreme God Power (Nirgun, Nirvikar).

Physical Power (Bhautik Shakti)

Supreme God Power (Nirgun, Nirvikar)

Nirgun or Nirvikar is the power of God, the union of 'Atma' and 'Parmatma'. The power of God is without 'properties', but includes all properties in it. The power of God has no shape, no size, and no volume. The power of God is the supreme power which is present in the body as soul ("Atma"). This power cannot be seen with naked eyes and we can only experience the same within soul, Search on Google as Bahai (1892)

Physical Power (Bhautik Shakti)

There are properties such as solid, liquid, air etc. These properties have some shape, size, volume etc. which we can see or realize by naked eyes. These properties are created by Supreme power of God in the Universe. These powers can be converted from one form to another, as per old 'Law of conservation'.

THERE ARE TWO SCHOOLS OF THOUGHT

Spiritual (Adhyatm) Science (Vidnyan)

Spiritual (Adhyatm): In spiritual (Adhyatm) power thinking, it is comprehended that the Universe is created by the Trinity Gods Brahma, Vishnu and Shiva (Mahesh) from "Adimayashakti" .

Science uses a different perspective and puts forward this concept in different words.

Science (Vidnyan): Science believes that the whole world is made up of “Atom” (Anu Renu) which constitutes electron, proton, and neutron, which is bonded with energy.

From the above discussion, it is evident that the two different streams of thinking, Spiritual (Adhyatm) and Science (Vidnyan) are in fact, one and the same. In other words, it could be said that they are two different sides of the same coin.

God is Important in Our Life

If God is the driver, scarcely do we have a problem; Otherwise, there is no scarcity of problems,

For everyone, there are only problems;

But don't worry if you are passenger and the God is the driver;
Then life will be like a flowing river;

So keep in mind, always pray the God

Call him, Oh God! Oh my Lord, please come.....And always stay,
in our lovely heart; 5

Come quietly and fill our life with peace, satisfaction and be our part; Come into our being and give us a good direction as a director of our life; OH God! Oh my Lord, please enter into.....

our life. God is the supreme power in the Universe and we have utmost faith on Him.

You are the pure soul, the God power, the 'Parmatma' who permeates our body in the form of hymns.

Our life is a journey and God is our driver. If God is our driver, then our life is without hardships. In his absence our life becomes a messy hell with countless problems. There is no place where there are any problems. But our life becomes easy if we treat ourselves as passenger and the God as driver. Then, only our problems can subside. So, a deep prayer calling God to stay in our heart shall bring the necessary quietness and peace in our life with utmost satisfaction. If we call God from the bottom of heart then our rudderless life attains a balance and good direction. God is supreme power in the Universe; we should have unquestionable faith in God. This solves your problems and makes your soul pure and unites you with the ultimate God power (Parmatma), Search on Google as Zoroastrian (2018).

GOD POWER CREATION AND DESTRUCTIONS IN THE UNIVERSAL

We know that according to the old law of conservation 'energy is neither created, nor destroyed', Google search results on law of conservation (2020). Is there any scientific evidence to prove this Universal Law? If yes, how to prove it? But our knowledge, observation, research mind and research study, regarding the "New law of conservation" say that, energy can be created at a certain point, and energy can be destroyed up to certain limits too. In between creation and destruction, there are conservations; which means, energy gets converted into another form. It is a universal truth wherever there is a creation there is

destruction.

NOW WE WILL DISCUSS ABOUT THE NEW LAW OF CONSERVATION

Practical Observation

Take a real-world example of our prime energy source, the Sun. It's a well-known fact that Sun shines every day and it will do so for eons together. We can see that lot of energy is generated from the Sun's surface per minute as light energy and heat energy, but still the volume of Sun remains unchanged till now. How it is possible? This means that energy is created on Sun's surface as fusion reactions. Whatever it may be, energy is created there. Now, it's a proven fact that energy is created on the surface of Sun.

Now, we will discuss about the sun rays, which comes out from Sun's surface. Sun rays come out with light and heat energy. Light travels at a speed of 2,99,792 kms per second; which means nearly 3 lakh kilometer per second.

This phenomenon rolls on continuously for lakhs and crores of years and the Scientist say this will go on in future as well. The fact is, who has measured/observed the sun rays travelling? As per our knowledge, the sun rays get destroyed while travelling, which ultimately means 'energy' gets destroyed.

CONCLUSIONS

Now, it's distinct and clear that the Supreme God power is important in the whole Universe which controls the whole Universal system. Soul power is very important for Human body just like the Supreme God power which controls the whole Cosmos.

The new 'Law of Conservation' proves that although energy is created at a particular point, it also gets destroyed at a certain limit, which is because of the Supreme God Power in the whole Universe. However, Science's faith on God power cannot be established although we know, many scientists do have faith on God, when they exclaim and say.... Oh God! This means they are aware of God power. 7

ACKNOWLEDGEMENT

We express our sincere thanks to several friends of IRRA Scientist Group, Dr.D.K. Chakarbarty, Mr. Rajesh Iyengar, Avinash Parate, Vijay Khode, for help at different stages of this work.

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Quran (2018): Quran is a revelation by the God to Prophet Hazrat Mohammad. In Quran, God is described as "Allah-O-Akbar" Allah means God is greater in the Universe.

*Search on Google about Christianity, Bible (2019) : it can be found that "God is responsible for the creation of the Earth, world, and universe in human religion and mythology" which finds reference in the Holy Bible which isa revelation of God".

*Search on Google as creation of God Particle practical Result (2019): Sep 7, 2016 - Shaping the Future of Digital Economy and New Value Creation · Shaping the Future of ... general view of the Large Hadron Collider (LHC) experiment during a media visit at ... The Higgs Boson isn't the God particle explained that

this had attracted the interest of the corporate world, with mixed results:

*Google Search as Judaism: Jan 5, 2018 - Judaism is the world's oldest monotheistic religion, dating back nearly 4,000 years. Followers of Judaism believe in one God who revealed himself through ancient prophets. The history of Judaism is essential to understanding the Jewish faith, which has a rich heritage of law, culture and tradition.

Search on Google as Bahai (1892)

* In the middle of the 19th century, Bahá'u'lláh (12 November 1817 – 29 May 1892) was a Persian religious leader, and the Jináb-i-Fádíl- Mazandaran God summoned Bahá'u'lláh—meaning the “Glory of God”—to deliver a new Revelation to humanity. For four decades thousands ..

*Search on Google as Sikh (2018) : The word 'Sikh' in the Punjabi language means 'disciple', Sikhs are the disciples of God who follow the writings and teachings of the Ten Sikh Gurus. The word 'Sikh' in the Punjabi language means 'disciple', Sikhs are the disciples of God who follow the writings and teachings of the Ten Sikh Gurus. Aug 9, 2018 - He believed that a single divine force created the entire world and resided within it. In his belief, God was not separate from the world and ..

*Search on Google as Zoroastrian: Aug 9, 2018 - He believed that a single divine force created the entire world and resided within it. In his belief, God was not separate from the world and Judaism is the parent of both Christianity and Islam. It proclaims that there is only one God, whose name is Yahweh, and He is the creator and ruler of the universe.

*Google search results on law of conservation (2020): shows that “The hypothesis of energy conservation was publicly announced in different forms by four widely scattered European scientists, Julius Lothar Mayer (1830- 1895), James Prescott Joule (1818,1889), Ludvig August Colding (1815-1888), and Hermann Ludwig von Helmholtz (1821- 1894), all but the last working in complete ignorance

8.0 “Modified Law of Conservation”

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ISSN: 2574 -1241 DOI: 10.26717/BJSTR.2023.53.008442
ARTICLE INFO

Received: October 16, 2023

Published: November 10, 2023

Citation: Shivshankar K Chopkar, Rajesh Iyengar and DK
Chakarbarty. Modified Law of Conservation. Biomed J Sci
& Tech Res 53(4)-2023. BJSTR. MS.ID.008442.

ABSTRACT

The old Law of conservation defines that “Energy is neither created nor destroyed” (Universal Law). But the modified Law of conservation expresses that “Energy is created at a certain point and is destroyed up to the certain limit. In between creation and Destruction, we can see ‘conservation’ which means one energy gets converted into another energy”. The energy is created/generated in the universe. God’s power means, G-Generation, O-Operation, and D-Destruction. These true facts of God’s power are described in the paper as a ‘gift of God’. American countries and China’s scientists make Artificial Sun. These Artificial Sun has transformed into a monumental

creation that's fast reshaping the future of energy and how we perceive human (Ref: Google Search, 02-Aug-2023). We well known that just now, scientists have proved practically and scientifically as they create artificial Sun in Laboratory, for extra energy create by artificial Sun, which is used in future as power...Chinese Scientists Launched Artificial Sun to Prove

..YouTube - <https://www.youtube.com> > watch,(02-Aug-2023).As per above discussions, in our mind one question, who was responsible for creation of Universe in first initial stage... ? who was starts Universe in old initial stage Some body is responsible No doubtful! Ans. God's power was only responsible starts / creation of Universe.....! GOD's means! G-Generations! O- Operations! D-Destructions. Thus, energy is created/generated by God's power. New modified Law of conservation expresses that "Energy is created at a certain point and is destroyed up to the certain limit. 10

In between creation and Destruction, we can see 'conservation' which means one energy gets converted into another energy". It's true facts

`....!

Keywords: Law of Conservation; Energy Creation; Energy Conservation; Energy Destruction; God's Power; Supreme God's Power

Introduction

The new Law of conservation says that "Energy is created at a certain point and is destroyed up to a certain limit. In between creation and Destruction, we find 'conservation', which means one energy is converted into another energy. This energy is

created/generated by God's power. God's power means G-Generation, O-Operation, D-Destruction. These true facts of God's power are described in the paper as the 'Gift of God' (SK Chopkar [1]). The old law of conservation is a universal law that has been accepted but not proven beyond doubt. IRRA scientists had a detailed study about the "Law of conservation of energy". But it is a fact that energy gets transformed to another energy. In this paper, IRRA Scientists try to prove with practical evidence that energy is created at a certain point and gets destroyed up to a certain limit. In between creation and Destruction, however, we can see 'conservation' which means one energy converts into another form. First, we can discuss the energy of the Sun. The Sun is the main star in the Universe which has been around for millions of years. Energy from the Sun keeps coming out for billions of years, producing watts of energy on the surface of the Sun per second. The Sun emits 3.8×10^{33} ergs/sec or 3.8×10^{26} watts of power...or each second, an amount of energy equals 3.8×10^{26} joules. In one hour or 3600 seconds, it produces 1.4×10^{31} Joules of energy or 3.8×10^{23} kilo- watt-hours. The sun releases energy at a mass–energy conversion rate of 4.26 million metric tons per second, which produces the equivalent of 384.6 septillion watts (3.846×10^{26} W). (14-Dec-2015, Google search). Fusing four free protons (hydrogen nuclei) into a single alpha particle (helium nucleus) release around 0.7% of the fused mass as energy. Hence, the Sun releases energy at the mass– energy conversion rate of

4.26 million metric tons per second (which requires 600 metric megatons of hydrogen), for 384.6 lotto watts 11

The Ideology of Science for Creation

Law of conservation of energy in science states "Energy can

neither be created nor destroyed” [Law of conservation [2]], the said law can be counter-argued as follows:

The law of conservation of energy states that energy can neither be created nor destroyed - only converted from one form of energy to another. This means that a system always has the same amount of energy unless it's added from the outside. (Google search, 2020). Ex. - If Q is the supply of energy, then $Q+Q$'s energy is created as per Fusions, which means Q 's energy is created on the Sun's surface by Fusion's reactions. As per knowledge Scenery is not added from the outside on the sun's surface, it's created on the sun's surface. (As per the Law of conservation “This means that a system always has the same amount of energy unless it's added from the outside). It creates energy on the sun's surface.

The sun releases energy at a mass–energy conversion rate of 4.26 million metric tons per second, which produces the equivalent of

384.6 septillion watts (3.846×10^{26} W). (14-Dec-2015, Google search). Fusing four free protons (hydrogen nuclei) into a single alpha particle (helium nucleus) release around 0.7% of the fused mass as energy, so the Sun releases energy at the mass–energy conversion rate of 4.26 million metric tons per second (which requires 600 metric megatons of hydrogen), for 384.6 lotto watts. The total solar energy per second on a surface perpendicular to the Sun is about 1350 Joules per square meter or about 0.275 watt-hours. (04-Feb-2017, Google search). The fusion reaction on the surface of the Sun promotes creation/generation along with lots of energy. From the surface of the Sun there is intense energy output but no input from

outside. Mean energy (1350 Joules per square meter) is created/generated on the Sun surface by Fusion in hydrogen nuclei and helium nucleus reactions which is a proven fact (Google Search). But nobody has practically measured this phenomenon on the surface of the Sun.

Ref: Law of conservation, [2]: Search on Google results on: This means that a system always has the same amount of energy, unless it's added from the outside. (Ref; PR Motak [3,4]). In our daily life, the human birth is its best example for creations/generations of energy American countries and China's scientists make Artificial Sun. These Artificial Sun has transformed into a monumental creation that's fast reshaping the future of energy and how we perceive human 12

(Ref: Google Search, 02-Aug-2023) *We are well aware by now that scientists have proved practically and scientifically as they create artificial Sun in Laboratory, for extra energy create by artificial Sun, which is used in future as power...Chinese Scientists Launched Artificial Sun To Prove ..YouTube - <https://www.youtube.com/watch,02-Aug-2023>) As per above discussion, it's clear that's, energy creates at certain point

The Ideology of Science for Destruction Sun rays that come out of the Sun's surface consist of light energy and heat energy. This phenomenon is going on continuously for billions of years and Scientists say this will go on in the future as well. Light travels at a speed of 2, 99,792 Km per second, which means nearly 3 lakh kilometers per second. The fact is who has measured/observed the sun rays continuously traveling? There are no practical results or evidence for the sun rays traveling continuously. As per our knowledge, the sun's rays get destroyed while traveling, which ultimately means energy gets destroyed.

Einstein's theory of relativity says that we cannot achieve a velocity greater than the velocity of light. Scientists experimentally tried to achieve a velocity greater than the velocity of light but with no success. According to Hindu philosophy, there are mentions as Utpatti, Sanchalan, and Nirvan means (Generation, Operation, and Destruction). According to Adhayatm Guru Shrimad Bhagawat Gita [5], God is instrumental in Generation, Operation, and Destruction in the whole Universe. SPH Scientists (Sachidanadan Pandurang Hari Om Research Association, India) says that only and only God's Power is responsible for creation/generation of Universe. Now, we talk a little about Destruction. In Hindu philosophy, there is a clear mention of four Yugs (Yug means a period of time) as Sat Yuga Treta Yuga Dwapar Yuga Kali Yuga but there is no mention of any Yuga after the 4th Yuga. Kali Yuga means "Pralay" /destruction of the Universe. [Shri Lord Krishna, "Shrimad Bhagawat Geeta" in Dwapar Yuga, Translated by Shri Pandrinath Thaware [5]]. 13

The Ideology of Science for in Between Creation and Destruction there are Conservation New Law of conservation postulates that "Energy is created at a certain point and energy destroyed up to a certain limit and in between creation and Destruction, conversion of energy to another form takes place [6-10]. Thus, energy is created/generated by God's power. God's power means G- Generation, O-Operation, D-Destruction.

DISCUSSION

As per above discussions, in our mind one question, who was responsible for creation of Universe in first initial stage ? who was starts Universe in old initial stage? Some body is responsible? No doubtful! Ans. God's power was only

responsible starts/Creation of Universe.....! GOD's means! G-Generations! O- Operations! D-Destructions! Thus, energy is created/generated by God's power. God's power means G-Generation, O-Operation, D-Destruction. New modified Law of conservation expresses that "Energy is created at a certain point and is destroyed up to the certain limit. In between creation and Destruction, we can see 'conservation' which means one energy gets converted into another energy". It's true facts!

CONCLUSION

From the above discussion, it can be concluded that the new "Law of conservation" pronounces that the power of God means G- Generation, O-Operation, and D-Destruction. Who else could be responsible for creating each and every thing in the entire Universe? It is the power of the Supreme God under whose clutches the whole world and its order rests.

ACKNOWLEDGEMENT

Prof. D.K. Chakrabarty (Ex. Senior Scientist from PRL Ahmadabad, Gujarat, India) has shared his knowledge for editing original manuscript writing, & guideline with the suggestion. We express our sincere thanks to several scientists as Dr. K.R. Gangakhedkar, P.N. College, Nanded. Ex. Dr. Mrs. Sumanlatha Pandey their valuable suggestions and editing original manuscript and Mrs. Vinaya Dabir, Doctor colony, Sevagram, Maharashtra, India. 14

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POWER ALWAYS EXIST IN THE UNIVERSE, ACTIVE AS SOUL IN HUMAN BEING BODY”.

Law of conservation (2020) Search on Google results on: The law of conservation of energy states that energy can neither be created nor destroyed - only converted from one form of energy to another. This means that a system always has the same amount of energy, unless its added from the outside.

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Shri Lord Krishna, “Shrimad Bhagawat Gita” in Dwapar Yug, Translated by Shri Pandrinath Thaware (1678), Publication by Gitapress, Gorakhpur-273005, website: www.gitapress.org. Search on Google website (2017): God power what’s in body as Soul that’s in Universe as Supreme God Power!” (Pindit Tech Brahmandi), Supreme power of God’s is the creator of everything in the Universe.

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He believed that a single divine force created the entire world and resided within it. In his belief, God was not separate from the world.

Judaism Religions (2018)

Search on Google as Judaism Religions is the world’s oldest monotheistic religion, dating back nearly 4,000 years. Followers of Judaism believe in one God who revealed himself through ancient prophets.

Zoroastrian (2018) Search on Google as: He believed that a single divine force created the entire world and resided within it. In his belief, God was not separate from the world and Judaism is the parent of both Christianity and Islam. It proclaims that there is only one God, whose name is Yahweh, and He is the creator and ruler of the universe.

TRUE FACTS PRACTICALLY PROVN

This energy is created/generated by God’s power. God’s power means, G-Generation, O-Operation, and D-Destruction. These true facts of God’s power are described in the paper which is published in international journal. Supreme god power always exists in the universe, active as soul in human being body (may 08, 2021). Available at

SSRN: <https://ssrn.com/abstract=3953237> or
<http://dx.doi.org/10.2139/ssrn.3953237>. (Google search)

IRRA Scientists described in the paper, energy is

created/generated by God's power. New modified Law of conservation expresses that "Energy is created at a certain point and is destroyed up to the certain limit. In between creation and Destruction, we can see 'conservation' which means one energy gets converted into another energy". It's true facts ...Now, practically proven in laboratory by American and China scientist(02-Aug-2023).

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ISSN: 2574-1241

DOI: 10.26717/BJSTR.2023.53.008442

Shivshankar K Chopkar. Biomed J Sci & Tech Res

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9.0 “New Law of conservation”

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ABSTRACT:

The old Law of conservation defines that “Energy is neither created nor destroyed” (Universal Law). But the modified Law of conservation expresses that “Energy is created at a certain point and is destroyed up to the certain limit. In between creation and Destruction, we can see ‘conservation’ which means one energy gets converted into another energy”.

The energy is created/generated in the universe. God’s power means, G-Generation, O-Operation, and D-Destruction. These true facts of God’s power are described in the paper as a ‘gift of God’.

American countries and China's scientists make Artificial Sun. These Artificial Sun has transformed into a monumental creation that's fast reshaping the future of energy and how we perceive human (Ref: Google Search, 02-Aug-2023)

*We well known that just now, scientists have proved practically and scientifically as they create artificial Sun in Laboratory, for extra energy is created by artificial Sun, which is used in future as power...Chinese Scientists Launched Artificial

S u n T o P r o v e . . Y o u T u b e - [https://www.youtube.com › watch,\(02-Aug-2023\).](https://www.youtube.com › watch,(02-Aug-2023).)

As per above discussions, in our mind one question, arises who was responsible for creation of Universe in first initial stage ? who was starts Universe in old initial stage? Some body is responsible? No doughty! Ans. God's power was only responsible starts /creation of Universe.....! GOD's means!.....G-Generations! O- Operations! D- Destructions!.....

Thus, energy is created/generated by God's power. New modified Law of conservation expresses that "Energy is created at a certain point and is destroyed up to the certain limit. In between creation and Destruction, we can see 'conservation' which means one energy gets converted into another energy". It's true facts!

KEYWORDS: Law of Conservation, Energy creation, Energy conservation, Energy Destruction, God's power, Supreme God's power.

Introduction:

The new Law of conservation says that "Energy is created at a certain point and is destroyed up to a certain limit. In between creation and Destruction, we find 'conservation', which means one energy is converted into another energy.

This energy is created/generated by God's power. God's power means G- Generation, O-Operation, D-Destruction. These true facts of God's power are described in the paper as the 'Gift of God' (S.K. Chopkar, 2020).

The old law of conservation is a universal law that has been accepted but not proven beyond doubt. IRRAScientists had a

detailed study about the “Law of conservation of energy”. But it is a fact that energy gets transformed to another energy?

In this paper, IRRA Scientists try to prove with practical evidence that energy is created at a certain point and gets destroyed up to a certain limit. In between creation and Destruction, however, we can see ‘conservation’ which means one energy converts into another form.

First, we can discuss the energy of the Sun. The Sun is the main star in the Universe which has been around for millions of years. Energy from the Sun keeps coming out for billions of years, producing watts of energy on the surface of the Sun per second.

The Sun emits 3.8×10^{33} ergs/sec or 3.8×10^{26} watts of power...or each second, an amount of energy equals 3.8×10^{26} joules. In one hour or 3600 seconds, it produces 1.4×10^{31} Joules of energy or 3.8×10^{23} kilowatt-hours.

The sun releases energy at a mass–energy conversion rate of 4.26 million metric tons per second, which produces the equivalent of 384.6 septillion watts (3.846×10^{26} W). (14-Dec-2015, Google search).

Fusing four free protons (hydrogen nuclei) into a single alpha particle (helium nucleus) release around 0.7% of the fused mass as energy. Hence, the Sun releases energy at the mass–energy conversion rate of 4.26 million metric tons per second (which requires 600 metric megatons of hydrogen), for 384.6 lotto watts.

The Ideology of Science for creation:

Law of conservation of energy in science states “Energy can neither be created nor destroyed” [Law of conservation (2020)],

the said law can be counter-argued as follows:

The law of conservation of energy states that energy can neither be created nor destroyed - only converted from one form of energy to another. This means that a system always has the same amount of energy unless it's added from the outside. (Google search, 2020).

Ex. - If Q is the supply of energy, then Q+Q's energy is created as per Fusions, which means Q's energy is created on the Sun's surface by Fusion's reactions. As per knowledge, Q's energy is not added from the outside source on the sun's surface, it's created on the sun's surface. (As per the Law of conservation "This means that a system always has the same amount of energy unless it's added from the outside source). It creates energy on the sun's surface.

The sun releases energy at a mass–energy conversion rate of 4.26 million metric tons per second, which produces the equivalent of 384.6 septillion watts (3.846×10^{26} W). (14-Dec-2015, Google search).

Fusing four free protons (hydrogen nuclei) into a single alpha particle (helium nucleus) release around 0.7% of the fused mass as energy, so the Sun releases energy at the mass–energy conversion rate of 4.26 million metric tons per second (which requires 600 metric megatons of hydrogen), for 384.6 lotto watts.

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As per above discussion, it's clear that's, energy is created at certain point

3.0 The Ideology of Science for Distraction:

Sun rays that come out of the Sun's surface consist of light energy and heat energy. This phenomenon is going on

continuously for billions of years and Scientists say this will go on in the future as well. Light travels at a speed of 2, 99,792 Km per second, which means nearly 3 lakh kilometers per second. The fact is who has measured/observed the sun rays are continuously traveling? There are no practical results or evidence for the sun rays traveling continuously. As per our knowledge, the sun's rays get destroyed while traveling, which ultimately means energy gets destroyed.

Einstein's theory of relativity says that we cannot achieve a velocity greater than the velocity of light. Scientists experimentally tried to achieve a velocity greater than the velocity of light but with no success. According to Hindu philosophy, there are mentions as Utpatti, Sanchalan, and Nirvan means (Generation, Operation, and Destruction)

According to Adhayatm Guru [Shrimad Bhagawat Gita (2017)], God is instrumental in Generation, Operation, and Destruction in the whole Universe. SPH Scientists (Sachidanand Pandurang Hari Om Research Association, India) says that only and only God's Power is responsible for creation/generation of Universe.

Now, we talk a little about Destruction. In Hindu philosophy, there is a clear mention of four Yugs (Yug means a period of time) as

1) Sat Yuga 2) Treta Yuga 3) Dwapar Yuga and 4) Kali Yuga, but there is no mention of any Yuga after the 4th Yuga. Kali Yuga means "Pralay"

Destruction of the Universe. [Shri Lord Krishna, "Shrimad Bhagawat Geeta" in Dwapar Yuga, Translated by Shri Pandrinath Thaware (1678)].

The Ideology of Science for in between creation and Destruction

there are conservation:

New Law of conservation postulates that “Energy is created at a certain point and energy destroyed up to a certain limit and in between creation and Destruction, conversion of energy to another form takes place. Thus, energy is created/generated by God’s power. God’s power means G- Generation, O-Operation, D- Destruction.

DISCUSSION:

As per above discussions, in our mind one question, arises that who was responsible for creation of Universe in first initial stage.....? who was to start Universe in old initial stage? Some body is responsible? No doughty! Ans. God’s power was only responsible starts /creation of Universe.....! GOD’s means!.....G-Generations! O- Operations! D- Destructions!.....

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Thus, energy is created/generated by God’s power. God’s power means G- Generation, O-Operation, D-Destruction.

New modified Law of conservation expresses that “Energy is created at a certain point and is destroyed up to the certain limit. In between creation and Destruction, we can see ‘conservation’ which means one energy gets converted into another energy”. It’s true facts!

CONCLUSION:

From the above discussion, it can be concluded that the new “Law of conservation” pronounces that the power of God means G- Generation, O-Operation, and D-Destruction. Who else could be responsible for creating each and every thing in the entire Universe? It is the power of the Supreme God under whose

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P. R. M o t a k , N.R. BAIG, FIST EDITION 2019, Elements of thermal and statistical Physics, SAI JYOTI PUBLICATION, PAGE NO.30 TO 31. HALLIDAY, PROBEETRESNICKAND, JEAN WALKER, Extended

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Zoroastrian (2018): - Search on Google as: He believed that a single divine force created the entire world and resided within it.

In his belief, God was not separate from the world and ... Judaism is the parent of both Christianity and Islam. It proclaims that there is only one God, whose name is Yahweh, and He is the creator and ruler of the universe. By; IRRA Scientists Group, India.

“Sachidanand Pandurang HriOm”

10.0 God power what's in body as Soul that's in Universe as Supreme God Power!

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ABSTRACT-

In universe, God Power makes creations, operations and Destructions, everything functions in Universe is by God power. Supreme God power is very important in the Universe, which he made and created means G- Generations, also O-Operations/ Organizations, and D-Distractions of everything in Universe by Supreme God Power. We can't make or create God particles, it is truth. Still Scientist try to make God particles by practically experiment and they failed. They create charge particle. The whole Universe is controlled by SUPREME GOD POWER. But Science fails to recognize this supreme God power, which always exists in the whole Universe. It is an ultimate truth. The Supreme God power exists in each and every soul of the Universe.

Keywords: Soul, Supreme God Power, Universe, law of conservation, Human body, Science, Spiritual power.

INTRODUCTION-

We know well that our human body is made up of five principles ex.- sky, wind, water, earth, and fire. These five principles that

constitute our human body in solid form (Sagune rupi Deh) culminate into a human body. In this human body God power is present in form of soul power and then only activities of the body ex, -walking, eating, speaking, and breathing etc. happens.

When the soul is present in human body, the body does all the activities. But when human being dies, the soul disappears from the body. No sooner it leaves the human body the physical activities get stunted. But do you know why it does not work? Our eyes, hands, mouth and each and every part of human body is very much there, but still the body does not work without the soul? Why? Soul is very vital for human body since it helps human body to work, eat, speak, walk...etc. This is the same power which works in the Universe system which in other words could be called the Supreme God Power.

This is a solemn effort to deliberate about the soul which is present in human body. When the soul is present in human body the body does all the activities but when human being dies, the soul goes away and disappears from the body. The moment it leaves the human self then the physical activities stop abruptly. But do you know why it does not work? Physical attributes of human body is there, still the body does not work without the soul? Why? Soul is very vital for human body since it helps human body to function. This is the same power which works in the Universe system which in other words could be called the Supreme God Power, Search on Google about Christianity, Bible (2019).

TRUTH OF SUPREME GOD POWER: -

All planets are working in proper fashion by only SUPREME GOD POWER. The whole Universe is controlled by one

SUPREME GOD POWER, each & every planet in universe is made and created by supreme God Power. Also, all human beings born in universe are created by one SUPREME GOD POWER. But Science fails to recognize this supreme God power, which always exists in the whole Universe. It is an ultimate truth. The Supreme God power exists in each and every soul of the Universe. Google Search as Judaism (2018).

PROPERTIES OF GOD POWER: -

We can't see this supreme power of God with naked eyes. Because the power of God is without shape, length, width, volume, etc. God is "Nirgun", and "Nirvikar" as per Adhayatm Guru, Shrimad Bhagawat Gita (2017). Along with the Universe, the supreme power of God has created us. If Science reposes faith on this Supreme power of God, then things could work out in better direction.

GOD POWER FUNCTION: -

Our Soul is the power of God and this power is present in our body. Our body activities such as eating, walking, working etc are the result of our soul, but when the soul, which means power of God disappears from our body, our body will be there for sure, our eyes will be there, all things will be there, but it can't be termed as working. Why? Can Science answer this question? Who runs this system? Power of God is important. But our question is why the power of soul could be not measured by science? Quran (2018).

5.0 Science can't prove the existence of God nor could it create God power practically: -

As per our knowledge, we cannot create God particles since the

power of God already exists in the whole Universe. That's called Supreme 'Power of God'. In fact, we are made by the God, so we can't make God or God particles. It's a universal truth. But some scientists are in pursuit of producing God particles, with no success as yet. Search on Google as creation of God Particle practical Result (2019).

The supreme Power of God is present within our soul and also present inside all human beings and animals, birds and other creatures too. It is the power of the soul within us that makes us eat, work, speak, walk etc. But after our death, when the soul departs, we can't do the same things. This power of soul means Power of God, which cannot be practically measured by science. This soul is nothing but power of God which is very important. Similarly, in the Universe, Supreme power of God is very essential. It is this power which maintains planetary position in the Universe. A soul constitutes power of God within the human frame of body which functions in the Universe, Search on Google as Sikh (2018).

This theory is a fact without a shroud of doubt. Supreme power of God pervades the whole Universe i.e., Moon, Earth, Jupiter etc. too. We can't see this supreme power of God with naked eyes. Because the power of God is without shape, length, width, volume, etc. God is "Nirgun", and "Nirvikar" as per Adhayatm Guru, Shrimad Bhagawat Gita (2017). Along with the Universe, the supreme power of God has created us. If Science reposes faith on this Supreme power of God, then things could work out in better direction.

6.0 SUPREME GOD POWER CREATION AND DESTRUCTIONS IN THE UNIVERSE: -

We know that according to the old law of conservation- 'energy is neither created, nor destroyed', Google search results on law of conservation (2020). Is there any scientific evidence to prove this Universal Law? If yes, how to prove it? But our knowledge, observation, research mind and research study, regarding the “New law of conservation” say that, energy can be created at a certain point, and energy can be destroyed up to certain limits too. In between creation and destruction, there are conservations; which means, energy gets converted into another form. It is a universal truth wherever there is a creation there is destruction.

Take a practical observation related to our real-world i.e. the Sun, our prime energy source. It's a well-known fact that Sun shines every day and it will do so for eons together. We can see that lot of energy is generated from the Sun's surface per minute as light energy and heat energy, but still the volume of Sun remains unchanged till now. How it is possible? This means that energy is created on Sun's surface as fusion reactions. Whatever it may be, energy is created there. Now, it's a proven fact that energy is created on the surface of Sun.

Now, we will discuss about the sun rays, which comes out from Sun's surface. Sun rays come out with light and heat energy. Light travels at a speed of 2, 99,792 kilometer per second; which means nearly three lakh kilometer per second. This phenomenon rolls on continuously for lakhs and crores of years and the Scientist say this will go on in future as well. The fact is, who has measured/observed the sun rays travelling? As per our knowledge, the sun rays gets destroyed while travelling, which

ultimately means ‘energy’ gets destroyed.

Now, it’s distinct and clear that the Supreme God power is important in the whole Universe which controls all activities in the Universe.

8.0 EFFECT OF COVID-19: -

We all know about the Covid pandemic which is affected the whole world. The disease had created wreaked havoc by killing numerous human beings. Who is responsible for creating Covid-19? Science could not tell us as to who is responsible and how is Covid-19 created in whole world at the same time. As per our knowledge, only and only SUPREME GOD POWER is accountable for this Covid-19.

9.0 HOW TO BECOME HAPPY IN LIFE: -

As per our experience which needs to be shared, we are in fact quite happy, But how? Because of our hearty faith on God Power. As the poem goes “No Problem” one can understand

“No Problem!”

**Each and every Where,
There are so many
Problems! But, No problem!
If you are passenger,
And God is driver!
Then, No problems!
In whole life,
Otherwise, there are,
So many, problems! in life.**

-Sachidanand Pandurang HriOm.

In your Life, you must repose your entire faith on God Power,

which keeps your problem-free for the entire life.

Our life is a journey and God is our driver. If God is our driver, then our life is without hardships. In his absence our life becomes a messy hell with countless problems. There is no place where there are no problems. But our life becomes easy if we treat ourselves as a passenger and the God as driver. Then, only our problems can subside. So, a deep prayer calling God to stay in our heart shall bring the necessary quietness and peace in our life with utmost satisfaction. If we call God from the bottom of our heart then our rudderless life attains a direction. God is supreme power in the Universe; we should have unquestionable faith in God. This solves your problems and makes your soul pure and unites you with the ultimate God power (Parmatma), Search on Google as Zoroastrian (2018)

10.0 CONCLUSION: -

From the above discussion it could be concluded that, God power as soul in human body is an important factor for all bodily functions. Similarly Supreme God Power in Universe is responsible for all activities as everything is the creation of God and every human being is the child the God. Supreme God power is the guiding force in the Universe. Shivshankar Kanhuji Chopkar, (2021).

11.0 ACKNOWLEDGEMENT: -

We express our sincere thanks to several friends of IRRA Scientist Group, Dr.D.K. Chakarbarty, Prof. A.P. Deshpande, Dr.K.R. Gangakhedkar. Kharate and SPH Group Avinash Parate, Vijay Khode, Abhay Choudhary for help at different stages of this work.

11.0 REFERENCES

1. **Shrimad Bhagwat Gita (2017):** is knowledge of the five basic truths, these five truths lead only to God. Supreme power of God is the creator of everything in the Universe.
2. **Quran (2018):** Quran is a revelation by the God to Prophet Hazrat Mohammad. In Quran, God is described as “Allah-O-Akbar” Allah means God is greater in the Universe.
3. **Search on Google about Christianity, Bible (2019) :** it can be found that “God is responsible for the creation of the Earth, world, and universe in human religion and mythology” which finds reference in the Holy Bible which is a revelation of God”.
4. **Search on Google as creation of God Particle practical Result (2019): Sep 7, 2016 -** Shaping the Future of Digital Economy and New Value Creation · Shaping the Future of ... general view of the Large Hadron Collider (LHC) experiment during a media visit at ... The Higgs Boson isn't the God particle explained that this had attracted the interest of the corporate world, with mixed results:
5. **Google Search as Judaism: Jan 5, 2018 -** Judaism is the world's oldest monotheistic religion, dating back nearly 4,000 years. Followers of Judaism believe in one God who revealed himself through ancient prophets. The history of Judaism is essential to understanding the Jewish faith, which has a rich heritage of law, culture and tradition.
6. **Search on Google as Bahai (1892):** In the middle of the 19th century, Bahá'u'lláh (12 November 1817 – 29 May 1892) was a Persian religious leader, and the ... Jináb-i-Fádíl-i-Mazandaran God summoned Bahá'u'lláh— meaning the

“Glory of God”—to deliver a new Revelation to humanity. For four decades thousands.

- 7. Search on Google as Sikh (2018) :** The word 'Sikh' in the Punjabi language means 'disciple', Sikhs are the disciples of God who follows the writings and teachings of the Ten Sikh Gurus. The word 'Sikh' in the Punjabi language means 'disciple', Sikhs are the disciples of God who follow the writings and teachings of the Ten Sikh Gurus. Aug 9, 2018 - He believed that a single divine force created the entire world and resided within it. In his belief, God was not separate from the world.
- 8. Search on Google as Zoroastrian:** Aug 9, 2018 - He believed that a single divine force created the entire world and resided within it. In his belief, God was not separate from the world and ... Judaism is the parent of both Christianity and Islam. It proclaims that there is only one God, whose name is Yahweh, and He is the creator and ruler of the universe.
- 9. Google search results on law of conservation (2020):** shows that “The hypothesis of energy conservation was publicly announced in different forms by four widely scattered European scientists, Julius Lothar Mayer (1830-1895), James Prescott Joule (1818,1889), Ludvig August Colding (1815-1888), and Hermann Ludwig von Helmholtz (1821-1894), all but the last working in complete ignorance.
- 10. Shivshankar Kanhuji Chopkar, (2021),** publish research paper in “International Journal of Humanities and Social Sciences” (IJHSS) ISSN (P): 2319–393X; ISSN (E): 2319–3948 Vol. 10, Issue 1, Jan–Jun. 2021; 99–104, as title “SUPREME GOD POWER ALWAYS EXIST IN THE UNIVERSE, ACTIVE AS SOUL IN HUM

PART- 3

RESEARCH ACTIVITIES AND ACHIEVEMENT ON RAINMAKING TECHNOLOGY BY IRRA SCIENTIST

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9.0 Certificate of AFAC, India



10.0 “Achievements by IRRA Scientist”



11.0 Photo with Dr.S.K. Chopkar & Sahara Scientists in International environment conference, Dakhala, Marocco.



12.0 Research Paper Presented in National and International Conference by IRRA Scientist Group, India. (Morocco International conference 27 & 28 Sept-2018)

“Novel technology for artificial rain making by laser system in a way of natural lightning phenomena”

CETIFICATE OF DAKHALA, MOROCCO INTERNATIONAL CONFERENCE: IIT, PUNE

Research paper “Novel Technology for Artificial Rainmaking by Laser system in a way of Natural Lightning Phenomena” presented in International Environment Conference @ Dakhla, Morocco country, sept.2018 by S. K. Chopkar, IRRA Scientist Group, India.

Certificate from Sahara Scientist Summit Dakhla, Morocco, Country

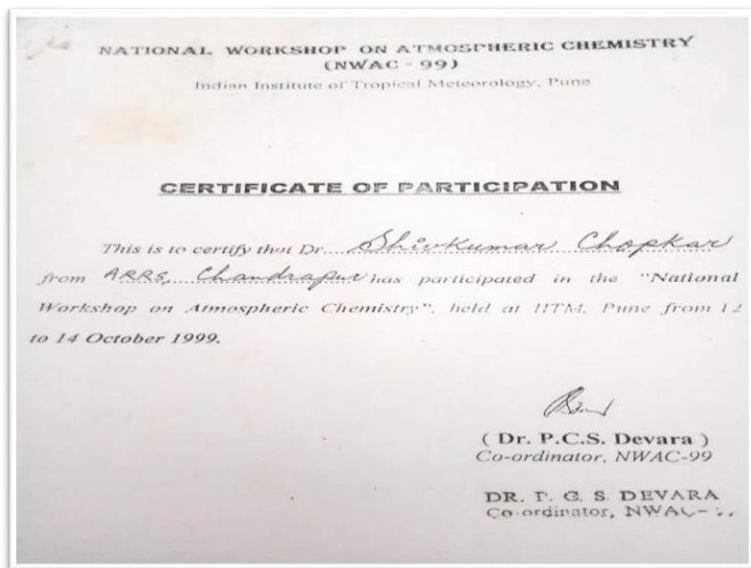


13.0 Indian Institute of Tropical Meteorology (IITM), PUNE

CONFERENCE ON ATMOSPHERIC CHEMISTRY:

Research Paper “Rainmaking Technology by Laser System Initiations Endothermic Reactions, condensations, Precipitations, Raindrops which act as natural seeding Process, Enhancing for Rainfall in the Atmosphere” Presented in National Workshop on Atmospheric Chemistry, Indian Institute of Tropical Meteorology, Pune, by S.K. Chopkar, IRRA Scientist Group, India.

CERTIFICATE FROM IITM, PUNE CONFERENCE ON ATMOSPHERIC CHEMISTRY



14.0 International Conference on Environment Chemistry, at Shri Venkatesh University, Tripathi by S.K. Chopkar, IRRA Scientist Group, India.

Research Paper “Rainmaking Technology by Laser System Initiations Endothermic Reactions, condensations, Precipitations, Raindrops which act as Natural seeding process, Enhancing for Rainfall in the Atmosphere” Presented in International Conference on Environment Chemistry, at Shri Venkatesh University, Tripathi by S.K. Chopkar, IRRA Scientist Group, India.

(Flow Chart for presentation in VENKETESH UNIVERSITY TRIPUTI CONFERENCE)

“Innovative Rainmaking Technology by Laser System initiating Endothermic Reactions similar to Natural Lightning Phenomena for Rainmaking in the Atmosphere”

14.1 : Flow Chart for Rainmaking Technology:

(Flow Chart)

“Innovative Rainmaking Technology by Laser System initiating Endothermic Reactions similar to Natural Lightning Phenomena for Rainmaking in the Atmosphere”

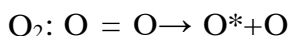


* We well know, after lightning, precipitation is formed any, heavy rainfall occurs. This Lightning phenomenon for Rainmaking is caused by

endothermic reactions as.....



Lightning creates high temperature, at high temperature, bonds of N_2 (74%) and O_2 (23%) break out into excited N^ and O^* as....,



Excited N^ and O^* are unstable, react with each other and NO and O_3 are formed.



* NO and O_3 formations are endothermic reactions. Heat energy required for these reactions is taken from the surrounding atmospheric clouds.



*As a result, these reactions will produce, temperature falls, and condensation takes place, which is basic need for rain drops formation, these rain drops act as natural seeding, rain is in analogous way similar to rains created in nature by lightning.



* Increase of O_3 and NO concentration after lightning has also been experimentally observed in the atmosphere.



* Natural lightning phenomena has been practically demonstrated in the laboratory cloud chamber by high power Laser shooting, as result “Laser-induced condensation & water drops formation “is observed.



* Process has been practically proved in the laboratory as “production of O_3 (Ozone) and NO (Nitrogen Oxides) by laser shooting in cloud chamber”.



* Laser photons photo-dissociate atmospheric compounds N_2 and O_2 and from O_3 and NO which are endothermic reactions, required lot of heat energy, absorbs from surrounding atmospheric clouds, condensation & precipitation formed enhance rain, in the atmosphere.



* Lightning phenomenon created through artificial lightning by laser system can produce rain in the atmosphere has been practically proved as “Laser-induced water condensation in air”.



***Scientists have succeeded in obtaining raindrops from an altitude of 75m of the atmosphere by terawatt mobile laser.**



***IRRA Scientist Group proposes laser system of specification of 10^{12} watt, 800nm, 500mJ, 120fs and 10Hz for this research project to create artificial lightning which initiates endothermic reactions, similar to Natural Lightning Phenomena for Rainmaking in the atmosphere.**



In Laboratory cloud chamber, formation of these tiny water drops particles are converted into rain drops by acceleration and turbulence due to wind force in nature and Rainmaking in the atmosphere.



***Innovative Rainmaking technology is practically proved and successfully experimented and is known as “Laser makes rain”.**



***Process is economical, harmless and eco-friendly and can be switched on and off by remote control from the ground. It is most useful for human beings particularly for farmers.**



***Please search on Google as “Rainmaking by Endothermic reactions “or visit our web site <http://www.irraindia.org>**



*Our aim is “Production of Rainmaking when and where required for bringing about a green revolution in the whole world for the humankind”.



*If our finding could be used to help scientists create new alternative method for Rainmaking, the resulting techniques could be of inestimable value.



Additional uses of Innovative Rainmaking Technology for rain drain in Dam catchment area.



Water & Food are the basic needs of all human beings as well as animals, trees, etc. which depends on rain; it is easily solved by artificial rain making.



A group of European scientists working on artificial rain said in 2010 “Firing extremely powerful laser pulses through humid air can stimulate the formation of clouds, according a team of European scientists. They say that the effectiveness of this method is much easier to gauge than traditional cloud- seeding techniques and that it could provide a practical means of triggering rainfall”. (Search on Google as Laser makes rain heavily 2010).

“Novel Rainmaking Technology scientifically & practically

proven in the atmosphere”

15.0 International Environment Conference, University of Calcutta- 700009, India by D.K. Chakrabarty, IRRA Scientist Group, India. Research Paper Presented “Femto-second Terawatt Laser system to produce Artificial Rain” in International Environment Conference, University of Calcutta-700009, India by D.K. Chakrabarty, IRRA Scientist Group, India.

16.0 : Mission, Vision, Objects:

IRRA Scientist Group, proposed “Novel technology for Rain Enhancement using high power Laser system initiation endothermic reactions.

“Laser-induced condensation & water drops formation” Process has been practically proved in the laboratory cloud’s chamber as “production of ozone and nitrogen oxides by laser”. O₃ & NO are endothermic reactions which responsible for condensation and water drops formation, these rain drops act as natural seeding, enhancing rain in a way of natural lighting phenomena. Our many research papers have been published in national and international Journals; also, Innovative Rainmaking Technology has been Patent file for national and international PCT publish. Our aim is “Green revolution in the whole world for all human being. This is God Gift for us. Search on Google as S.K. Chopkar or “Rainmaking by endothermic reactions” or website - <http://www.irraindia.org> you know more details about “Innovative Rainmaking Technology”, it’s scientifically & practically proved in Laboratory cloud’s chamber & as in the atmosphere.

“MISSION”

“Green Revolution in the whole world for all human being”

“Vision”

“Global Prosperity through Artificial Rainmaking”.

” Objectives”

“Novel technology for artificial rainmaking using high power Laser system in the atmospheric clouds initiation endothermic reactions, in a way of natural lightning phenomena”

“Well distribution of rainmaking all over” also rain drain in Dam area

17.0 Registration Certificate For IRRA



GOVERNMENT OF INDIA MINISTRY OF CORPORATE AFFAIRS

Central Registration Centre CERTIFICATE OF INCORPORATION [Pursuant to sub-section (2) of section 7 and sub-section (1) of section 8 of the Companies Act, 2013 (18 of 2013) and rule 18 of the Companies (Incorporation) Rules, 2014]

I hereby certify that INNOVATIVE RAINMAKING RESEARCH ASSOCIATION is incorporated on this Fifth day of February Two thousand twenty under the Companies Act, 2013 (18 of 2013) and that the company is limited by shares.

The Corporate Identity Number of the company is U73100MH2020NPL337195. The Permanent Account Number (PAN) of the company is AAFCI5742P

*The Tax Deduction and Collection Account Number (TAN) of the company is NGPI02173D

*Given under my hand at Manesar this Fifth day of February Two thousand twenty, (15/02/2020).

Digital Signature
Certificate Sd/-

M MOHAN ASST. REGISTRAR OF COMPANIES

For and on behalf of the Jurisdictional Registrar of Companies
Registrar of Companies Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the company on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required.

Registration status and other details of the company can be verified on www.mca.gov.in Mailing Address as per record available in Registrar of Companies office: INNOVATIVE RAINMAKING RESEARCH ASSOCIATION C/O VIJAY MADHUKARRAO KHODE, E K N A T H TEMPLE,
SUDAMPURI, WARDHA, Maharashtra, India, 442001



18.0 National &International Patent Award Certificate:

“National and International Patent Awarded

International Australian Government, IP Australia Certificate of
Grants Innovation Patent number: 2020101897 (2021).

Patent Certificate, The Patent Office, Government of India,
Patent No.: 538082, Application No.: 201721008920

*International Publication Patent No: -WO/2008/062441 (2007)
and Revised International Application No.PCT/IN2017/000105
(2017).

*Indian Patent Number: - 238000 (2007) and Revised Indian
Patent File Number 201721008920 (2017).

Patent Certificate, The Patent Office, Government of India

Patent No.: 538082, Application No.: 201721008920

 		पत्र सं. No. 922144429 
पेटेंट कार्यालय, भारत सरकार पेटेंट प्रमाण पत्र (पेटेंट निगमावली का नियम-74)		The Patent Office, Government Of India Patent Certificate (Rule 74 of The Patents Rules)
पेटेंट सं. / Patent No.	538082	
आवेदन सं. / Application No.	201721008920	
फाइल करने की तारीख / Date of Filing	15/03/2017	
पेटेन्टी / Patentee	Shivshanker Kanhuji Chopkar	
<p>प्रमाणित किया जाता है कि पेटेन्टी को उपरोक्त आवेदन में व्याख्याित ARTIFICIAL RAINMAKING BY HIGH POWER LASER INITIATION ENDOTHERMIC REACTIONS THROUGH DRONE AIRCRAFT REMOTE CONTROL SYSTEM नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार जल तारीख मार्च 2017 के पंद्रहवें दिन से बीस वर्ष की अवधि के लिए पेटेंट अनुमत किया गया है।</p> <p>It is hereby certified that a patent has been granted to the patentee for an invention entitled ARTIFICIAL RAINMAKING BY HIGH POWER LASER INITIATION ENDOTHERMIC REACTIONS THROUGH DRONE AIRCRAFT REMOTE CONTROL SYSTEM as disclosed in the above mentioned application for the term of 20 years from the 15th day of March 2017 in accordance with the provisions of the Patents Act, 1970.</p>		
		 कन्ट्रोलर ऑफ पेटेंट्स Controller of Patents
अनुमति की तारीख Date of Grant	15/05/2024	
टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाता है, मार्च 2019 के छठवें दिन को और उसके पचास प्रत्येक वर्ष में छठी दिन से लेनी होगी। Note - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 15 th day of March 2019 and on the same day in every year thereafter.		

**International Australian Government, IP Australia
Certificate of Grants Innovation Patent number:
2020101897 (2021).**



Australian Government
IP Australia

CERTIFICATE OF GRANT
INNOVATION PATENT

Patent number: 2020101897

The Commissioner of Patents has granted the above patent on 9 September 2020, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):
Shivshankar Kanhuji Chopkar of Artificial Rainmaking Research Society, 39, Santra Market Nagpur Maharashtra 440018 India

Title of invention:
ARTIFICIAL RAINMAKING BY HIGH POWER LASER INITIATION ENDOTHERMIC REACTIONS THROUGH DRONE AIRCRAFT REMOTE CONTROL SYSTEM

Name of inventor(s):
Chopkar, Shivshankar Kanhuji

Term of Patent:
Eight years from 19 August 2020

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.

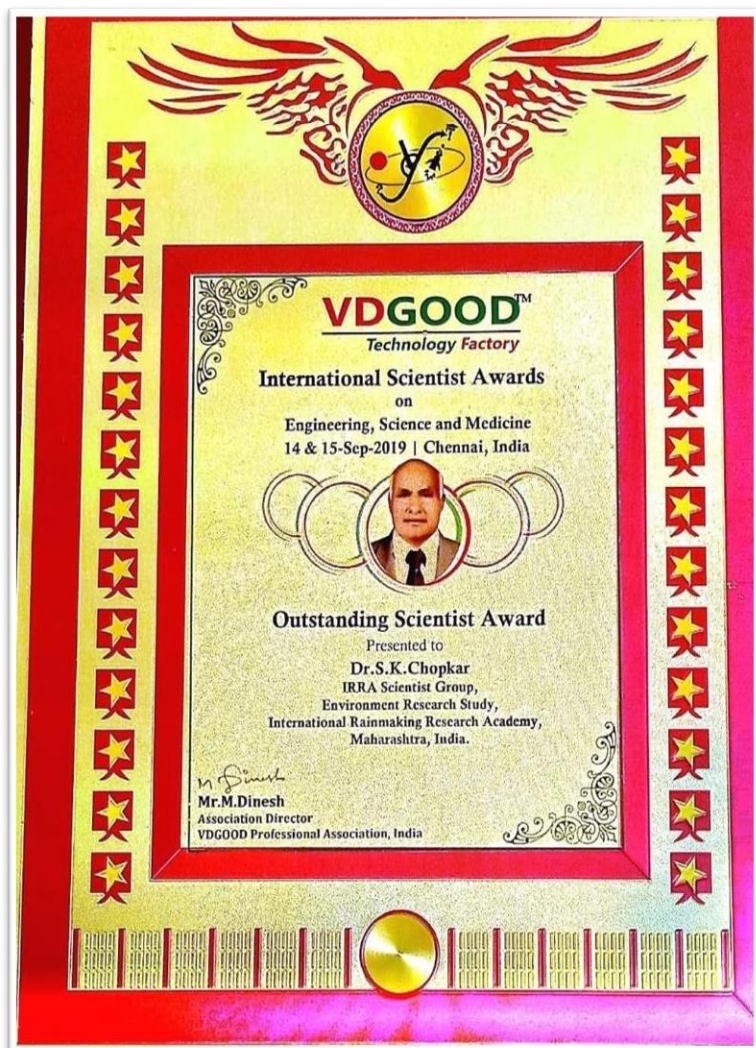


Dated this 9th day of September 2020
Commissioner of Patents

PATENTS ACT 1990
The Australian Patents Register is the official record and should be referred to for the full details pertaining to this IP Right.

This data, for application number 2020101897, is current as of 2021-12-30 21:00 AEST

19.0 International Scientists Award

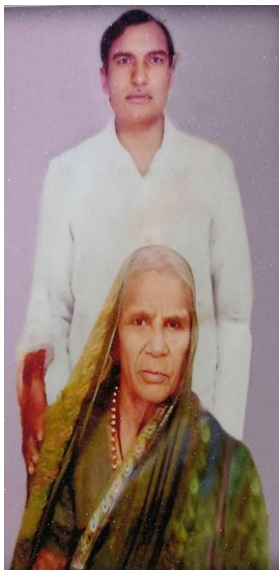


20.0 International Scientist Award Ceremony Program Photos:



21.0 “Beginning of A Research on Artificial Rain Based on Natural Process and Its Subsequent Achievement” By Goddess Sonai My Mother at An Early Age for The Welfare of All Living Beings:

This is a dream for bringing green revolution in the entire world. Let's make this dream come true. The work of bringing a green



revolution in the universe has been entrusted to us by God to make all living beings happy.

With a heartily thanks to the Almighty God, we will follow the footsteps of God and complete this project on artificial rain research based on natural process. This research shall also bring forth a technology which can halt excessive rains whenever there is a cloud burst. This means we can have rains as much as we need and wherever we want it to happen. God will carry out the work assigned to us. This happened somewhere during the early 70s. From the year 1972 to 1976, there was no rain for three to four consecutive years. Drinking water was not available. There was a huge shortage of food and water. People started going for labor work under the employment guarantee schemes. During the course of my Laboure work with my mother, I got a blister on my palm which broke out. One day when my mother had gone two kilometers to fetch

(1972) In my child life, my mother Smt. Sonai Chopkar gave me ‘Guru Mantra’ that

“If you do good to the world, it ultimately became your good”

मा सोनाई का गुरु मंत्र

“दुसरो के कल्याण में ही अपना कल्याण है”

drinking water, she left a tiffin containing red sorghum bread, onion and red chutney. I opened the tiffin and started eating the food items.

My mother later arrived and brought some water. When my mother saw me eating, she got infuriated. Seeing my sad face, she then asked me to eat and I rushed and started gulping the food. But my mother told me to wash my hands. I just washed the tips of my fingers and continued eating. My mother upbraided me for not washing my hands properly and poured the cold water from the well freshly brought by her. The blistered hand started hurting me like hell. I cried. My mother looked at my hand. The hand was sore. The skin was peeled off. There were tears in her eyes. My mother cursed God. In common parlance she cursed the God “Oh! You wretched God, you have no wisdom. Why don't you pour rains?” A thought started pressurizing my mind. If it had rained, why should I have to come for work? Mother burst into tears. I too started weeping. In the scorching sun with no shade of the trees I was standing there helpless. A lot of people came to work as if there was some village fair. We were eating chutney and bread under the blistering sun, under the shadow of an imaginary tree. Tears started rolling on my cheeks. A thought started forming in my mind. “Why didn't it rain? Why didn't it rain?” I was thinking a lot. There was no second thought in my mind. Drops of sweat were falling on the ground due to intense heat from my body. After finishing work, we went home. Even while returning home there was a huge commotion of thoughts in mind. Why didn't it rain? What does it need to make rain fall?

As usual, we came to the temple in the evening to pay obeisance to God. Now I had a resolution in my mind. I will have to

undertake lifelong research to make this dream come true. With Goddess Sonai's my mother blessing, the work on making this dream reality started working. It is still continuing. This thought has been instilled in our minds by Goddess Sonai my mother at an early age for the welfare of all living beings by providing artificial rain based on natural process. Secondly, it should rain whenever we need and wherever we want. No doubt it has become our "Guru Mantra" that 'if you do good to the world, it ultimately becomes your own good'. Fortunately, this Guru Mantra has reached its culmination by the grace of Sadguru Parmhanse Ramchandra Maharaj. The research work started from 1975. The first research paper was published as "Effect of endothermic reactions associated with lightning on atmospheric chemistry" in Indian Journal of Radio & Space Physics Vol. 22, April 1993, pp123- 131, under the aegis of Atmospheric Rainmaking Research Society, Chimur Dist. Chandrapur, registered under Maharashtra Government in 1998 as NGO. "Artificial rainmaking system in a way of natural phenomena" research paper was also published in "Indian Journal of Science and Technology", www.indjst.org, Vol.1No.6 (Nov.2008). IRRA Scientist Group also published research papers in national and international Journal as Fellow as stated below.

22.0 “Request for Help”

Now days, IRRA scientist group are struggling with funds for research activities. Your little help may be most useful for “Green revolution in the whole world for all human being”. Your co-operation is solicited. Innovative Rainmaking Research Association, Bank A/C (80G and 12A).

With best regards

Yours faithfully

IRRA Scientist

Group Bank

Account Details

1. Bank Name-CENTRAL BANK OF INDIA, MIDC
SEWAGRAM ROAD--

442102, Warud, Dist.-Wardha. (Maharashtra.), India.

Bank A/c Name: - Innovative Rainmaking Research
Association, (80G and 12A) Sewagram, Dhanvantri Nager-30,
Bank A/c No. 3806623156, IFSC Code No.: - CBIN0282189,
Bank A/C (80G and 12A).

2. Bank Name-CENTRAL BANK OF INDIA,
SEWAGRAM BRANCH--

442102, Warud, Dist.-Wardha. (Maharashtra.), India.

Bank A/c Name: - International Rainmaking Research Academy,
Sevagram, Dhanvantri Nager-30,

Bank A/c No. 3841144252, IFSC Code No.: - CBIN0280697

With best regards

BY - IRRA Scientist Group.

INNOVATIVE RAINMAKING RESEARCH ASSOCIATION
(80G and 12A)

*Shivshankar Kanhuji Chopkar

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irra.scientistgroup@gmail.com

Website -<http://www.irraindia.org>



Innovative Rainmaking Research Association, Bank A/C (80G
and 12A)

Authors

Demonstration for Innovative Rainmaking Technology for Artificial Rain in large scale by creating multiple artificial lightning by multiple high-power Laser which initiates endothermic reactions, similar as nature's lightning phenomenon, onboard Aircraft in the upper atmosphere”

S

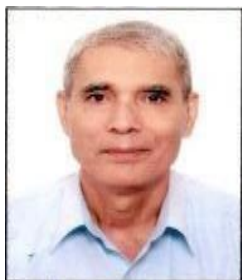


Fig. “Position of Laser system in Aircraft”

“IRRA Scientist Group propose laser system of specification: 10^{12} watt, 800nm, 500mJ, 120fs and 10Hz for this research project for demonstration with multiple Laser creates rain in large-scale on-board Aircraft in the atmosphere

Please visit our YouTube Channel and search "Novel Technology for Artificial Rainmaking". Click here: - <https://youtu.be/UYfuH9fAmUs>

More details can be found in Google Search: as “Artificial rainmaking by endothermic reactions” or S.K. Chopkar or on the website: <http://www.irraindia.org>



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Above are the two pillars member of our organization “Innovative Rainmaking Research Association (IRRA Scientists) India. We thank them on behalf of IRRA Scientists Group India for making such a wonderful platform to work on Innovative Rainmaking Technology used for Artificial rainmaking by Laser system which initiates endothermic reactions, similar as nature’s lightning phenomenon, onboard Aircraft in the atmosphere.

