

Effect of Bhaishajya Maha Yajna on Human Energy Field and Environment

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Abstract—Objective: Positive influence of Yajna (fire ceremony) on human physiological, psychological and spiritual well-being and environment is mentioned in ancient Indian literature. The purpose of this study is to explore how Bhaishajya Maha Yajna influences the human energy field measured with Electro Photonic Imaging (EPI) technique to follow the response at individual level and also to observe the pollution level in the environment before and after. **Methods:** Electro Photonic Imaging method was used to assess the subjects. The subjects were from Kerala practicing a special type of Yoga lead by an expert, some of whom were actively involved and others just observing Yajna. Bhaishajya Maha Yajna was performed in outskirts of Bangalore, continuously for 81 hours during two consecutive years 2013 and 2014. The participants were assessed three times; at fixed intervals of 27 hours from the base reading. After getting informed consent from the participants, 29 and 21 were the sample size respectively in the two years. EPI Measurements were made on all ten fingertips of subjects, the patterns of light emitted from the subjects' fingertips were digitally recorded and computer analyzed. Parameters including Area, Average Intensity and Entropy were calculated and statistically compared between three measurements. SPSS version 18.0 was used for the analysis. Pollution level was measured using Enviro-Tech, a standard environmental test equipment to observe the level of SO₂, NO₂ and RSPM. **Results:** Two times observations showed statistically significant positive changes in both years. Among three parameters Entropy was maintained constantly at a fixed level, while others (Area and Average Intensity) showed statistically significant changes in both years. In general, the changes between first and second measurements showed greater alterations than between second and third reading in EPI parameters. Forty three percent of reduction in Sulphur Dioxide was observed in the environment. **Conclusions:** Attending this Yajna influenced EPI parameters of finger emission patterns significantly and thus supported the objective of the study. EPI seems to be an appropriate tool to measure subtle energy field. Yajna can be one of the practices to invoke the potentials of human internal energy. The performance of Yajna helps in cleansing the environment of certain pollutants.

Key words: Yajna; EPI/GDV; human energy field; Offerings; Environment

I. INTRODUCTION

The scriptures of India pronounce that the goal of human existence is towards self-realization. This is also known as Moksha or release from our cyclic existence in this world. The attainment of Moksha is through several methods, one of them being the performance of Yajna. Yajna is performed in India for both one's own spiritual advancement and for the welfare of humanity. This practice has been followed from time immemorial [1].

Performance of Yajna involves offering Dravyas (sacred materials) into fire. At the initial level the offerings are of physical items followed by offering subtle facets of one's being which includes emotional and intellectual aspects symbolically into the fire. Bhagavad Gita [4. 24-31] enumerates different Yajnas; "Some offer hearing and other senses as sacrifice into the fire of restraint; others offer sound and other objects of sense into the fire of senses, some others again offer sacrifice with the functions of senses and those of the breath (vital energy), into the fire of Yoga of self-restraint, kindled by knowledge" [2].

Indian practices such as Yoga and Yajna bring stress levels to normal. Factors such as smoke coming out Yajna Kunda (sacred pit), correct method of chanting Veda Mantras, knowing the background concepts of tradition etc cause reduction in stress levels facilitating health maintenance at optimal level [3].

Objective observations, based on research and scientific evidences during experimental field studies found Yajna to be one of the most economical means of purifying environmental pollution. Emissions during Yajna are not only non-toxic but are beneficial to the environment. Agnihotra is a very simple method of performing Yajna or offering oblations to fire at the transitional moments of sunrise and sunset. Sunrise and sunset are the shortest rhythmic cycles of nature and they leave their immediate effect on living beings [4]. Ash collected from the bottom of the sacred pit showed mineral value and therefore this ash has been used in agriculture farms for healthy growth of plants [5].

To analyze the ash content after Agnihotra, the ash is mixed with water after 48-hour of conclusion of Agnihotra. It was found that Agnihotra-ash may increase the amount of extractable P in soil; this effect was also generated with a non-Agnihotra-ash, which was produced without chanting a mantra, and not necessarily at sunrise or sunset. There was particularly larger amount of P in soil when non-Agnihotra ash was produced in a copper pyramid. A possible explanation may be the time of soil / ash contact, which may have been too short in the two latter extraction methods to allow the subtle energetic forces to unfold their effects [6].

Agnihotra research at SVYASA University showed significant changes in seed germination parameters from the data during three seasons, autumn, winter and summer conducted for a period of 15 days each. Four parameters, viz. root length, shoot length, fresh weight and dry weight were measured of seed germination. An analysis of the data showed that the Agnihotra sacrifice with mantra was overwhelmingly more effective in the germination process than control conditions [7].

There are other studies that seem to measure emotional imprints in the environment by recording the changes in randomness of certain fundamental physical processes. One such instrument is known as Random Event Generator (REG) which records the randomness of electronic generation from a semi-conductor diode. The randomness changes towards more order when the system is exposed to increased-ordering in the environment. The reason for this may be due to positive emotions in the environment. Emotions are powerful thoughts according to Yoga. These powerful thoughts are cancelled when the waves associated are out of phase and the thoughts get into resonance when the phase and frequency are matched [8]. One of the studies could trace the significant changes between chanting of Gayatri Mantra and Random Thinking sessions. During Gayatri mantra chanting, REG show patterns that imply breaking of randomness in the surrounding environment when compared to Random Thinking session [9].

The cosmic biological and psychological effects influence significantly the biological and psychical, collective and individual organizational processes. The cosmic connections between Man and Universe do not represent a one-sided action, but a mutual, meaningful, life-giving interaction, in which Man is also an active participant if humankind accepts the challenge of fulfilling its original, natural destination [10]. Traditional cultural practices have much impact on the social condition and have a role in the healing process to large extent. These practices increase the functional intelligence of the species as discussed by Dr. Robert [11].

Music and other collective performances greatly influence the collective conscious level by bringing positive changes in the environment. With a suitable measurement method such as EPI, it is possible to observe the changes in the environment objectively [12].

It is very important to show evidences from *Puranas* (subordinate texts for understanding deeper Vedic concepts and ideas) and *Itihasas* (history of Indian culture and practice in particular) which exhibit numerous references for physical and meta-physical results due to rituals such as Yajna, Yoga, Mantra, Tantra etc. The present study pays attention to both individual and collective changes when Yajna is performed following specific method (especially herbal offerings) developed by a spiritual master from southern India.

II. MATERIALS AND METHODS

A. Sample for EPI

The subjects of interest for this study are members of a group led by a spiritual master from Kerala, southern India. These subjects are actively involved in the entire process of performing Bhaishajya Maha Yajna (BMY) by following certain practices: conducting brief Yajnas every month, collecting holy sticks for annual Yajna, collecting firewood, preparing necessary oils etc. These subjects (29 in 2013, 21 in 2014) have age ranging from 20 to 40 (males and females), who were ready to volunteer for the study. Subjects were asked to fill the consent form to acquaint them with entire procedure and make sure regarding volunteering for the study without any emotional disturbance. Majority (70%) of the subjects were from Kerala and some (10%) of them were from the neighboring villages, practicing specific Yoga Module framed by Rishidev Narendran Ji, and the rest (20%) of them were newly introduced to this group.

TABLE 1 – DETAILS OF SAMPLE SIZE OF YAJNA PARTICIPANTS

Year	Details	Sample Size	Age Range	Mean Age	Observers	Active Participants
2013	Males	26	15 - 45	34	1	25
	Females	3	36 - 40	38	0	3
	Total	29	15 - 45	34	1	28
2014	Males	8	19 - 40	36	0	8
	Females	13	18 - 41	27	0	13
	Total	29	18 - 41	30	0	21

The Electro Photonic Imaging (EPI, also known as Gas Discharge Visualization - GDV) measurement was taken three times from the baseline with fixed interval of 27 hours. This specific study is repeated two times in consecutive years Jan 2013 and Feb 2014. Both Yajnas started by 6.00 AM.

Bhaishajya Maha Yajna

	Pre -----	Assessment 1 -----	Assessment 2
	6.00 AM	(9.00 AM) after 27 hrs	(12.00 PM) 54 hrs
Year 2013	24.01.2013	25.01.2013	26.01.2013
Year 2014	21.02.2014	22.02.2014	23.02.2014

EPI was developed by Russian scientist, Dr. Konstantin Korotkov in 1996 to capture, map and analyze the electromagnetic field emanating from the human body in response to pulsed electrical field excitation. In response to the electrical stimulus given to the body (fingertip), a weak “electron cloud” forms near the surface (of the fingertip), and is amplified by excitation of the molecules in the surrounding air molecules resulting in a glow which is captured by an optical CCD camera system and translated into a digitized computer image.

Traditional Chinese Medicine recognizes that images of the whole body are found in each organ or region of the body. Systems of complementary medicine in the west term these phenomena ‘Reflexology’, and use them in systems of diagnosis and massage etc. [13]. The phenomenon of fingertip diagnosis in EPI is an example of reflexological diagnosis applied to the fingertips, using Pranic Energy Fields, which are the media through which reflexological maps arise.

EPI Test-retest reliability of baseline values have an overall variance of 0.236 and a standard deviation of 0.387. Variance in patterns of emission and calculated diagrams is about 10% for human fingers, and 3% for materials [14]; hence the instrument is of acceptable quality for research and has been used in various research investigations.

B. Samples for Enviro-Tech

Air samples were collected from the venue of Yajna performance, 50 meters away from Yajna Kunda (dimensions; 27 feet length and 18 feet width and 5 feet depth in elliptical shape). Collection of samples was performed before 24 hours of Yajna (from 23.01.2013, 6.00 AM to 24.01.2013, 6.00 AM) and after (from 27.01.2013, 3.00 PM to 28.01.2013, 3.00 PM).

Enviro-Tech is based on CSIR-NEERI technology and is the only PM 10 sampler that conforms to Indian standards (BIS 5182 (Part 23): 2006). Owing to its modular design, this model (APM 460 DXNL) can be easily paired with a gaseous sampling attachment (for monitoring SO₂, NO_x, NH₃, Ozone etc). It also monitors Respirable Suspended Particulate Matter (RSPM) concerning the health issues related to particle size in air of the surrounding area during respiration. Optimum level of RSPM differs from region to region within the country (Central Pollution Control Board, India).

II. INTERVENTION

Bhaishajya Maha Yajna is a ritual initiated by Rishidev Narendra Ji near Bommandahalli, Jigani, Bangalore. Two hundred and sixteen herbal Samits (holy sticks) were used which were collected yearlong according to a standard procedure. The Yajna continued for 4 days and 3 nights. There were 81 anti-social themes (such as accidents and violence) identified for nullifying during this Yajna. During each hour varieties of Samits were offered to counteract anti-social activities. Veda chanting from Rgveda and Yajurveda was continued throughout Yajna to create a spiritual ambience. Three types of base firewood were used. Nine types of plant based oils were offered. The name of Yajna itself is self-explanatory. Bhaishajya (Bhishak - medicine related) indicates the relation of the ritual for curative purpose at physical, pranic, psychological, social, intellectual and spiritual levels which may be personal, interpersonal and intrapersonal.

Procedure of Bhaishajya Maha Yajna

- Preparation for BMY will start one year prior to the Yajna
- On every full-moon-day the volunteers collect Samits (selected sacred sticks)
- Sacred fire (Agni) will be brought to the venue of Yajna
- By 6.30 AM on the day of start of Yajna, Agni will be installed in Agni Kunda
- Samits will be offered every hour for a total of 81 times
- Three types of base firewood will be used
- At fixed timings deities will be invoked to receive oblations

III. RESULTS

A. EPI parameters

TABLE 2 – CHANGES IN THE EPI PARAMETERS

Descriptive Statistics							
<i>Parameters</i>	<i>Time</i>	<i>6:00 AM</i>		<i>9:00 AM</i>		<i>12:00 PM</i>	
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Area	2013	10756.96	1490.40	9357.10*	1722.62	9848.75	2550.60
Intensity		75.26	6.50	69.18*	5.21	72.32*	6.91
Entropy		1.99	0.07	1.96	0.20	1.92	0.22
Area	2014	8707.24	901.19	9605.37*	751.68	9381.43	798.71
Intensity		85.66	6.37	90.25*	5.32	90.14*	5.39
Entropy		2.00	0.10	1.99	0.04	1.99	0.06

* P<0.05.

1) *Area* - A repeated measure of ANOVA showed, that for 29 people in 2013, the area (number of pixels in EPI images) of three measurements were statistically different, $F(2, 56) = 4.406$, $p = 0.017$, partial $\eta^2 = 0.136$. The post-hoc analysis for three measurements confirmed the statistical difference between first measurement (10756.96 ± 1490.40) and second measurement (9357.10 ± 1722.62) $p = 0.017$. However in 2014, for 21 people, $F(2, 40) = 7.977$, $p = 0.001$, partial $\eta^2 = 0.285$. Post-hoc analysis showed that first measurement (8707.24 ± 901.19) and second measurement (9605.37 ± 751.68) were statistically significantly different, $p = 0.001$, and first measurement (8707.24 ± 901.19) and third measurement (9381.43 ± 798.71) were also statistically significant, $p = 0.033$.

2) *Average intensity* - A repeated measure of ANOVA showed, for 29 people in 2013, the Average Intensity between three measurements were statistically different, $F(2, 56) = 10.571$, $p < 0.001$, partial $\eta^2 = 0.274$. The post-hoc analysis showed the statistical difference between first measure (75.26 ± 6.50) and second measure (69.18 ± 5.21), $p < 0.001$, and second measurement (69.18 ± 5.21) and third measure (72.32 ± 6.91), $p = 0.047$. For 21 people in 2014, a repeated measures of ANOVA showed significant difference, $F(2, 40) = 15.163$, $p < 0.001$, partial $\eta^2 = 0.431$. Post-hoc analysis showed significant difference between first measurement (85.66 ± 6.37) and second measurement (90.25 ± 5.32), $p < 0.001$, and first measurement (85.66 ± 6.37) and third measurement (90.14 ± 5.39), $p < 0.001$.

3) *Entropy* - A repeated measure of ANOVA did not show statistical difference, for 29 people in 2013, between three measurements, $F(2, 56) = 1.324$, $p = 0.274$, partial $\eta^2 = 0.045$. A repeated measure of ANOVA in 2014, also for 21 people, between three measures did not show statistical difference, $F(2, 40) = 0.262$, $p = 0.771$, partial $\eta^2 = 0.013$.

B. Enviro-Tech results

TABLE 3 - ENVIRO-TECH STANDARD VALUES AND EXPERIMENTAL VALUES

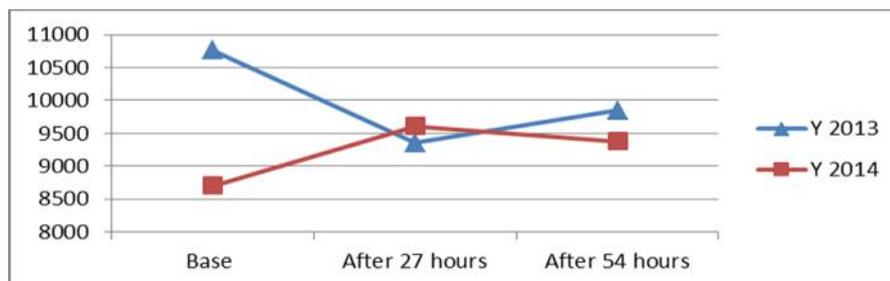
	Respirable Suspended Particulate Matter	Sulphur Dioxide	Nitrogen Dioxide
Standard Values	100 µg/m ³	80 µg/m ³	80 µg/m ³
Pre	66	53	37
Post	109	30	42
Change value	43	23	5
Percentage	65.15 % ↑	43.39 % ↓	13.51 % ↑

Table 3 gives standard values of Respirable Suspended Particulate Matter, Sulphur Dioxide and Nitrogen Dioxide along with pre-post Yajna values.

INTERPRETATION

1) *Area*: the number of pixels in the image having brightness above a pre-set threshold. It is observed that area shifts in diverse situations; ex – Yajna, Yoga, types of meditations. Increase in area is indicated by an increase number of pixels. In the two Yajna observations the data convey as follows.

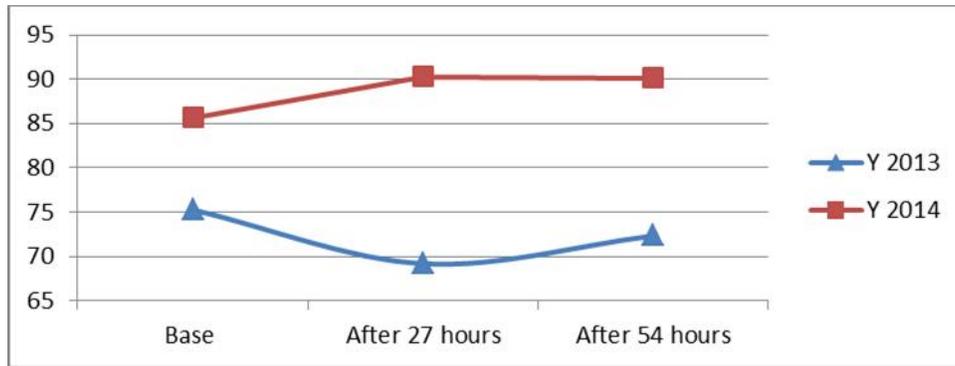
CHART 1 – LINE GRAPH OF AREA IN EPI DIAGRAM DURING MEASUREMENTS IN 2013 (LINE WITH BLUE TRIANGLES) AND IN 2014 (LINE WITH RED SQUARES).



In 2013 Yajna, it is observed a heightened initial start, a gradual decline and levelling as the Yajna progresses. Yajna of 2014 shows a lower start value compared to 2013, rapidly increasing and levelling as the Yajna progressed reaching similar value to 2013.

2) *Average Intensity* is an evaluation of the Intensity spectrum for the pixels in the images indicating electro-photon discharges. We can observe average intensity shifts in diverse conditions: ex – Yoga, Yajna, types of meditations.

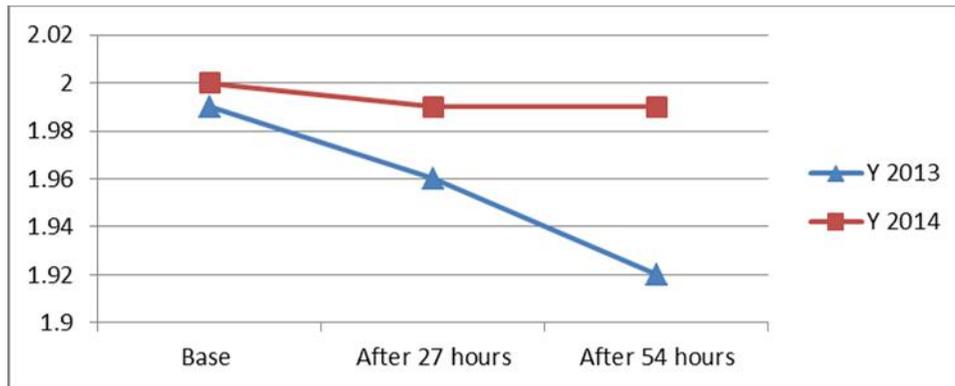
CHART 2 – LINE GRAPH OF AVERAGE INTENSITY DURING YAJNA IN 2013(LINE WITH BLUE TRIANGLES) AND IN 2014 (LINE WITH RED SQUARES).



In 2013, the Average Intensity declined slightly from the base observation and levelled. The base value was larger in 2014 indicating the preparedness and willing of participants (all of whom have attended in 2013) to take part in Yajna. Then the intensity remained constant and settling to its optimal state.

3) *Entropy* is an indicator of the level of chaos and disharmony in the system.

CHART 3 – LINE GRAPH OF ENTROPY LEVELS DURING YAJNA IN (LINE WITH BLUE TRIANGLES) AND IN 2014 (LINE WITH RED SQUARES).



There is a reduction in entropy in 2013. In 2014, it is observed to be stable during the Yajna.

IV. DISCUSSION

Bhaishajya Maha Yajna (BMY) was conducted in two consecutive years (2013 and 2014) and shows significant results in human energy field and environmental pollution levels. The following factors are to be considered while observing results due to the performance of subtle practices such as Yajna, Yoga and Tantra etc. Vedic esoteric

practices have integrated developmental approaches rather than concentrating only on few selected individual aspects of entire human and environmental systems.

In the two years of Yajna related research, we have looked at both individual levels of subtle energy and environmental factors related to pollution. Two devices were used: EPI system for human energy monitoring and Enviro-Tech for assessing environmental pollutants.

1) *Area* – The results indicate that Yajna improves area (number of pixels) of the EPI images denoting high metabolic rate in human systems. This would imply proper utilization of metabolic energy and optimization of biological processes in the body. It is seen that in both years, though separated at the start of Yajna, the area values tend to be normalized at appropriate value for optimal metabolism. Since BMY involves offering herbals into fire, smoke coming out of Kunda stirs the system towards health. Results support the logic that Yajna could be a tool for the better performance of the human system. Similar fact is reflected in a study where Yogasana and Yajna were compared for measuring stress level. Yogasana group showed below normal Activation Coefficient (AC) (0.0 to 2) before the practice and ended up at normal values AC (2.0 to 4.0), showing optimal stress response. Though there were high values of AC (4.0 to 6.0) indicating high stress level before Yajna, it came to normal values AC (2.0 – 4.0) after Yajna [3].

2) *Average Intensity* – The results show the capacity of the human system to facilitate support of any process towards healing. Generally both Area and Average Intensity are the measures of this ability. Heightened Average Intensity values in 2014 compared to 2013 values confirm that preparedness and willingness of participants to accelerate process of healing and energizing towards spiritual growth.

3) *Entropy* – The results evidently show that reduction of Entropy in 2013 is higher than in 2014. Other studies also support that first time response to intervention is greater than the subsequent ones for repetitive practices. Participants of Yajna were so excited about performance and procedure of Yajna in 2013 that the reduction of Entropy was much higher than in 2014. Consistency of Entropy values was maintained in 2014 throughout Yajna and this confirms that disharmony and chaos were not extreme but stability was established in human systems.

4) *Enviro-Tech* – The results prove that performance of Yajna reduces certain pollutants in the air. Medicinal values in herbals (216 types of plants, 3 extracted oils and banyan logs as firewood) could have helped nature to discard pollutants especially sulphur dioxide which causes acid rain and many diseases in living organisms. “The colloidal molecules of cow’s ghee and other constituents could bind, attract and grab pollutants in the air. The seized molecules as they settle on the ground would alkalize the soil. When they come in contact with plant, they could stick to leaves and act as a time-release foliar nutrient. Physically, because of the ghee, the smoke could be electrically charged” [5]. In Ayurveda, prescription of herbals in varied dosages and combinations for different diseases is common. The very name and purpose of this Yajna itself aims at bringing health to all living beings in cosmos. However, Respirable Suspended Particulate Matter (RSPM) was high in number after the Yajna because of ash nanoparticles released from Yajna Kunda. This may not disturb living beings’ health; on the contrary, it could support Ayurvedic concept that inhalation of smoke being health promoting, especially during a Yajna. Further, as Ayurveda decrees Dhumapana (smoking of prescribed herbal plants) is health promoting in daily therapeutics; thus it is presumed that the smoke may not disturb the health of those taking part in the Yajna and might even support healthy outcome in people. This of course, needs to be tested further.

V. CONCLUSION

Yajnas and many ceremonies of Indian culture have significant influence on subtle layers of human personality. Spiritual growth is ensured if any practice is followed continuously and committedly. This study is one example of how Human energy field alters positively to external stimulus such as Yajna and any ritual if followed according to the procedure mentioned in the scriptures. Performing Yajna reduces certain pollutants in the environment.

VI. SUGGESTIONS FOR FUTURE WORK

Studies which are referred here including present study focuses on entire process of Yajna and its effect. Yajna and other rituals have multiple components in its performance. It would be supportive factor if the research is conducted on each component of the entire process such as installation of Agni, worship of different deities in different methods, chemical properties of materials used in Yajna, effects of different Mantras on human energy field and so on. Individual component study would strengthen and facilitates to specify the overall effect of Yajna.

ACKNOWLEDGEMENT

Authors of this article thank Rishidev Narendran Ji, Mata Sripriya Ji and entire team of Jeeva Yoga, Bangalore. We thank KSPCB, State Govt. Karnataka, for support in measuring pollutants' level. We would like to thank Prof Ramachandra G Bhat, VC, SVYASA University and Prof TM Srinivasan for giving valuable time in editing the paper.

REFERENCES

- [1] S. Gyanashruti, and S. Srividyananda, Yajna - A Comprehensive Survey, 1st ed. Yoga Publications Trust: Mungar, Bihar, 2006, pp.18-20.
- [2] S. Ramsukhdas, Srimad Bhagavadgita - Sadhaka-Sanjivini, 9th ed., Vol. I, Gita Press: Gorakhpur, 2010, pp.538-539.
- [3] S. Sushrutha, M. Hegde, H. R. Nagendra, and T. M. Srinivasan, "Comparative study of Influence of Yajña and Yog sana on stress level as Measured by Electron Photonic Imaging (EPI) Technique", International Journal of Science and Research, 2014, 3(8), pp.1402-1406.
- [4] S. Kar, "Agnihotra: The Vedic Practice for the Purification of Environment and Modification of Human Behavior". The International Journal of Religion and Spirituality in Society, 2012, 2(3), pp. 69-74.
- [5] N. M. Rao, S. Duvvuri, H. R. Naik, G. M. Kiran, and M. G. Srivatsav, "Environmental Impacts of Homam - A Case Study (at Sridevi Veda Vidyalayamu, Srisailam). 2012 International Conference on Environmental Science and Technology IPCBEE vol.30, 2012 IACSIT Press, Singapore, pp. 83-86.
- [6] S. Kratz, and E. Schnug, Homa Farming - a Vedic fire for agriculture: Influence of Agnihotra ash on water solubility of soil P. Landbauforschung Völkenrode, 2007, 3(57), pp.207-211.
- [7] H. J. Devi, N. V. C. Swamy, and H. R. Nagendra, "Effect of Agnihotra on the germination of rice seeds. Indian Journal of Traditional Knowledge, 2004, 3(3), pp.231-239.
- [8] G. T. Singh, H. R. Nagendra, and R. Nagarathna, "Effect of deep relaxation technique on the capacity to influence REG- A randomized control trial", Indian Journal of Traditional Knowledge, 2009, 8(3), pp.459-463
- [9] N. Recca, Gayatri Mantra – A Study and Part II: Role of Gayatri Mantra in Optimizing the Random Event Generator (MSc – unpublished), SVYASA Yoga University: Bangalore, 2005
- [10] G. Attila, "The Nature of Man- Universe connections", The Noetic Journal, 2009, 2(1), pp.52-67.
- [11] E. Duane, Collective consciousness and cultural healing. A report to Fetzer Institute, 1997 – unpublished.
- [12] K. Korotkov, D. Orlov, and K. Madappa, "New Approach for Remote Detection of Human Emotions". Subtle Energies &Energy Medicine, 2009, 19(3), pp.111-125.
- [13] D. Tiran and H. Chummun, "The physiological basis of reflexology and its use as a potential diagnostic tool", Complementary Therapies in Clinical Practice, 2005, 11(1), pp.58-64.
- [14] K. Korotkov, B. Williams, L. A. Wisneski. "Assessing biophysical energy transfer mechanisms in living systems: the basis of life processes". Journal of Alternative and Complementary Medicine. 2004, 10(1), pp.49-57.