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CONCEPTS OF ELECTRICAL SCIENCES IN ANCIENT INDIA

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Abstract—Ancient Sanskrit texts contain vast scientific and technical information also other than the secrets of the Universe, Nature and their philosophical features. It may not be surprising to know that the ancient Vedic texts and āśtras did indeed possess information on technical advancements being discovered by modern science. India has been a knowledge-rich country for several centuries, that it would be the greatest credit given by the world to the ancient people in India who could foresee such profound concepts either through intuition or by experiments. In this respect, the paper provides a comprehensive survey of electrical science information hidden in various Vedic texts, āśtras and other literature.

Keywords—Vidyut, Ṛgvēda, Aṃśubōdhiṇī Śāstram, Vaimānika Śāstram, lightning

I. INTRODUCTION

The ancient literature comprising of the Vedas, Br̥hmaṇas, Saṃhitās and Upanishads is so extensive and difficult to interpret, that no other literature in the ancient world can match it. The Smṛtis, Purāṇas and the following literature have grown so tremendously, that inspite of repeated onslaughts on it by foreign influences, it is still growing. There have been several claims by some interpreters that the Vedic seers had anticipated certain aspects of modern science. The earliest written literature which have come down to us date back to an age when natural phenomena were still thought to be manifestations of a divine will. The concept of electricity in Vedic texts and other āśtras may be surprising to the general mass of people. As the Vedas are the treasure house of knowledge, they do indeed possess such information in either direct or subtle forms. The Vedas are said to have three literal meanings "Ēdhi Daivika", "Ēdhi Bhautika" and "Ēdhyatmika". Although, it may not be said that all concepts of modern electricity (such as generation, transmission, distribution, power protection, high voltage engineering, lightning sciences) have been referred in ancient Vedic texts and āśtras, it would be our humble nature to have an open, positive and rational thinking towards this branch of science. Much of the

texts have been lost to us in course of time - in fact, the Vedic literature and āśtras available at present is just a fraction of what remained in the ancient world. However, this paper attempts to give a glimpse of such advanced concepts of electrical science information hidden in these ancient texts, some of which have been discovered in the past few centuries by modern science and attributed to Western scholars, while some which ought to be yet researched and proved by 8), RV (9-76-3), RV(9-87-8), RV (10-95-10) wherein the



order of "Ma,ala" "Sēkta" "āl°k;" is indicated in brackets. Similarly, other words such as "Vidyuta:" are found in RV (1-23-12), RV (1-39-9), RV (1-64-5), RV (5-52-6), RV (5-54-11), RV (5-83-5), RV (7-33-10), RV (9-41-3) and RV (10-91-5). Lightning is one of those natural wonders that has astounded man from the earliest to the present times. Therefore we find certain passages in the Atharvav@da revealing that the ancient seers revered it as a supernatural force that benefited mankind. One such passage is-

"Namast® Astu Vidyut® Namast® Stanayitnav® | Namast® Astvaꣳman® Y®n; Dē:īꣳ Asyasi | | "

Homage be to thy lightning, homage be to thy thunder, homage be to thy hailstones, with which thou hurlest at the impious one. - Atharvav@da (Kj, a I, Sēkta 13, Mantra 1)

Further in the same context it says- "YiÆ Tv; D®v; Asojanta Viꣳva IÄu K®, v;n; Asan;ya D®Ä, um | S; N° M°a Vidhath® G®, n; Tasyai T® Nam° Astu D®vi | | " *"Thou, whom all Gods created for killing the enemies, the bold one [the Gods] making an arrow for hurling, do thou be sung in "Vidvat Sabh;js" (Councils), be merciful to us, homage be to thee, O' Goddess. - Atharvav@da (Kj, a I, Sēkta 13, Mantra 4)* In the context of paying homage to the Maruts (Wind gods), the Igvd@da gives some interesting words that may portray advanced electrical concepts in the "Ēdhi Bhautika" sense although the Bh;Äya of S;ya, j;rya and others do not consider this meaning. We may however consider the personification of the Wind gods (Maruts) wielding the lightning in the sky, bringing about rain and also to be personified as traveling in chariots of lightning.

"Anu Tritasya Yudhyata: äüÄmam;vannuta Kratum | AnvindraÆ V®tratÆry® | Vidyuddhast; Abhidyaava: äipr; äerÄanhira, yayæ: äubhr; Vyajjata äriy® | | "

The brilliant Maruts who wield the weapons, which are shining, in their hands, radiant above all, gloriously display golden coloured crowns on their head, helped Indra in the battle against V®tra to kill the enemies. - Igvd@da (Ma, ala 8, Sēkta 7, ä°k; 25)

In other passages they are glorified as traveling in chariots, which shine brightly as in- "Vidyudrath; Maruta IÄ°imant° Div° Mary; Itajit; Ay;sa: | Sarasvatæ äru, avanyajuiy; D;ht; RayiÆ SahaværaÆ Tur;ja: | | "

May the Maruts, who travel in chariots which are shining brightly, who are armed with spears, resplendent, destroyer of foes, from whom the waters proceed, (who are) unresting and adorable and may Sarasvatæ hear (my prayer) and may you (Maruts) speedy in your liberality bestow (upon us) riches and good offspring. - Igvd@da (Ma, ala 3, Sēkta 5, ä°k; 13) Passages from the "V;jasan@ya SaÆhita" (26.38) (26.38)], "Taittiriya SaÆhita" (4.5.7.2) also refer to persons well versed in electrical (lightning) sciences as "Nam° M®ghy;ya Ca Vidyuty;ya Ca". Igvd@da also refers to such persons as "Vidyunmahasa (one who is well versed in electrical sciences) if we consider the meaning "to know / learned one" taking into account the root word "Vid Dh;tu"

"Vidyunmahas° Nar° Aꣳmadidyav° V;itativÄ° Maruta: Parvatacyuta: | Abday; Cinmuhur; Hr;dunævota: Stanayadam; Rabhas; Udr°jasa: | | "

The Maruts (appear) radiant with lightning, leaders (of the rain), armed with weapons, blazing with the wind, the precipitators of

mountains, the repeated distributors of waters, wielders of the thunderbolt, roaring in concert, combining (to send rain) and of exceeding strength. - Igvd@da (Ma, ala 5, Sēkta 54, ä°k; 3)

Many passages of the Atharvaveda describe electricity, also give a description of the ways to harness it and use it in several useful applications seen to this day in the technical world. By suitable P;inæan principles and by using "Y;ska's Nirukt;" and "ä;kaꣳj;ya, a Nirukt;", some interpreters are of the opinion that Kj, a XX and Kj, a III.27 of Atharvav@da have many meanings that convey electrical information, its applications and description.

IV. ELECTRICITY IN THE UNIVERSE

The concept of birth of the Universe has been dealt as early as in the Igvd@da's "N;sadçya Sēkta". The reference to the term "Ambhas" in this Sēkta means that there existed prior to creation "something that produced sound". Several other texts also propound the theory that the source of creation of the Universe began by the will of "Param;tma" who resided in the Cosmic waters. MaharÄi Bh;radv;ja in his extensive treatise on Cosmogony, titled "AÆub°dhinæ ä;stram" deals with the evolution of the Universe. In order to make it understandable, "B°dh;nanda" wrote a commentary on "AÆub°dhinæ ä;stram". There are references to concepts of water in the electric form during primordial creation process.

"AbrÆpandvividhaÆ Pr°ktaÆ VidyudbhÆtaprabh®data: | Tay°r;idau Vidyudip°tpatti Kram° NirÆpyat® | | " *Shastras speak of a two-fold condition of water- that of "Vidyut Jala" water in the form of electricity" and "Bhutha jala" (ordinary water) formed by combination of requisite elements. The process of evolution of the former will be described now.*

The text further quotes an ancient work known as "Jala Jy°ti Vil;sa" "Avyakt;vara, jntasthacinmayasy; gakanpan;it | SoÄ°jy;dauyadabhÆd;ipastajjy°terasa Ucyat® | Vaidyut°dakamity;hustad®vajj;navittam; : | | " *That water which came into existence prior to creation as a result of shaking of the body of the "Avyakta Brahma" (in the Avyakta Halo) and who is in the form of radiance is known as "Jy°te Rasa". The learned call it "Vidyut Jala" (water in the form of electricity). Another text "SoÄ°i Vil;sa" claims that-*

"Jalar®t° Rasa May; Brahmi, °tpattih®tuk; : | Vaidyut°daka Madhyastha äaktayastrividh;ssm®t; : | | " *(Vidyut Jala is)The primordial matter of creation and is made up of three forces -Water, Retus or semen and Rasa (spirit of Atma). AÆub°dhinæ ä;stram further describes the creation of "Brahmi, as" through the fusion of "Vy;paka äakti: / Jalaghana äakti:-penetrative power), "Vidyut äakti: ":-electric power) and "Tama: äakti: "-Darkness powers).*

V. CONCEPTS OF ELECTRICAL EQUIPMENTS, THEIR CONSTRUCTION AND APPLICATIONS

Western scholars assert that the first battery / cell was invented in 1800 by Alessandro Volta, Professor of Natural Philosophy at the University of Pavia. He described in his "Couronne de tasses", a battery of wet cells in which small vessels containing solutions of salt / lye connected by means of metallic arcs of which one end is copper and the other end made of tin or zinc immersed in the adjacent vessel. Agastya SaÆhita, a Post-Vedic text describes a similar preparation of a battery /



cell as follows-

"SaÆsth;pya Mā,may® P;tr® T;mrpatraÆ Su¿°bhitam |
Ch;day®cchikhigriv®a C;rd;rbhi:
K;Āh;hap;Æsubhi : || Dast;l°Àh° Nidh;tavya:
P;rad;cc;h;ditastata: | SaÆy°g;ij;yat® T°j° Maitr;varu,a
Sap;ujitam || ŌvaÆ āat;n;Æ Kumbh;n;Æ SaÆy°ga: K;ryakōta
Smōta: || "

After placing copper plates inside an earthen pot, it has to be covered by a mixture of

powdered coal, moisten wood saw-dust (then zinc powder) is to be spread

and covered by mercury. Due to their interaction (the resulting brightness that appears), charge "Mitra" (" -positive) and "Varuna" -negative) are produced. There is also a hint to use hundred such cells (as in the case of Voltaic cells). Electrical Sciences not only comprises of static electricity, batteries and lightning sciences but is much more vast involving the use of electrical machines and equipment, generation, transmission, distribution of electricity and protection. All such wonderful concepts can be traced back to one such authoritative ancient text "Vaim;nika ā;stram" by MaharĀi Bh;radv;ja. It has several references to some ancient electrical equipments "Vidyut YantraÆ", electrical wires "Vidyut Tantrē", different types of lightnings and their effects on aeroplanes ("Vim;nas"). In the description of a special type of mirror to be installed in the plane namely "Guh;garbha Darpa,a" (MĒŌ½pĒMĒ;ĒÇ nūĒĒÇĒ), there is a verse mentioning the technical use of electric forces against enemy planes.

"V;ru,cv;takira,a āaktisa'gharĀa,akram;t | J;yant® R°gad;
Nā;Æ Guhy;dy; ViĀa;aktaya: |
T;ssam;hratya V°g°na VidyutsaÆy°gata: Puna: | Pras;rya
Paray;nasthajan°pari Vi¿®Ā°ta: || "

The conflict between electricity in the clouds, wind and solar rays generate harmful forces affecting pilots. The "Guh;garbha Darpa,a", by attracting them and projecting them by electric force against enemy planes, (renders them physically disabled and incapable of fighting). Vaim;nika ā;stram quotes several ancient texts, not available to us at present, regarding such electrical information. One such text, "Yantra Sarvasva", by MaharĀi Bh;radv;ja tells us-

"Tundil° Pā;jarastadvadaÆzupa;c;pakarĀaka: | S;ndh;nik°
D;rpā,ik;Ā;aktiprasavaka: Kram;t |
Saptait® Y;na;ākten;Æ Yantr;Iti Vinir;it;: || " The seven kinds
of powers required for Vimanas are produced by seven motors named
Tundila, Pā;jara,

Æzupa, ApakarĀaka, S;ndh;nika, D;rpā,ika and āakti Prasavaka.
In the description of subsidiary yantras to be installed in the
Vim;na one finds several

references to "Vidyut YantraÆ" (-electrical contrivances),
attached by means of electric wires "Vidyut Tantrē". A few
such quotes indicated below show the technical advancement
made in those early ages.

"RuciraÆ Bh;skaraÆ Vi¿vakriy;dar¿anadarpa,am |
Sandh;ray®dō-haÆ Tattatkelakai¿;stram;nata: |
SakelavidyudyanttraÆ Tu Da,amĒl® Niy°jay®t | " Prepare
a mirror of perfect finish and fix it to the pivot "Da,a" At the base
of the pivot, an electric yantra should be fixed.

There is also a reference to insulated wires in the text, wherein
it explains that the skins of rabbit, rhinoceros and other animals
were used for covering the "NavamaÆ
Sth;pay®dvidyucchaktiyantraÆ Sakelakam | Atha
T;mr;vartanttrēn Carma Pā;cakav°Ā;it;n |

Pras;ray®cchaktiyantr;tsarvatra Vidhivatsamam || " (Then,
as the ninth item) should be installed the electric generator with
switch (in the western center). Copper-coated wires covered with
five kinds of skins should be spread all around, proceeding from the
"āakti YantraÆ". In the context of explaining the subsidiary
yantra called "Ku,Āi,ē¿aktiyantranir,aya:" MaharĀi
Bh;radv;ja quotes another ancient text "Kriy;s;ra" giving details
of an electrical mechanism of control with switches and
wires as follows-

"Vidyuttantresam;y°g;t Bhr;ma,ecakrakelakam |
Sarv;gabhrama,aÆyantr® Tattatkelakam;rgata: |
Yath;bhav°ttath;kelaissth;pay®tpa;cim;ntar® | " The electric
wire connected central operating switch should be placed in the
west. By putting it on, the "Bhr;ma,ecakra" (pivotal wheel) will
revolve setting in motion individual parts as and when desired by
turning their respective switches. Further it says-
"Dr;vak°va Ma,aupa;c;dvidyucchaktiÆ Pray°jay®t |
SaÆy°jay®tsfrya Kira,;n;hraty;smin Tathaivahi | Sfry;Æzū
Vidyutsampark;t Dr;vak°ca Ma,aukram;t |
Bhav°cchētaghanastasmintre¿aktissau¿zik; Bhid; || "

The electric current should be passed to the acid containing the
crystal. Solar rays also should then be passed into it. Thereby, in
the acid, there will be generated a female āakti of 5 "Nya'ka" called
"Sau¿zik;". One might marvel at the advancement in power
operation and protection switchgear those days, that is self
evident in the context of explanation of the crest jewel
"āir°ma,i" of the Vim;na. MaharĀi Bh;radv;ja refers to an
ancient text, "Bohat K;ik; ", explaining about different types
of switchgear. He states that the ninth type, of the twenty-
five kinds listed in the text, is suitable to connect the Vim;na
with solar beams for safe navigation. There are references to
other types of switches also like the "Bhr;ma,ec Kelaka",
"Kera,aka Kelaka", "Kacchapa Kelaka" and so
on. Vaim;nika ā;stram also throws light into the different
types of lightnings studied in the ancient past. It quotes from
an ancient text, "āakti TantraÆ" written by MaharĀi Agastya
as follows-

"R°ciÆd;h;ak;siÆhe Pata'g;k;ilan°mik; | Lat;vond;ra;Ā;ca,Æ
Mah°rmep;rvā,emo; |
Ulk;n°trasthit;hy®t® Vidyut°dv;da;akram;t | " The twelve lightnings
which form the eyes of the shooting stars are
named R°ci,ē, D;haka, SiÆhe, Pata'ga, K;ilan°mik;, Lat;, Vond;,
Ra;Ā;, Ca,Æ, Mah°rmē and P;rvā,ē.

MaharĀi Bh;radv;ja states that a special yantra called
"Vidyudv;da;aka YantraÆ" has to be
installed on the plane. "Yantra Sarvasva" explains in detail,
the process of construction of this electrical equipment. "First
duly coated "Pa;laghana" should be prepared having 22 folds so as
to cover the Vim;na. Pau, raka and other crystals should be fixed
in them. Mah°r,a acid ("Dr;vaka") should be placed inside in the
north east side of the Vim;na. Eight rods each of 6 arms length
made of anti-lightning glass "Vidyudōg°pasaÆh;ra Darpa,am"
should be fixed in eight directions over the cover. At the beginning,
middle and end of the Vim;na canopy, spring wheels made of
Īambh°½ metal faced, should be fixed with revolving bolts. Cages
made of wires should enclose Pau, raka crystals and the
wire terminals should be attached to spring wheels. The wire ends
from four such cages should have a common switch."

"Ta;Ā;itsapcalanam VarĀaōtaum°gh°Āu Pā;cadh; |
V;ru,yagnimukhauda,amah;rvā,ik; Iti | " During the rainy season,
when rain clouds gather in the sky, lightnings of five kinds termed as
"V;ru,ē", "Agnimukh; ", "Da,a",



"Mahat" and "Rjva, ikj" begin to play

(havoc). "Parasparam Bhav@ttasminmahagnni: Prajiyat@ | T@nadagdhbhav@t Vy°may;nastatkAa,ata: Kram;t | Atastatparih;rjthaÆ MukhadakAi,ak@ndray° : | Vim;n@sth;pay@dvidyudyantirasamyagyath;vidhi | |"

By their interaction, destructive fires arise. To minimize their effects, special mirrors called "Vidyuddarpa,a" are to be installed in the front and right side of the plane to prevent fires on airplanes caused by the five special lightnings in the rainy season.

In the context of explaining the construction of some special Vimjnas like "Sundara Vimjna", there are excellent references to electrical equipments and their construction. "Yantra Sarvasva" quotes -

"Sa'gharAa,aÆ P;kajanyaÆ Jalap;taÆ Tathaivahi | S;Æy°jakaÆ Kira,ajanyamity;dcniz;strata : | Dv;triÆ;aditipr°kt;nividyudyantri,yath;kramam | |" There are 32 kinds of yantras for generating electricity such as by friction, by heating, by waterfalls, by combination, by solar rays etc. The description of the construction of "Vidyut Yantra" contains many other fascinating details. "Aakti TantraÆ" of MaharAi Agastya explains the construction of such an electric generator with intricate details of measurements, materials to be used, manufacture of the components, amount of electricity produced and other details. This yantra basically consists of vessels for electric storage placed in the four directions. The central vessel should be made of "Capalagrjhaka L°ha"

"CatuAp;trasthit;n;uddhakhuratailapral@pit;n | Sambhr;may@dvgat°mathan°nmathanaklak;n | KakAyadvizat°A,av@g;dbhav°tkelabhran°yahi | CatuAp;trasthametr°Au P;cit°AvaÆ;ubhi: Kram;t | Mathan°nmathanayantracakr; icayath;kramam | Yath;bhav@dvisahasra KakAy°A,aÆ V@gat° Bhazam | Tanmetri,i Vi;@A@a Dadhivanmathayantihi | Ot°napratip;tr°A;azatali°kapram;ata : | V@g°d;virbhav@dvidyucchakti;uddh;tiv@gine | EcatuAp;trameligr;d;vidyutpfrak;ntar@ | Sandh;ritak;ntal°han;½;ntargatatantribhi : | OtacchaktiÆsam;hratyaaaktipfrakap;trak@ | |"

The well-oiled keys in the four vessels should be revolved with speed, to 200 degrees heat, when the liquids (urines) in the vessels will be boiled by the heat rays. Then the keys should be hastened up to 2000 degrees. The liquids in each vessel will generate 800 linkas of electricity. The power should be conveyed by wires in the "Kjnta L°ha Nj½a" (tubes made of Kjnta metal) to the storage vessel. MaharAi Bh;radvja refers to the installing of a button switch pole "Ba;I,ik; Stambha" in the explanation of components to be placed in another special plane called "Rukma Vimjna"

"Pa;c;ccaAakavattasy°parikelasamvitam | SaÆsth;pay@dba;Iinik;mantari;vottaku;mal;m | Tasminna'guA;IhavikA°p;dantarasaucalanaÆ Yath; | Tath;bh;r;makacakr;ikelakaisahay°jay@t | Yath; Ba;I,ik°parya'guA;IhavikA°pa,aÆ Bhav@t | TatKaa,;tstambh;ntarasthacakrakel;nyath;kramam | Paribhramam Ativ@g°na VidyutsaÆy°jan;tsvata : | |"

On top of the poles should be fixed goblet shaped cups with button switches like half blooms with wheels and keys, so that on pressing the button with the thumb, the wheels in the other pole will revolve from electric contact. While elaborating the details of "Tripura Vimjna", there are references to other methods of generating electricity, especially from solar rays. "Atha

Yantramukh;dvidyucchaktim SfryiÆ;ubhi: Kram;t | |" The process of producing such electric power with the use of special mirrors and crystals such as "AÆ;upa Ma,i", "Vidyud;karAaka Ma,i", "AÆ;umitra Ma,i", "Kira;karAa Darpa,a" and other materials is dealt exhaustively in the text. The construction of a special type of motor is also found in the description of "Tripura Vimjna"

VI. CONCEPTS OF LIGHTNING SCIENCES IN POST-VEDIC TEXTS

Lightning phenomenon is a peak discharge in which charge accumulated in the clouds discharges into a neighbouring cloud or to the ground. MaharAi Angerasa's elaborate treatise titled "M@gh°tpatti Prakara,am" deals with sixty-four types of lightnings, their effects, types of clouds from which they originate. This text has been referred in the Vaim;nika ā;stram. Post-Vedic texts like the "Bohat SaÆhit;" of Var;hamihira, "āivatattvaratn;kara:" by K@ladi Basavarja, "M@gham;I;" and "Bhadrab;hu SaÆhit;" give fine details of different types of lightnings, their effects as well as some astrological details of lightnings. This aspect is dealt very well in the last text mentioned above.

The Amarakosha gives the names of some types of lightnings such as "A;rvat°", "KAA,aprabh;", "Ta-it", "Saud;mine", "Caucali;" and so on. Some other texts refer to different types of lightnings such as "Ca;Iul;I", "Acirar°ci:" "R;dhi;" "Ncl;ujan;" and "M@ghaprabh;" "Bhadrab;hu SaÆhit;" gives elaborate details of lightnings of which some are illustrated below. "Saud;mine Ca Perv; Ca Kusum°tpalanibh; āubh; | Nirabhr; Mi;rak@;e Ca KAiprag; C;zanistath; | |" Saud;mine and Perv; types of lightning, similar to the brilliance of a lotus give auspicious results. If these lightnings arise from a sky uncovered by clouds, are multibranched (known as Mi;rak@;e), traveling fast and strong as a thunderbolt (Vajra), it is called A;ani . "Ra;mivat° M@din° Bh;ti VidyudaparadakAi,° | Harit; Bh;ti R°m;jucaÆ S°dakaÆ P;tay@dbahum | |" Lightning which creates glow over the earth's surface is called Ra;mivat°, one which travels in the southwest direction is called Harit; and the one having several branches, bring about more rain is called R°m;juca.

"VidyutaÆ Tu Yath; Vidyut T;Y@t Pravi;dyad; | Any°nyaÆ V; Likh°y;t;Æ VarAaÆ Vindy;t Tadj; āubham | |" If one lightning strikes another and enters it, then it is auspicious indicating good rain. "Bhadrab;hu SaÆhit;" gives details of lightnings occurring in different seasons. It indicates that if green and honey colored flashes occur in summer season "Gr°Ama Itu", there will be no rain, but if the same flashes occur in rainy season "Varsa Itu", there will be rain. Similarly, if blue hued lightning flashes in autumn "Sarat Itu", there will be no rain. Lightning in the east and west brings rain. Lightning in the southwest brings disease in the region of such a flash. Similar details are found in the "āivatattvaratn;kara:", an ancient encyclopedic text, written in 1709 A.D. and which is in the form of a lengthy dialogue between father and son. It quotes some details on lightnings in Chapter III as below-

"Aindre Tu Jalad; Vidyud;gn°y°e Jalan;ine | Y;my; Svalpajal; Pr°kt; Nairoty;ambar;nvit; | V;taprad; Tu V;vavy; Kaub°re Sasyadiyine | Sarvasasyakare Vidyudai;ne KAipravarAad; | |" Lightning in the east (Aindre) originating from clouds provides good rain, lightning in southeast is a destroyer of waters (rain),



that arising in the south creates less rain while that arising in south-west is noisy. Lightning in the northwest increases winds, while that in the north (Kaubore) increases crops. Lightning in north-east produces good crops and creates instant rain. "M@gham;l;" , a part of "Rudray;m;za Tantra" also deals extensively on science of clouds with some details of lightning also.

VII. CONCLUSIONS

Modern day Electrical engineering sciences have profound applications involving the use of motors, generators, electrical control equipment and so on. Although several studies on the effects of electromagnetic storms (auroras) on transmission lines, lightning (high voltage engineering) studies and other new methods of electrical control have been carried out, there seems that still several potentialities of electrical energies are not fully harnessed. An in-depth research study on the electrical aspects mentioned in these ancient texts needs to be carried out in order to give the credit to our ancient Rishis regarding such marvelous electrical concepts used in the ancient past. This paper has just presented the tip-of-the-iceberg view of the electrical concepts used in the ancient past. It would be the humbleness of the world to venture out a full, in-depth study and research into these concepts rather than branding them as imaginary thoughts of the mind.

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