

எண்ணென்ப ஏனை எழுத்தென்ப இவ்விரண்டும்
கண்ணென்ப வாழும் உயிர்க்கு.
-திருக்குறள், 392, பொருட்பால் - கல்வி



*Letter, number, art and science
Of living kind both are the eyes.*
-Yogi Shuddhananda's Translation

RAJALAKSHMI ENGINEERING COLLEGE (AUTONOMOUS)

DEPARTMENT OF HUMANITIES AND SCIENCES

Hum Sci 360⁰

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NEWSLETTER

Volume 01 Issue 02

VISION

To become a Department of Excellence in Mathematical education, Physical Sciences and Research and Development

And

Setting the standards of Excellence in Communication skills and preparing the learners to meet the challenging trends in the professional career.

MISSION

The Department is Committed

- To impart high quality education in Applied Mathematics and Physical Sciences at various levels of programmes in engineering and technology.
- To build confidence in engineering students in using mathematical and scientific tools for designing industrial products and systems in a better, faster and effective way.
- To improve the Communication Skills of engineering students and make them suitable for employment.

EDITOR'S MESSAGE

Season's greetings!

We are happy to present the second issue of our department's quarterly newsletter 'HumSci 360°'. It is very promising to note that our faculty members have published six research papers in reputed international journals and have attended numerous programs within the last quarterly period. We have also conducted two one-day programs through a national seminar and an FDP, which turned out to be very successful with a good number of participants from both internal and external teaching fraternity. This issue also features an article penned by one of our faculty members.

Thus this newsletters serves both as a reflecting media of our department's activities in the last quarter as well as a motivating reminder of the deeds we set to achieve.

I wish this New Year and the harvest festival of Pongal brings us all eternal joy and prosperity helping us to reach more and more heights.

Dr. M. Muthusamy
Professor & Head of the Department

PROGRAMS CONDUCTED

The Faculty of Chemistry organized a One day National Seminar on “ADVANCES AND FUTURE CHALLENGES IN MATERIAL SCIENCE” on 22.11.2019 in the Heritage Hall, Academic Science Block.

Eminent personalities such as **Dr. T.M. Sridhar**, Associate Professor and Head, Department of Analytical Chemistry, University of Madras, **Dr. T.S.N Sankara Narayanan**, Research Professor, Department of Dental Biomaterials, Chonbuk University, Jeonju South, South Korea, and

Dr. S.Mohanaroopan, Senior Assistant Professor, Department of Chemistry, School of Advanced Sciences, VIT University, Vellore, acted as resource persons and delivered key note lectures on various emerging topics.



Department of Humanities and Sciences



Rajalakshmi Engineering College (Autonomous)

The department organized a Faculty Development Programme on "**Research Methodology**" on 30.11.2019 in the Heritage Hall, Academic Science Block.

Dr. V. Ramanuja Chari, CSIR - Bhatnagar-Fellow, IIT - Madras & Scientist "H" (Retd.), DRDO,

Dr. R. Balaji, Scientist, Centre for Fuel Cell Technology (CFCT), ARCI - IITM Research,

Mr. Ram Jawakar, Asst. Controller of Patents & Designs, Office of Controller General of Patents, Designs & Trademarks graced the event and delivered key note addresses on various topics related to research and patent.



FACULTY PUBLICATIONS

- Mrs. S. Vasanthi & Dr. V. Lakshmi published a paper titled "Thermal Radiation Effects on Free Convection MHD Flow Past a Parabolic Accelerated Vertical Plate with Variable Temperature and Uniform Mass Diffusion" in the journal "International Journal of Infokara Research", Vol. 8, Issue 10.
- Dr. J. Venkatesan published a paper titled "Effects of Chemical Reaction on Flow Past a Parabolic Started Vertical Plate with Uniform Heat Flux and Variable Mass Diffusion" in the journal "International Journal of Tierarztliche Praxicis", Vol. 39, Issue 10.
- Dr. J. Venkatesan published a paper titled "First Order Chemical Reaction on Flow Past a Parabolic Started Vertical Plate with Uniform Heat Flux and Mass Diffusion" in the journal "International Journal of Tierarztliche Praxicis", Vol. 39, Issue 11.
- Mrs. D. Rajalakshmy & Dr. B. Sivakumar published a paper titled "A new Centralizer Algebra of the Wedge Product" in the journal "International Journal of Tierarztliche Praxicis", Vol. 39, Issue 11.
- Mrs. S. Vasanthi published a paper titled "A New Approach for Solving Intuitionistic Fuzzy Optimization Problems" in the journal "International Journal of Tierarztliche Praxicis", Vol. 39, Issue 11.
- Mr.M. Infant Shyam Kumar published a paper titled "Synthesis and Characterization of Hydrothermally Derived Novel Reduced Graphene Oxide / Magnesium Niobate (RGOMN) hybrid Nanostructure for Energy Storage Applications" in the journal "International Materials Research Express", Vol. 6, Issue 12.

PAPER PRESENTED

• Dr. D. Mohan participated and presented a paper titled "Advances in Membrane Technologies and Application for Zero Liquid Discharge Process" in the international seminar, from 17.12.2019 to 18.12.2019, at the Yokohama National University (YNU), Yokohama, Japan, under the DST sponsored Government of India and Japan Society for Promotion of Science (JSPS17) scheme.



CONFERENCES / PROGRAMS / WORKSHOPS ATTENDED

• Mr. K. Vijayanarasimhan participated in the workshop on "Growth and Characterization Studies on NLO Crystals" on 01.10.2019 at C.Kandaswami Naidu College, Chennai.

• Dr. S. Jayakumar participated in the national workshop on "Training of Teachers for Student Induction Programme (Deeksharambh - Phase II)" from 30.10.2019 to 31.10.2019 at Bharathiyar University, Coimbatore.

• Mrs. R. Kavitha & Mrs. R. Bhavani participated in the workshop on "Materials Characterization" on 02.12.2019 at Division of Physics, School of Advanced Sciences, Vellore Institute of Technology.

• Dr. B. Sivakumar, Mrs. S. Vasanthi, & Mr. G. Srihari participated in the FDP for the courses of second semester B.Tech - Computer Science & Business System from 09.12.2019 to 10.12.2019 at Tata Consultancy Services, Chennai.

• Mr. K. Senthil Kumar, Mrs. R. Kavitha, Mrs. B. Latha, Mrs. S. Anu, & Mrs. R. Bhavani participated in the FDP on "Hands-on Training on Density Functional Theoretical Computations of Emerging Materials & Its Applications (DFTCEMA-2019)" on 17.12.2019 at Dept. Of Material Sciences, Saveetha School of Engineering (SIMATS), Chennai.

• Mr. K. Sureshbabu participated in the workshop on "Battery Technology for E-vehicle" from 26.12.2019 to 28.12.2019 at IIITDM Kanchipuram, Chennai.

DO YOU KNOW ?

The Nobel Prize in Physics 2019 was awarded "for contributions to our understanding of the evolution of the universe and Earth's place in the cosmos" with one half to **James Peebles** "for theoretical discoveries in physical cosmology", the other half jointly to **Michel Mayor** and **Didier Queloz** "for the discovery of an exoplanet orbiting a solar-type star."



ARTICLE: Astronomy in Ancient Tamil Literature

Introduction

When we gaze at the stars, we are indeed gazing at the past – for even the closest star, excepting our Sun, of course, is a few light years away. Very similar it is with literature, literature is the treasure chests of history of a civilization, and everything belonging to it is embedded in its literature. Though anyone can look up at the night sky and see the stars, planets, and asteroids, only a few can tell them apart. Similarly anyone who reads a literature will not be gifted with the information it holds, it requires a great deal to open those treasure chests. I have, in this article, attempted to indicate what could have been what and wish to trigger some serious consideration of the possibilities from our ancient past.

Astrophysics

It is interesting to know what was known 2000 years ago of things outside this Earth. To start with, they are very well knowledgeable of all the surrounding planets and constellations. The poets of the Sangam age are very naturally quoting the relative positions of heavenly bodies and sometimes are also drawing astrological conclusions from them. In song 229 of Puranaanooru the poet Kudalur Kizhar notes thus,

*Panguni uyar azhuvathu
thalai naalmeen nilai thiriya
nilai naalmeen athan ethir erthara
tholnaalmeen thurai padiya...* Lines 5 – 8

-and anticipates the demise of the then king Cheraman Yanaikat Cey Mantharal Irumporai, which follows shortly. Now this may sound like astrology, however it also includes some serious traits of astronomy. The references to various stars [Panguni uyar Azhuvam-Middle of Panguni Month, Thalai Naalmeen – Raising Star (Uthiram), Nilai Naalmeen – Stable Star (Moolam) and Thol Naalmeen – Falling Star (Mirugaseersham)] should be analyzed.

Few references to the planet Mercury are found, Mercury rise being used to indicate the beginning of dawn,

Velli thonra... Song 385, Line 1

Poet Kovur Kizhar, in song 386 talks about various possibilities for the path of the planet Mercury and concludes saying that he will not be afraid in any case for he is under the rule of the mighty Chozan Killivalavan,

*Kunathisai ninru kudamudal selinum
kudathisai ninru kunamudal selinum
vadathisai ninru thenthisai selinum
thenthisai ninru kurukaathu needinum
yaandum nirka velli...* Lines 20 - 24

Here Kunathisai, Kudathisai, Vadathisai and Thenthisai are West, East, North and South respectively. This is probably talking about the apparent retrograde motion of the planet. There is one reference to the planet Saturn as well, again in a similar astrological sense; in song 117 poet Kabilar mentions some possible planetary symptoms,

*Maimmeen pugaiyinum thumam thonrinum
thenthisai marungin velli odinum...* Lines 1 – 2

Cosmology

The knowledge of heavenly bodies and their trajectories could, at least, be accounted to skilful and structured observation, but the knowledge about deep space, which these poets had, really amazes us to great extents. There are many instances where the poets are referring to deep space and mentioning the vacuum present there. The first one is by Vellaikudi Naaganar in song 35,

Vali idai vazhangaa vaanam sudiya... Line 2

He refers to the Earth as being covered by the dome of sky (space) which has no air (vali) flowing

through it. A second one, by Markandeyanaar in song 365, mentions a very meaningful name to space,

Vali idai vazhangaa vazhakarum neetham... Line 3

Using the same words as before, Markandeyanaar refers to the vacuum filled space as 'neetham', which literally means 'devoid of everything' (neekku – to remove).

Let me conclude this article by quoting what could be a possible mentioning of ozone layer and its function, from this song by Thaamappal Kannanaar,

*Nilamisai vaazhnar alamaral theera
theru kathir kanali vemmai thaangi
kaal unavaaga sudarodu kotkum
avirsadai munivarum...* Song 43, Lines 1 - 4

In which the poet talks about sages (munivar) who

eat air (kaal unavu, kaal – air) and roam the sky (kotkum – spin / revolve) to filter out the burning rays from the sun (theru kathir kanali vemmai thaangi) for the sake of those who live on Earth. Can't this be taken as a metaphor for Ozone as Munivar?

Conclusion

In all, what has been mentioned here is just another possible way of interpreting a few thousand years old poetry, some suggestions are strong, yet some aren't. It all depends on what we choose to believe and what we don't. However, if we choose to believe that our ancestors indeed possessed greater depth of knowledge then we perceive they did, it should all but prosper us by inspiring us.

K. Vijayanarasimhan
Assistant Professor (SS) of Physics

“Excellence is a continuous process and not an accident”

-Dr. A. P. J. Abdul Kalam

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