



**Educate to Empower**

**Volume 1 Issue 9**

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## **Cover Page Painting**

**Hemant Kumar Sachdev, I AIML**

## **I. Publications by faculty members:**

1. Dr.M.Subramanian published a paper titled, "Existence of solutions for Caputo sequential fractional differential equations with integral boundary conditions." *Int. J. Nonlinear Anal. Appl* 14, no. 1 (2023): 3045-3061.
2. Dr.M.Subramanian published a paper titled "Existence and Ulam–Hyers Stability Results for a System of Coupled Generalized Liouville–Caputo Fractional Langevin Equations with Multipoint Boundary Conditions." *Symmetry* 15, no. 1 (2023): 198.
3. Dr.M.Subramanian published a paper titled, "On a System of Coupled Langevin Equations in the Frame of Generalized Liouville–Caputo Fractional Derivatives." *Symmetry* 15, no. 1 (2023): 204.
4. Dr. K. Karthikeyan published a paper titled "Analysis of the far-field behavior of waves in magnetogasdynamic." *AIMS Mathematics* 8, no. 3 (2023): 7329-7345.
5. Dr. K. Karthikeyan published a paper titled “Existence Results for Abstract Fractional Integro Differential Equations”, *Dynamics of Continuous, Discrete and Impulsive Systems Series A: Mathematical Analysis*, 30 (2023) 109-119.
6. Dr. S. Suriya Uma Devi and Dr. M. Prakash published a paper titled, "Entropy Study of Hybrid (Al<sub>2</sub>O<sub>3</sub>–Cu/H<sub>2</sub>O) Nano-Fluid in a Cylindrical Cavity with Wavy Sides Under the Effect of a Parallel Magnetic Field." *Journal of Nanofluids* 12, no. 1 (2023): 231-241.
7. Dr. Suriya Uma Devi S published a paper titled, “Numerical Crank-Nicolson methodology analysis for hybridity aluminium alloy nanofluid flowing based-water via stretchable horizontal plate with thermal resistive effect”, *Case Studies in Thermal Engineering*, Volume 42, 2023, 102707,
8. Dr. K. Karthikeyan published a paper titled, "Analysis on Controllability Results for Impulsive Neutral Hilfer Fractional Differential Equations with Nonlocal Conditions." *Mathematics* 11, no. 5 (2023): 1071.
9. Dr. K. Karthikeyan published a paper titled, "Existence and uniqueness for a coupled system of fractional equations involving Riemann-Liouville and Caputo derivatives with coupled Riemann-Stieltjes integro-multipoint boundary conditions." *AIMS Mathematics* 8, no. 5 (2023): 10067-10094.
10. Dr. K. Karthikeyan published a paper titled, "The Existence of the classical and strong solutions for fractional impulsive semilinear integro differential equations." *Nonlinear Studies* 30, no. 1 (2023): 183-197.

11. Dr. S. Suriya Uma Devi published a paper titled, “Finite element mechanism and quadratic regression of magnetized mixed convective Burgers' nanofluid flow with applying entropy generation along the riga surface” International Communications in Heat and Mass Transfer, Volume 142, 2023, 106631.
12. Dr. K. Karthikeyan published a paper titled, "New results on fractional relaxation integro differential equations with impulsive conditions" in Filomat 37, no. 17 (2023): 5775-5783.
13. Dr. M. Subramanian published a paper titled, "Post-Pandemic Sector-Based Investment Model Using Generalized Liouville–Caputo Type" *Symmetry* 15, no. 4: 789.
14. Ms.R.Jagadeeswari published a paper titled, “ Electrochemical, structural, optical, and morphological characteristics of Cu-loaded ZnO nanostructures synthesized from bio-waste (maize) using a green synthesis technique” in Digest Journal of Nanomaterials and Biostructures, Vol.18, No.1, in February 2023.
15. Ms.K.Sharmila published a paper titled, “The Impact of Interpersonal Communication on Employee Performance During Work from Home” in the International Journal of Humanities and Innovation, Vol 6, No.1, in March 2023.

## II. Faculty members as Resource Persons:

1. Dr. K. Janagi, AP(SL.G)/Mathematics, was invited to act as a resource person in a seminar on Advanced Engineering Mathematics organized by Narasu’s Sarathy Institute of Technology on 10 March 2023.
2. Dr. M. Myvizhi, AP(SL.G)/ Mathematics, was invited to act as a resource person for a webinar on the occasion of National PI Approximation day celebration at Sri Adi Chunchanagiri Women’s College, Cumbum on 14 March 2023.

## III. Notable achievements of the faculty members:

- Dr. Vijayalakshmi won in Tamil translation competition held on 13th and 14<sup>th</sup> February. The event was conducted by Anna University, Coimbatore, in which around sixty-five professors from various colleges in Tamil Nadu participated.



- Project of Dr. Saravanabhavan, Assistant Professor (SI.G), Department of Chemistry has been approved under Student Project Scheme on 4.3.2023 to receive funding from TNSCST.



- Dr.P.Suriyakumar has been recognized as supervisor by Anna University on 16<sup>th</sup> March 2023.

#### IV. Events organized:

- **Science Academies' Lecture Workshop on Engineering Mathematics:**

A two-day Science Academies' Lecture Workshop on Engineering Mathematics was conducted in the Department of Mathematics, KPR Institute of Engineering and Technology (KPRIET) on 4<sup>th</sup> and 5<sup>th</sup> January 2023.

The first session of the workshop was handled by Prof. G. D. Veerappa Gowda, FNASc., FASc., FNA, Centre for Applicable Mathematics, TIFR. He spoke on "Numerical Methods for hyperbolic conservation laws". He started with the basics of partial differential equations followed by numerical methods. Then he elaborated upon the numerical methods for hyperbolic PDEs.

The second session of the workshop was handled by Prof. P. Kandaswamy, FNASC., Bharathiar University. He gave an insight into the 'Mathematical Model for Human Immune System'. He delineated the role of the immunity system in curbing the amelioration of myriad viruses via biological and mathematical ways and also demonstrated the mathematical model behind the process. His lecture was thought provoking and praised by all.

The third session of the workshop was presided by Prof. G. D. Veerappa Gowda. He gave an outline of Finite difference, Finite Volume methods to solve partial differential equations and discussed about the advantages and disadvantages of each method.



The final session of the day was engaged by Prof. P. Kandaswamy. He pointed out the crucial role played by mathematics and its symbiotic relationship with nature, using interesting real-life applications.

The second day of the workshop started with an inspiring talk on Nonlinear Ordinary Differential Equations: Bifurcations and Chaos by Prof. M. Laxmanan of Bharathidasan University. Initially, he gave a clear introduction to nonlinear dynamics and then he presented an elaborate lecture about bifurcation and chaotic behavior of solutions of nonlinear ODE with examples. Participants asked their doubts and got them cleared.

The next session was engaged by Prof. S. Saravanan, Bharathiar University. His topic was Numerics for Navier-Stokes Equations: Finite Volume Method. Initially he pointed out the need of numerical solutions and he listed out various numerical methods. Then he explained the solution procedure of finite volume method for diffusion equation with some examples.

The third session was handled by Prof. M. Laxmanan. He gave a talk on Nonlinear partial differential equations: Solitons. He started with an introduction to linear dispersive PDEs and its solution by Fourier transform technique. Then he explained about KdV equation and its solitary wave solutions. At the end of his talk there was healthy exchange of ideas between the resource person and the participants. Prof. S. Saravanan continued his lecture in the last session. He gave a talk on how to solve the convection-diffusion equation by Finite Volume Method. He explained the various schemes for approximating the convective terms. The lectures delivered at the workshop motivated the participants to get involved in mathematical modelling of engineering problems.





- **One Day Workshop on “Essential Computing on Matlab:**

KPR Institute of Engineering and Technology organized a one-day workshop on “Essential Computing on MATLAB” on 18<sup>th</sup> January, 2023. Around 200 participants from colleges in and around Coimbatore attended the workshop. Dr. Paramanathan P, Assistant Professor, Department of Mathematics, Amrita Vishwa Vidyapeetham, Coimbatore campus was the key-note speaker. He highlighted the benefits of learning the basics of MATLAB. The session familiarized the gathering about the basics of MATLAB.

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Dr.K.Karthikeyan, HoD / Mathematics  
**Coordinators:**  
Dr.M.Myvishi, AP (Sl.G) / Maths  
Ms.M.Narmatha, AP / Maths



- **Seminar on Industrial Mathematics**

A seminar on Industrial Mathematics was conducted in the Department of Mathematics, KPR Institute of Engineering and Technology on 28 January 2023. The first session was handled by Prof. Hiroshi Yamaguchi, Energy conversion research centre, Department of Mechanical Engineering, Dhoshisha University, Kyoto, Japan. He explained the convection of magnetic fluids and the solution methods for associated partial differential equations.

Prof. Ardak Kashkynbayev, Department of Mathematics, Nazarbayev University, Nur Sultan city, Kazakhstan was the speaker of the second session. He gave a talk on mathematical biology and elaborated upon the spreading mechanism of virus through mathematical modelling. After the session, valuable inputs were given to increase publications in the field of Applied Mathematics.



- **Quiz Series**

The Department of Physics conducted “Quiz Series on Physics” on 30.1.2023.

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- **National Science Day**

The Department of Science and Humanities organized a seminar on the topic “Next Generation Wearable Devices” to commemorate National Science Day on 28.2.2023. Dr, R.T.Rajendra Kumar, Professor, Department of Nanoscience and Technology, Bharathiar University was the resource person.

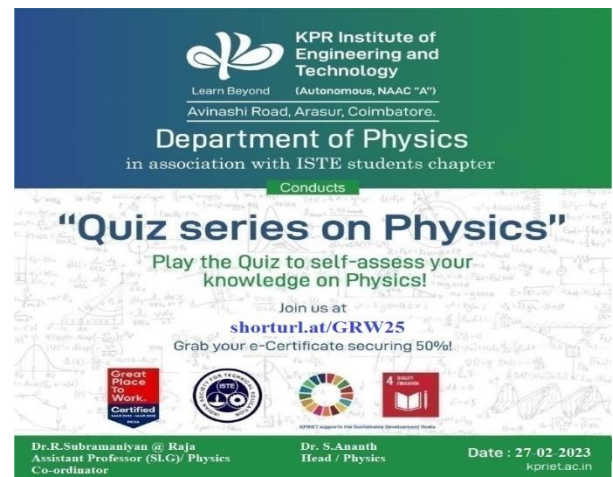


Competitions were organized as part of the National Science Day Celebrations and the first-year students participated in large numbers and proffered their valuable insights on the advancements of science and technology.



- **Quiz Series**

The Department of Physics conducted “Quiz Series on Physics” on 27.2.2023.



## V. Notable achievements of the students:

- Vallinayakam of I BME won 1st place in debate at IIT Palakkad conducted on 4.2.2022 and won cash prize of Rs.3000.



- Vaibhav Krishna and Deepak Kumar, students of first year AIML, presented their UG research paper work titled "Machine Learning Model for Posture Correction to Improve Overall Health and Wellness" in Sri Krishna College of Engineering and Technology on 22<sup>nd</sup> February 2023 and bagged the third prize.



- KPRIET throwball team participated in 12th Centies championship tournament organized by SNS College of Technology and bagged the 3rd prize on 23<sup>rd</sup> February 2023.





- KPRIET throwball team participated in Covai Ties tournament organized by Coimbatore Institute of Technology and secured the runners' position on 25<sup>th</sup> February.



- Mr. Bupesh Kumar of first year Chemical Engineering won 1st place in cadet, 2nd place in senior category and 3rd place in junior category of Judo championship, Coimbatore zone, held in Anupparpalayam high school on 26<sup>th</sup> February 2023.



- I CSE C & I EEE students bagged the first Prize in the project presentation of NERDNIA 2023, an “Intercollegiate National level Science fair on Functioning and Non-Functioning Models in Science Perception” organized by PPG Institute of Technology, Coimbatore on 28<sup>th</sup> February 2023.



- KPRIET football Men Team won Overall WINNER UP in CENTIES Tournament held at Nehru College on 05.03.2023 to 07.03.2023.
- KPRIET throwball team won in Mr. Mahalingam State Level Throwball Trophy Match organized by Kumaraguru College of Technology on 18<sup>th</sup> March 2023.

