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Learn Beyond

KPR Institute of
Engineering and
Technology

(Autonomous, Affiliated to Anna University)

DEPARTMENT OF PHYSICS

NEXUS



PHYSICS

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Highlights of the Quarter

Pedagogical Pulses

Elevating classroom engagement through dynamic learning strategies.

Across Frontiers

Applauding our student prize-winners while fostering innovation in faculty development.

5 Days online International Faculty Development Program on Innovations in Materials Science for Sustainable Technology Development

Date: 24 – 28 Aug 2026 **Venue:** Online mode **Attendance:** 100 participants

Resource person: (Day -1) Dr. Sarath Chandra Veerla, Professor & Dean -Faculty Training and Development, Department of Basic Sciences, SR University, Warangal, Telangana; (Day -2) Dr. Sanju Rani, Assistant Professor, Department of Physics, SRM IST, Chennai; (Day -3) Dr. Logu Thirumalaisamy, Former Newton International Fellow, Assistant Professor of Physics, GTN Arts College, Dindigul; (Day -4) Dr. Vinayakprasanna N. Hegde, Department of Physics, Vidyavardhaka College of Engineering, Gokulam, Mysuru, Karnataka; (Day -5) Dr. Arun Thirumurugan, Associate Professor, University of Atacama, Seda Vallenar, Chile

The 5-Day Online International Faculty Development Programme on “Innovations in Materials Science for Sustainable Technology Development” provided participants with a comprehensive understanding of recent advancements, emerging trends, and innovative approaches in materials science and their applications in sustainable technology. Participants gained insights into the role of innovative materials in addressing contemporary challenges related to renewable energy, energy storage, environmental protection, electronic and optoelectronic devices, and sustainable manufacturing. The sessions encouraged interdisciplinary learning and promoted the integration of materials science with engineering, physics, chemistry, nanotechnology, and emerging technologies. Overall, the FDP empowered participants to incorporate sustainability-oriented materials research and innovative teaching practices into their academic activities, develop collaborative research initiatives, and contribute effectively towards sustainable technology development and future-ready higher education.



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INSTITUTION'S INNOVATION COUNCIL
Promoting Innovation and Creativity

Department of Engineering Physics

International Faculty Development Program on
Innovations in Materials Science for Sustainable

Registration Fee: Rs.200/-

24.08.2026 to 28.08.2026
07.00 PM to 08.00 PM | Online Mode

kpriet.edu.in /KPRIETonline

Panel Experts



Dr. Sarath Chandra Veerla
Professor, Dean - Faculty Training and Development, Ph.D - Department of Basic Sciences, SR University, Warangal, Telangana



Dr. Sanju Rani
Assistant Professor
Department of Physics, SRM IST
Chennai



Dr. Logu Thirumalaisamy
Former Newton International Fellow
Assistant Professor of Physics
GTN Arts College, Dindigul



Dr. N. Vinayakprasanna
Department of Physics
Vidyavardhaka College of Engineering
Gokulam, Mysuru, Karnataka



Dr. Arun Thirumurugan
Associate Professor
University of Atacama, Sede Vallenar, Chile





Innovative Minds: Influential Voices

Date: 07 Aug 2026 **Venue:** Physics Lab-1 **Attendance:** 43 participants

Resource person: Dr. S. Sathyaseelan, Assistant Professor -III, Department of Language and Communication

The session enhanced faculty members' innovative thinking, creativity, effective communication, confidence, and leadership skills. Participants gained valuable insights into expressing ideas clearly, developing influential voices, and approaching challenges with a positive and innovative mindset. The interactive discussions encouraged faculties to think beyond conventional approaches, strengthen interpersonal abilities, and communicate their perspectives with greater clarity and confidence. Faculties were motivated to recognize the importance of effective communication in academic, professional, and personal settings. The session also encouraged them to develop a growth-oriented attitude, collaborate effectively, and transform creative ideas into meaningful actions. Overall, the programme provided practical perspectives that supported faculties' holistic development and motivated them to become confident communicators, creative thinkers, and responsible individuals who can contribute positively to society.

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**INSTITUTION'S INNOVATION COUNCIL**
(University of WEC Institute)

Department of Engineering Physics

Resource Person



Dr. T. Sathyaseelan
Assistant Professor (III)
Department of Language and Communication

Innovative Minds: Influential Voices

**07.08.2026 | 2.00 PM**
Venue: Physics Lab- II, Mythreyi Block

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SDG 4 • Quality Education

Innovation in Quantum Computing: Concepts to Implementation

Date: 24 Jul 2026 **Venue:** Physics Lab-1 **Attendance:** 43 participants

Resource person: Dr. K. Navamani, Associate Professor, Department of Physics

The session “Innovation in Quantum Computing: Concepts to Implementation”, delivered by Prof. Navamani on 24 July 2026, provided participants with an introductory understanding of the principles and emerging applications of quantum computing. The session helped students connect fundamental concepts such as qubits, superposition, entanglement, quantum gates and quantum circuits with their implementation in computing systems. Participants gained awareness of quantum algorithms, programming approaches and real-world applications, while also understanding the potential of quantum technologies in solving complex computational problems. The programme encouraged students to explore quantum computing as an emerging area for innovation, research and interdisciplinary projects. It also motivated them to move beyond theoretical learning and consider practical implementation and future career opportunities in quantum technology.



SDG 4 • Quality Education

Faculty: Publications and Recognitions

- Dr. J. Varuna served as JURY MEMBER for 1st Mentoring session of Young Environmental Scientist 2026 Program, at PSG College of Technology, Peelamedu, Coimbatore, 29 August 2026

- Subramaniyan Raja R et al. published "Experimental Growth and Computational Insights Into 2-aminopyridinium Hexafluorosilicate (2APHFS) Single Crystal for Advanced Material Applications" in Crystal Research and Technology (SCI, Q3), 14 August 2026
- Subramaniyan Raja R et al. published "Exploring the structural, theoretical and nonlinear optical parameters of 2-amino-4-picolinium 4-chlorobenzoate single crystals for nonlinear optical applications" in Journal of Materials Science: Materials in Electronics (SCI, Q2), 01 August 2026
- Subramaniyan Raja R et al. published "2-Aminopyridinium-based single crystals: a comprehensive review of synthesis, crystal engineering, physicochemical properties and photonic applications" in Chemical Papers (SCI, Q3), 14 July 2026

Student Achievements

Student(s)	Class	Achievement	Organiser
Delicia Imma A	I Year (AIML - A)	Special Mention in Tamil Oratorical Competition (Tamil Pechu)	Vellalar College of Engineering, Erode
Delicia Imma A	I Year (AIML - A)	Member of Winning Womens Throwball team (KPR Trophy-First Year Students)	KPR Institute of Engineering and Technology, Coimbatore
Lenin Carol	I Year (AIML - A)	Second Prize in Drawing (77th Geneva Conventions Day)	Indian Red Cross Society, Coimbatore
Delicia Imma A	I Year (AIML - A)	Fourth Prize in Tamil Oratorical Competition (77th Geneva Conventions Day)	Indian Red Cross Society, Coimbatore
Prathish P	I Year (ME)	1st Prize (swachhata hi seva arm wrestling championship by government of Tamil Nadu)	Coimbatore City Municipal Corporation

Students Corner

DELICIA IMMA A I Year (AIML - A)

Hacking Hat-trick



LENIN CAROL I Year (AIML - A)





Faculty Corner

DR. VINODHINI SUBRAMANIAM Assistant Professor-I

Water from Air: How MOFs Could Quench the Desert?

Imagine producing fresh water from the dry desert air! Metal-Organic Frameworks (MOFs) are making this remarkable possibility a reality. These highly porous materials can capture water vapour from the atmosphere and release it when gently heated, potentially using abundant solar energy. Researchers led by Nobel laureate Omar M. Yaghi at the University of California, Berkeley and Lawrence Berkeley National Laboratory have

demonstrated atmospheric water harvesting using MOFs such as MOF-801 and MOF-303. Importantly, these systems were tested outdoors in challenging environments, including the Arizona desert and Death Valley National Park, proving that MOF-based water harvesting can operate under natural fluctuations in temperature and humidity without relying on external electricity.

The technology has also progressed beyond laboratory demonstrations. MIT researchers developed and field-tested solar-powered MOF-based atmospheric water harvesters capable of producing potable water even at relative humidity below 10%, demonstrating their potential for extremely arid environments. Building on this research, Atoco, founded by Omar Yaghi, is advancing MOF-based atmospheric water harvesting toward larger-scale systems designed to produce hundreds to thousands of litres of water per day using solar energy and natural day-night temperature cycles. The global significance of MOFs was further highlighted when Susumu Kitagawa, Richard Robson, and Omar M. Yaghi received the 2025 Nobel Prize in Chemistry for the development of metal-organic frameworks. From desert air to drinking water, MOFs represent an exciting intersection of chemistry, materials science, and sustainable technology — and a promising new approach to tackling global water scarcity.



Watch / read more: <https://www.youtube.com/watch?v=-6T3ICXWqjc&t=15s>



BEYOND LOOP

Learn **Beyond.**

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Avinashi Road, Arasur, Coimbatore – 641 407

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