

Editorial

Navigating the Intersections of Physics Education and Innovation

Welcome to the first issue of Physics Education in 2025—a fresh beginning in our shared pursuit of nurturing minds, questioning assumptions, and unlocking the wonders of nature through the lens of physics.

As the discipline continues to grow in complexity and relevance, this journal embraces its role as a platform where educators and learners alike can explore the edges of knowledge and pedagogy. Our contributors this quarter exemplify this spirit of exploration, presenting articles that blend theoretical depth with practical teaching relevance:

Semi-Magic Numbers from Sub-shell Closures in Shell Model Energy Levels: Shikha Awasthi, O.S.K.S Sastri & Vandna Luthra

This article offers a compelling exploration of nuclear structure, illuminating how sub-shell closures lead to the emergence of semi-magic numbers. The findings not only expand theoretical physics but also offer fresh classroom narratives about nuclear stability and shell model symmetry.

Gravity in Undergraduate Thermal Physics Courses: Kartik Tiwari

Tiwari's contribution challenges conventional curriculum boundaries by integrating gravity into thermal physics discussions. By highlighting gravitational influence on thermodynamic systems—often overlooked at the undergraduate level—it opens pedagogical avenues that foster deeper interdisciplinary engagement.

SOL-GEL: A Simple Method of Thin Film Deposition and Nano-particle Growth: Sharmistha Lahiry

With lucid exposition and rich context, Lahiry brings the sol-gel technique into focus—a gateway to hands-on experimentation in materials science. The work strikes a balance

between theoretical grounding and experimental accessibility, making it especially valuable for physics educators venturing into nanoscience.

Some Applications of Lorentz Oscillator Model: Vishwamittar

This article revisits the Lorentz oscillator model with renewed vigor, detailing its applications in fields ranging from optics to quantum electronics. Its clarity and instructional value make it a standout resource for educators seeking to link historical models with contemporary insights.

Looking Beyond the Pages

As educators, researchers, and students continue to push boundaries and challenge norms, Physics Education is proud to offer a canvas for ideas that empower and enlighten. Whether you're in a classroom, a lab, or simply curious about the nature of things, this issue is an invitation to expand your horizons, question deeply, and teach boldly.

Let us make 2025 a year where physics doesn't just describe the universe—but helps us understand our place in it.

Prof. OSKS Sastri
Editor-in Chief
Physics Education (IAPT)