

ADVANCES IN CONTEMPORARY PHYSICS

HIGH-ENERGY, COSMOLOGY,
AND SOFT MATTER



Dr. Syed Salman Ahmad Warsi



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Dr. S. S. A. Warsi is an accomplished physicist and educator with a strong foundation in condensed-matter physics. As an Associate Professor in the Department of Physics at Integral University, he brings over two decade of academic and research experience to his role. Dr. Warsi has over 24 years of academic experience in teaching undergraduate and postgraduate students. He has actively guided numerous B.Sc. and M.Sc. students in their academic projects and dissertations. He is also engaged in the supervision of doctoral research scholars working toward their Ph.D. degrees in Physics. He has also co-authored notable educational books, including:

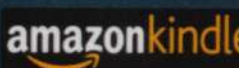
- ICSE Physics for Class X (2025)*
- ISC Practical Physics for Classes XI & XII (2021)*

Additionally, he has contributed numerous peer-reviewed papers and supervised several research scholars in cutting-edge topics like liquid-crystal systems and nanoscale materials.



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ABSTRACT

In recent decades, the field of physics has witnessed transformative advances across a wide spectrum of domains—from the extreme conditions of high-energy particle collisions to the vast evolution of the cosmos, and down to the nuanced properties of soft matter and quantum-scale phenomena. The present volume, *Advances in Contemporary Physics: High-Energy, Cosmology, and Soft Matter*, has been conceived as a multidisciplinary compilation that brings together diverse yet interconnected areas of cutting-edge research in physics.

This book comprises eight chapters, each of which delves into a specific theme representing an active frontier of contemporary scientific inquiry. Collectively, these chapters reflect the intellectual diversity and methodological richness of contemporary physics. By integrating high-energy phenomena, cosmological frameworks, soft matter behavior, and molecular-scale investigations, this volume aims to serve as a valuable reference for researchers, educators, and graduate students across multiple disciplines.