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Sommario/riassunto	This book presents the proceedings of the International Conference on "Advanced & Novel Technologies - Interdisciplinary Collaboration in Materials Science" (ANTICM 2025), held in Zaporizhzhia, Ukraine. It offers a comprehensive compilation of research papers highlighting the latest advancements and future trends in materials science and engineering. The field is pivotal in driving technological progress across industries such as aerospace, automotive, biomedical engineering, and renewable energy. As global demand for advanced and sustainable materials grows, this book addresses critical challenges by focusing on innovative and eco-friendly solutions. Key topics include metals and alloys, composite materials, nanomaterials,

and films and coatings, spanning theoretical perspectives, experimental research, and practical applications. Advances in lightweight alloys, surface engineering, and corrosion resistance are especially emphasized, reflecting their impact on sectors like automotive and aerospace. Modeling and simulation—ranging from computational methods to machine learning—play a central role in accelerating materials discovery and optimization, demonstrating the growing integration of computational and experimental approaches in the field. Sustainability is woven throughout the volume, with a strong emphasis on innovations that enhance material durability, corrosion resistance, and process efficiency. The book showcases eco-friendly approaches and advanced technologies designed to extend the lifespan of modern materials, supporting industrial progress while addressing environmental challenges. This volume captures the interdisciplinary and dynamic landscape of modern materials science, emphasizing the synergy between advanced characterization, modeling, and the development of sustainable, high-performance materials for real-world applications.

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