

Pressemitteilung

Deutsche Gesellschaft für Materialkunde e.V.

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MaterialsWeek 2025: Bridging Academia and Industry in Materials Science

The upcoming MaterialsWeek 2025 conference, scheduled for April 2-4 in Frankfurt am Main, Germany, serves as a pivotal platform uniting academia and industry to explore the latest advancements in materials science. This hybrid event will address six critical themes that are shaping the future of the discipline.

Digitalization of Materials:

This theme delves into the integration of virtual design, artificial intelligence (AI), and Industry 4.0 within materials science. The focus is on how digital tools and AI can revolutionize material design and manufacturing processes, leading to more efficient and innovative solutions. For instance, AI has been instrumental in discovering new materials, as demonstrated by Google's DeepMind, which identified over 2 million new crystals using deep learning techniques.

Green Materials Revolution:

Addressing the urgent need for sustainability, this topic explores strategies for developing materials that support a closed-loop circular economy. Discussions will center on reducing environmental impact through sustainable material design and recycling practices. The integration of AI in this field is exemplified by initiatives like the U.S. Commerce Department's plan to award \$100 million to boost AI use in developing sustainable semiconductor materials.

Material Innovations as Drivers of Technological Progress:

This area highlights the role of advanced materials in technological advancements, covering developments from cutting-edge battery technologies to adaptive smart materials that respond to environmental changes. The convergence of AI and materials science is revolutionizing this sector, enabling the design of materials with unprecedented properties.

From Microstructure to Macro Product:

Focusing on the relationship between material microstructures and their macroscopic properties, this theme examines recent advances in materials development and characterization techniques that bridge the gap from laboratory research to real-world applications. The use of AI in analyzing microstructural data is enhancing our understanding of material behaviors, leading to more reliable and efficient products.

Ensuring Safety and Reliability:

This topic emphasizes modern approaches to material testing and analysis, ensuring that new materials meet stringent safety and reliability standards essential for their successful implementation in various industries. AI-driven predictive models are increasingly being utilized to assess material performance under various conditions, thereby enhancing safety protocols.

Multidisciplinary Lightweight Design:

Exploring innovations and challenges in lightweight material design across sectors such as aerospace, automotive, and construction, this theme addresses the demand for materials that offer strength without added weight, contributing to

energy efficiency and performance. AI and machine learning are being employed to optimize material compositions and structures, facilitating the development of lightweight yet durable materials.

In conjunction with MaterialsWeek 2025, the SteelInnovation conference will also take place, focusing on the latest advancements and innovative applications in steel technology. This event provides a unique opportunity for professionals to engage with cutting-edge developments in steel materials, fostering collaboration and knowledge exchange between sectors.

MaterialsWeek 2025, alongside SteelInnovation, is not just another conference; it's a collaborative space where knowledge is shared, ideas are sparked, and the groundwork is laid for the next wave of technological and industrial innovation. By fostering interdisciplinary collaboration and knowledge exchange, these conferences aim to drive progress in materials science and its applications across various industries.

The alongside exhibition provides an exceptional platform for companies and research projects to showcase their innovations, expertise, and unique contributions to the field. With dedicated booth spaces, participants have the opportunity to engage directly with a diverse audience of industry professionals, researchers, and decision-makers. This setting fosters meaningful interactions, enabling exhibitors to demonstrate their cutting-edge technologies, share insights, and establish valuable connections. Whether launching a new product, highlighting groundbreaking research, or expanding networks, the exhibition offers a dynamic environment to position your organization as a key player in the materials science and technology community.

wissenschaftliche Ansprechpartner:

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URL zur Pressemitteilung: https://materialsweek.net?utm_campaign=idw-mw



MaterialsWeek 2025 - Industry Meets Science



An exhibition offers companies and research projects the chance to present themselves