

Press Release

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Dr. James P. Best awarded with Georg Sachs Prize 2023

The German Society for Materials Science honours his contributions in enhancing structural and functional materials

The German Society for Materials Science (DGM) awards the Georg Sachs Prize 2023 to Dr. James P. Best, head of the "Mechanics at Chemical Interfaces" group at the Max-Planck-Institut für Eisenforschung (MPIE). This prestigious award acknowledges his contributions to enhancing structural and functional materials by understanding how the local chemical composition of alloys influences their microstructure and mechanical behaviour.

"It's an honour to receive this recognition from the DGM, and I'm grateful to the community for acknowledging my work, realised in valuable partnership with my students and collaborators", says Best. With a keen focus on micro- and nanometre-scale materials testing, he utilises state-of-the-art electron microscopes to observe material behaviour during deformation. Best's recent work has concentrated on zirconium-based metallic glasses fabricated through additive manufacturing. These glasses exhibit remarkable properties like high strength, elasticity, and corrosion resistance, making them ideal for structural materials applications like medical implants, gears and electric motor parts. His current work focusses on interrelations between chemical composition at grain boundaries and mechanical response, for functional metals such as copper and tungsten containing impurity elements.

"We are delighted to have James on board as the recipient of the esteemed Georg Sachs Prize. His exceptional skills in utilising high-energy X-ray diffraction, electron microscopy, and miniaturised mechanics allow him to unravel the intricate connections between material structure, chemistry, and mechanics, paving the way for practical applications. Beyond his scientific expertise, James possesses an admirable personality, staying calm during intense situations and fostering a collaborative team spirit", highlights Prof. Gerhard Dehm, director of the department "Structure and Nano-/Micromechanics of Materials" at MPIE.

Best obtained his doctorate in chemical engineering at the University of Melbourne (Australia), followed by postdoctoral positions at the Swiss Federal Laboratories for Materials Testing and Research (EMPA) in Thun, and the University of New South Wales (Australia) where he initiated his research on additively manufactured metallic glasses.

The Georg Sachs Prize, jointly offered by "Stifterverband Metalle e.V." and "Fachverband der Nichteisen-Metallindustrie of Austria," has been recognizing outstanding scientists since 1967. It honours young scientists who achieved groundbreaking results in materials science and engineering and is awarded once a year if a suitable scientist is found.



Dr. James P. Best is head of the group "Mechanics at Chemical Interfaces" at the Max-Planck-Institut für Eisenforschung and was awarded with the Georg Sachs Prize 2023 by the German Society for Materials Science. Copyright: Max-Planck-Institut für Eisenforschung GmbH

The international team of the Max-Planck-Institut für Eisenforschung conducts advanced basic materials research for the fields of mobility, energy, infrastructure, medicine and digitalisation. The focus lies on nanostructured metallic materials as well as semiconductors, which are analysed down to their atomic and electronic scales. This enables the MPIE team to develop new, tailor-made structural and functional materials embracing their synthesis and processing, characterization and properties, as well as their response in engineering components exposed to real operating environments.

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