

The 2023 Cahn Prize Finalists

December 2023

Production of high-aspect-ratio boron nitride nanosheets via oxygen doping and exfoliation by micro fluidization

Bie Y, Miyase T, Arao Y

J Mater Sci 58 (2023) 17512-17526

<https://doi.org/10.1007/s10853-023-09146-3>

<https://rdcu.be/dwjbb>

November 2023

Residual stress analysis in industrial parts: a comprehensive comparison of XRD methods

Sarmast A, Schubnell J, Preußner J, Hinterstein M, Carl E

J Mater Sci 58 (2023) 16905-16929 Open Access

<https://doi.org/10.1007/s10853-023-09069-z>

<https://rdcu.be/dvbfC>

October 2023

The suitability of common reed (*Phragmites australis*) for load-bearing structural materials

Kaspar Albrecht, Felix Neudecker, Stefan Veigel, Sabine Bodner, Jozef Keckes & Wolfgang Gindl-Altmatter

J Mater Sci 58 (2023) 15411-15420 Open Access

<https://doi.org/10.1007/s10853-023-08996-1>

<https://rdcu.be/du5PV>

September 2023

Molecular modelling of graphene nanoribbons on the effect of porosity and oxidation on the mechanical and thermal properties

Carlos Sáenz Ezquerro, Manuel Laspalas, José Manuel García Aznar, Susana Castelar Ariza & Agustín Chiminelli

J Mater Sci 58 (2023) 13295-13316 Open Access

<https://doi.org/10.1007/s10853-023-08810-y>

<https://rdcu.be/du5PL>

August 2023

Preparation and properties of bulk ZnO/MoS₂ nanocomposite by cold sintering process with three-component solvent

Kaveh Rahimi Mamaghani & Nader Parvin

J Mater Sci 58 (2023) 12182-12201

<https://doi.org/10.1007/s10853-023-08787-8>

<https://rdcu.be/du5Pu>

July 2023

Effect of Hf on the lattice invariant shear and self-accommodation of martensite in Ti–Ni–Hf alloys

M. Matsuda, N. Maeda, K. Onaka, H. Akamine & M. Nishida

J Mater Sci 58 (2023) 10896-10910

<https://doi.org/10.1007/s10853-023-08707-w>

<https://rdcu.be/du5Ps>

June 2023

Dislocation and strain mapping in metamorphic parabolic-graded InGaAs buffers on GaAs

Nicholas Stephen, Praveen Kumar, Agnieszka Gocalinska, Enrica Mura, Demie Kepaptsoglou, Quentin Ramasse,

Emanuele Pelucchi & Miryam Arredondo

J Mater Sci 58 (2023) 9547-9561. Open Access

<https://doi.org/10.1007/s10853-023-08597-y>

<https://rdcu.be/du5Pp>

May 2023

[Compressive strength of copper yarn/Kevlar yarn 3D woven spacer hybrid composites and its application for multifunctional composite antennas](#)

Kun Zhang, Liangang Zheng & Fujun Xu

J Mater Sci 58 (2023) 7303-7318

<https://doi.org/10.1007/s10853-023-08476-6>

<https://rdcu.be/du5O6>

April 2023

[Nature-inspired wood-based solar evaporation system for efficient desalination and water purification](#)

Mengnan Qu, Jufeng Yan, Jianwei Ge, Yue Zhao, Yuyu Xue, Xiaofeng Liu, Hui Liu, Min Yan & Jinmei He

J Mater Sci 58 (2023) 6220-6236

<https://doi.org/10.1007/s10853-023-08420-8>

<https://rdcu.be/du5O4>

March 2023

[Can Synbone® cylinders and deer femurs reproduce ballistic fracture patterns observed in human long bones?](#)

Nathalie Schwab, Xavier Jordana, Joan Soler, Xavier Garrido, Pedro Brillas, Andrés Savio, Santiago Lavín, Marisa Ortega-Sánchez & Ignasi Galtés

J Mater Sci 58 (2023) 4970-4986 Open Access

<https://doi.org/10.1007/s10853-023-08333-6>

<https://rdcu.be/du5OZ>

February 2023

[Dislocation-based high-temperature plasticity of polycrystalline perovskite SrTiO₃](#)

Lukas Porz, Michael Scherer, Marion Höfling, Atsutomo Nakamura, Wolfgang Rheinheimer & Jürgen Rödel

J Mater Sci 58 (2023) 2430-2438 Open Access

<https://doi.org/10.1007/s10853-022-07405-3>

<https://rdcu.be/du5OF>

January 2023

[Interlocking metasurfaces](#)

Ophelia Bolmin, Benjamin Young, Nicholas Leathe, Philip J. Noell & Brad L. Boyce

J Mater Sci 58 (2023) 411-419 Open Access

<https://doi.org/10.1007/s10853-022-08015-9>

<https://rdcu.be/du5OB>