

## 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/MoS<sub>2</sub> 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 SrTiO<sub>3</sub>](#)

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>