

Environmental Science: Atmospheres

GOLD
OPEN
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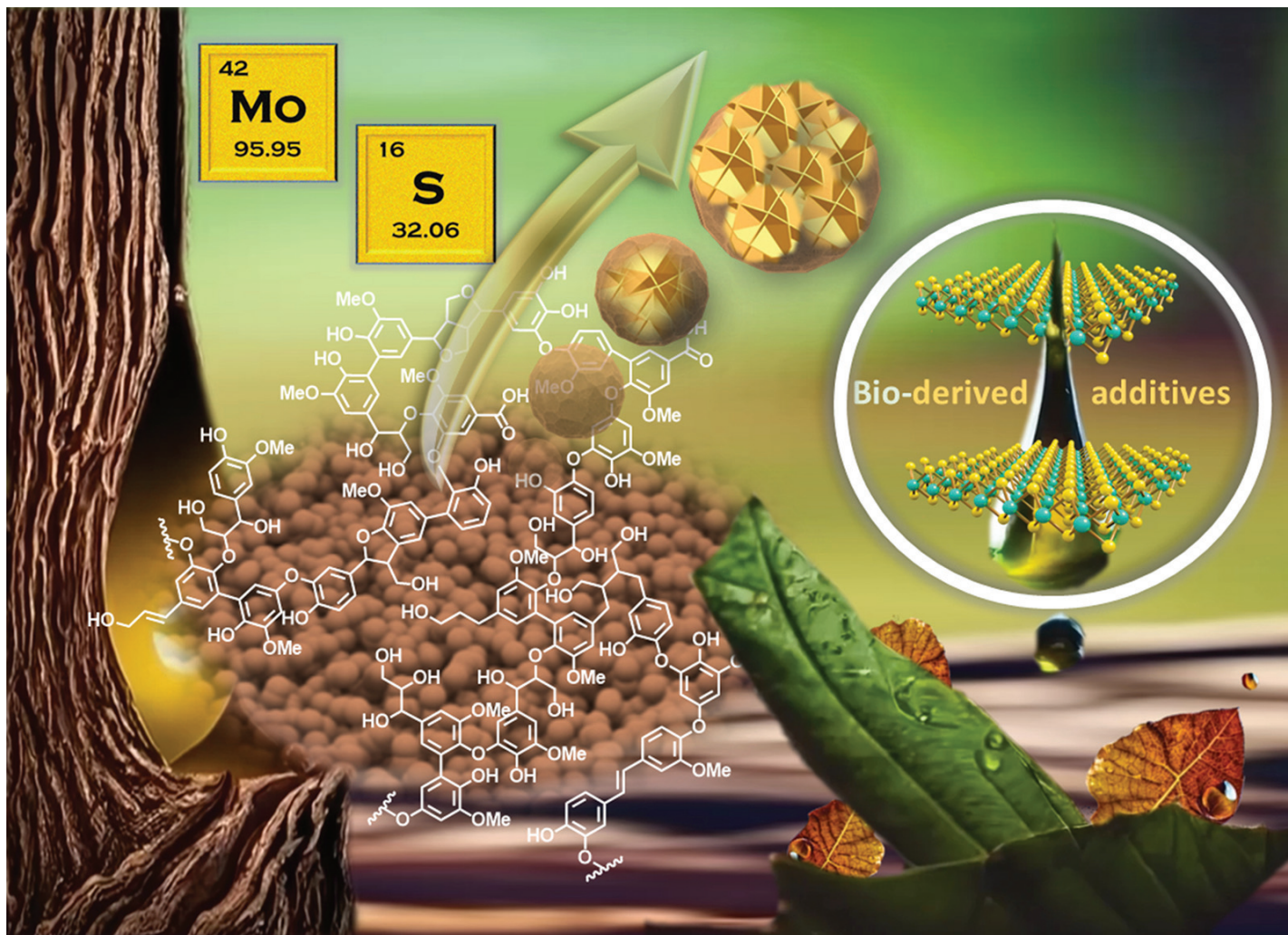
Connecting communities
and inspiring new ideas

APCs waived until mid-2023

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Fundamental questions
Elemental answers

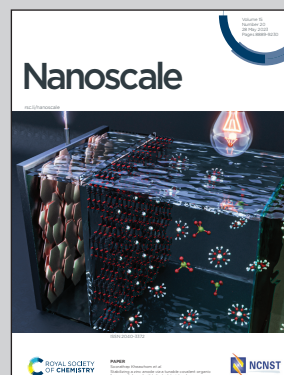


Showcasing research from Dr. Bruno Manzolli Rodrigues and Prof. Adam Slabon from Slabon Group at Bergische Universität Wuppertal, Wuppertal, Germany.

MoS₂ nanoflower-decorated lignin nanoparticles for superior lubricant properties

A bio-derived additive for superior tribological performances was successfully developed by combining the lubricant performance of molybdenum disulfide (MoS₂) and the structural stability of biomass-based nanoparticles. This innovative hybrid inorganic material consists of MoS₂ nanoflowers grown *via* a hydrothermal process, using hydroxymethylated lignin nanoparticles as a substrate. By reducing wear volume by up to 71% in tribological tests, the incorporation of this hybrid material as a bio-derived additive opens a window of possibilities for a new class of biobased lubricants.

As featured in:



See Bruno V. M. Rodrigues *et al.*, *Nanoscale*, 2023, **15**, 9014.