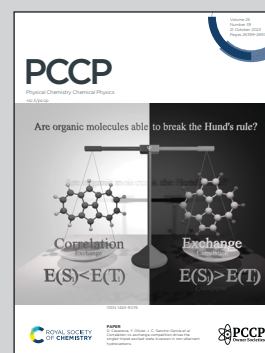


Showcasing research from the Zhai group at Nanocluster Laboratory, Shanxi University, China

Boron-based Pd_3B_{26} alloy cluster as a nanoscale antifriction bearing system: tubular core-shell structure, double π/σ aromaticity, and dynamic structural fluxionality

Boron clusters represent a magic system for novel chemical bonding and dynamic structural fluxionality. A binary Pd_3B_{26} cluster is shown herein to be composed of a triangular Pd_3 core and a tubular B_{26} double-ring in core-shell geometry. Only one pair of electrons are primarily responsible for chemical bonding between the tube and the core, which give rise to virtually barrier-free intramolecular rotation. The cluster mimics an antifriction bearing system, albeit at the subnanoscale.

As featured in:



See Hua-Jin Zhai *et al.*,
Phys. Chem. Chem. Phys.,
2023, **25**, 26443.