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Amino Acids Interaction with Boron Nitride Nanomaterials

KEVIN WATERS, RAVINDRA PANDEY, Michigan Technological University, SHASHI KARNA, US Army Research Laboratory — Stability and electronic properties of bioconjugated BN nanostructures are investigated. The biomolecules considered are amino acids ranging from monomers to peptides, and the low-dimensional BN nanostructures are monolayer and tubular configurations. Specifically, we examine the role of an aqueous background in stabilizing such bioconjugated nanostructures by employing the continuum solvent model. It is expected that the calculated results will provide guidance for selective sensing of biomolecules by the next generation nanomaterials.

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