

**HIGHLIGHTS AND BREAKTHROUGHS**  
**At the blurry edge of mineralogy**

**PETER J. HEANEY<sup>1,\*</sup>**

<sup>1</sup>Department of Geosciences, Penn State University, University Park, Pennsylvania 16802, U.S.A.

**Abstract:** Nanominerals are characterized by crystal dimensions that fall between 100 and 1 nm, and as the length scale of atomic ordering approaches the lower end of this range, a material's physical and chemical properties may dramatically diverge from what is observed at the macroscale. Indeed, when atomic correlation lengths approximate the dimensions of the unit-cell, one can reasonably ask whether a natural material should be classified as a mineral at all. In their Outlook contribution, Caraballo et al. (2014) offer a state-of-the-art assessment of the science of environmental nanominerals, with an emphasis on the role that crystallinity plays in their behavior. **Keywords:** Nanomineralogy, crystallinity, classification, nomenclature