Approaches to Uncertainty in Nanomaterials

One of our greatest assets in nanoscience, the largely unexplored nanoscale world that we are trying to understand, is also perhaps the biggest hindrance to the application of nanomaterials to the macroscopic world. We need to understand the impact of these nanomaterials on us and on the world around us. Greater understanding of the key aspects of these materials and their roles, better characterization methods, and narrower variations will all make applications both easier and safer. In this issue, Prof. James Hutchison of the University of Oregon discusses these concerns and makes forward-looking suggestions of how to apply green chemistry principles to nanomaterials.[1] Indeed, many challenges remain to understanding the impact of the great diversity of materials, particularly given our still nascent ability to characterize disperse samples, with varying impurities. As Prof. Hutchison points out, by taking these issues into account in syntheses, purification, and measurements, much progress can be made now. Waste and risk can be greatly reduced. By directing research into key areas of environmental health and safety, we can and will make substantial progress. We anticipate that this discussion will help lead to a thoughtful approach to these issues as well as further commentary on these topics. We hope to guide both areas of research by highlighting challenges and policy by publishing informed, current opinions along with subsequent perspectives.

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On these pages, we will try to accelerate these discussions by encouraging and publishing the approaches that will ultimately resolve the issues and surmount the challenges. We are proud to include synthesis, characterization, toxicology, and related topics within the scope of *ACS Nano* and to publish the top comprehensive articles as well as opinions in the field.[1–7] We look forward to advances in this exciting field and to hearing from you!

If you are first reading this issue at the 235th ACS National Meeting and Exposition in New Orleans, we hope that you are enjoying the presentations on these topics that are part of the "Energy and the Environment" theme of the meeting!

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