USDA Perspectives
on
Nanotechnology and the Environment: Applications and Implications

Hongda Chen, Ph.D.
National Program Leader, Bioprocessing Engineering
Cooperative State Research, Education, and Extension Services (CSREES)
U.S. Department of Agriculture (USDA)

A. How does your agency view its research agenda as it relates to the environment?

The CSREES mission statement is “to advance knowledge for agriculture, the environment, human health and well being, and communities”. The environment is a central piece of our mission. Agriculture and food systems influence the environment and are influenced by the quality of the environments. Improving environmental quality is among the six priority of the CSREES research agenda.

B. Can the research be applied to an environmental problem or possibly prevent an environmental problem?

The CSREES have sponsored a number of research projects addressing the issues at the intersection of nanotechnology and the environment. Two excellent projects, one dealing with the potential environmental impact of using a novel food safety technology, while another understanding the effects of environmental variables on the well-being of plants, will be presented in this workshop. In a recent survey, we identified 26 projects that directly impact environmental quality including soils and their remediation, air quality, and plant physiology.

C. Might the research cause an environmental problem?

Any research and technology development should be carefully evaluated for its benefits and potential risk. The knowledge gained should be honestly communicated to the public and end users so they can make an informed decision. History told us many lessons of the consequence of failed conducts in both fronts. Nanotechnology research must take proactive approach to assure the utmost benefits and the minimal risk to the society and the environment of the development of novel technologies and materials.