



ANSI-NSP Priority Recommendations Related to Nanotechnology Standardization Needs

This document contains priority recommendations for nanotechnology standardization needs. It is the result of the work of the ANSI-Nanotechnology Standards Panel (ANSI-NSP). Detailed background material including reports, presentations and an Executive Summary is provided in separate attached documents.

Part I – Broad Standardization Topics

Of the six *Broad Topics* that were considered, the following four areas were deemed to be most urgent within a 0-1 year timeframe:

- General terminology for nanoscience and technology
- Systematic terminology for materials composition and features
- Toxicity effects/environmental impact/risk assessment
- Metrology/Methods of analysis/standards test methods

Manufacturing and Processing as well as *Modeling and Simulation* were not considered to be standardization areas of similar urgency and were given time-frames of 3-5 years.

Part II – Specific Standardization Topics

Group 1 - Systematic terminology for materials composition and features

The top 3 items deemed “most important” are:

1. Composition
2. Morphology
3. Size

The 4 items deemed of middle importance are:

1. Crystallinity
2. Physical descriptions
3. Surface chemistry
4. Wet and dry synergies

The 4 items deemed of lowest importance at this time are:

1. Applications of material

2. Function of material
3. Incorporation of existing nanomaterials terminology
4. System open to add-ons and flexibility

Group 2 - General terminology for nanoscience and technology

The 3 items considered, listed in order of importance are:

1. Definition of the term “nano”
2. Consideration of impact on intellectual property/other issues
3. Sensitivity to existing conventions

Group 3 Metrology/Methods of analysis/standards test methods

The top 2 items deemed “most important” are:

1. Particle size and shape
2. Particle Number and distribution

The item deemed of middle importance is:

Particle Mass

The 4 items deemed of lowest importance at this time are:

1. Electrical and electronic measurements
2. Mechanical measurements
3. Optical Measurements

Group 4 Toxicity effects/environmental impact/risk assessment

The top 3 items deemed “most important” are:

1. Environmental health and safety
2. Reference standards for testing, controls
3. Testing methods for toxicity

Group 5 Manufacturing and processes

The top 3 items deemed “most important” are:

1. Reference standards for testing, controls
2. Methods of synthesis
3. Product consistency standards