International Workshop on Documentary Standards for Measurement and Characterization in Nanotechnologies

Workshop Programme

Tuesday, Feb. 26, 2008

9:00	**Registration starts**
10:00 am	**Welcome and Introduction to NIST** Mary Saunders (NIST) – Workshop Chair
10:10 am	**Participant Introductions** All
10:30 am	**Workshop expectations and partners' motivation** Tom Chapin (IEC) Peter Hatto (ISO) Rich Kayser (NIST) Jim Willis (OECD)
11:00 am	**Setting the scene** *Facilitator: Mary Saunders* Presentations from**: ASTM: E42, E56 IEC TC:113 IEEE-Nanoelectronic Standards Roadmap (NESR) SEMI VAMAS
12:30 pm	Lunch
1:30 pm	**Setting the scene presentations (contd.)** ISO TCs: 24/SC4, 146, 201, 202, 209, 213, 229, ISO REMCO OECD-Working Party on Manufactured Nanomaterials (WPMN) – SG3, SG4, SG7 and SG8
3:15 pm	Break
3.30 pm	**Moderated discussion:** *The development of documentary standards for the measurement and characterization of nanotechnologies - Metrology needs and gaps: perspectives from national metrology institutes*** *Facilitator: Alan Steele (NRCC, Canada)*

* To be confirmed

** See appendix for standards development committee and international metrology laboratory listing

5.00 pm **Review of information from scene setting presentations**

5:30 pm Adjourn

Wednesday, Feb. 27, 2008

9:00 am **Day 1 recap**
Mary Saunders

9:05 am **Instructions for break-out session 1**

9:10 am **Breakout session 1:**
Identifying Documentary Standards Needs: Fundamental property characterization (e.g., physical, chemical and structural)
Four smaller groups addressing the same issue
(Group members will be pre-selected to ensure a mix of participants in each group)
Facilitators:
Kamal Hossain (NPL, UK)
*Harald Bosse (PTB, Germany) and Aritoshi Sugimoto (IEC/TC 113)**
Alan Rawle (ASTM E56)
Peter Hatto (ISO/TC 229)

10:30 am Break

10:45 am **Breakout session 1 (contd.)**

12:00 pm Lunch

1:00 pm **Outcomes from breakout session 1**
Brief (5-7 minute) presentations from facilitators highlighting needs identified by break-out groups
Facilitator: Mary Saunders

1:30 pm **Breakout sessions 2 to 5:**
Identifying Documentary Standards Needs: Nanomaterials in:

2. Human health and medicine: *Scott McNeil (ASTM E56 and NIH, USA) and Laurie Locascio (NIST, USA)*
3. Environment: *OECD**
4. Electronics IEEE/SEMI: *Jonathan Tucker (IEEE)*, Evelyn Hirt (IEEE) and Robert Scace (SEMI)*
5. Materials applications: *Steve Freiman (VAMAS) and Shingo Ichimura (ISO/TC 229)*

Breakout sessions will be structured based on how participants prioritize interests in these sessions

3:30 pm Break

3:45 pm **Breakout sessions 2 to 5 (contd.)**

5:00 pm Adjourn

* To be confirmed

** See appendix for standards development committee and international metrology laboratory listing

Thursday, Feb. 28, 2008

9:00 am	**Reports from facilitators of breakout sessions 2-5** (10 minute presentation + 10 minute discussions for each) *Facilitator: Mary Saunders*
10:15 am	Break
10:30 am	**Prioritization of identified needs and means to achieve these** *Facilitators: Peter Hatto and Ajit Jilla (NIST)*
12:00 pm	Lunch
1:00 pm	**Identifying mechanisms for cooperation and coordination** *Facilitator: Mary Saunders* *Introductions by George Arnold (ISO VP-Policy) (general issues) and Daniele Gerundino (ISO) (existing mechanisms)*
2.00 pm	**Summary, action items and next steps** Mary Saunders
2:30 pm	Adjourn

* To be confirmed

** See appendix for standards development committee and international metrology laboratory listing

Appendix

ASTM E42: Surface Analysis
ASTM E56: Nanotechnology
IEC TC113: Nanotechnology standardization for electrical and electronic products and systems
ISO TC24/SC4: Sizing methods other than sieving
ISO TC 146: Air quality
ISO TC201: Surface chemical analysis
ISO TC202: Microbeam analysis
ISO TC209: Cleanrooms and associated controlled enviornments
ISO TC213: Dimensional and geometrical product specifications and verifications
ISO TC229: Nanotechnologies
ISO REMCO: Committee for Reference Materials
OECD WPMN SG3: Safety Testing of a Representative Set of Manufactured Nanomaterials
OECD WPMN SG4: Manufactured Nanomaterials and Test Guidelines
OECD WPMN SG7: The Role of Alternative Methods in Nano Toxicology
OECD WPMN SG8: Exposure Measurement and Exposure Mitigation

Participating metrology laboratories:

Canada: National Research Council of Canada (NRCC)
China: National Metrology Institute of China (NIMC)
France: Laboratoire National de Metrologie et D'Essais (LNE)
Germany: Physikalisch-Technische Bundesanstalt (PTB)
India: National Physical Laboratory (NPL)
Japan: National Institute of Advanced Industrial Science and Technology (AIST)
Korea: Korea Research Institute of Standards and Science (KRISS)
South Africa: National Metrology Institute (NMISA)
Taiwan: Industrial Technology Research Institute (ITRI)
UK: National Physical Laboratory (NPL)
USA: National Institute of Standards and Technology (NIST)

* To be confirmed
** See appendix for standards development committee and international metrology laboratory listing