HEAD OF DELEGATION (HoD) REPORT

U.S. Member Body of the International Organization for Standardization (ISO)

U.S. National Committee of the International Electrotechnical Commission (IEC)

Please return this report within one month of the completion of the international meeting and submit it to the appropriate ANSI Department as follows:

ISO	**USNC**
ISOT@ansi.org	**USNC@ansi.org**

HoD reports can be used for a variety of purposes. For example:

- **To report results of a TC/SC meeting to the related TAG**
- **To publicize the work of the TC/SC to the related US constituency via ANSI On-line, USNC News and Notes, or other media**
- **To suggest areas for possible development of featured articles**
- **To address specific challenges and concerns that the HoD may bring to the attention of related ANSI and/or USNC/IEC management**

PLEASE REMEMBER: Your HoD report is NOT filed as a confidential, password protected document and, therefore, may have broad, unintended distribution. Keep this in mind when preparing the report and, if appropriate, use a more secure form of correspondence to call attention to any sensitive issues.

Completed by:

Head of Delegation: (Please print)	**Evelyn Hirt**
Telephone/Telefax:	**(509) 375-4425**
Email:	**evelyn.hirt@pnnl.org**
Date:	**2016-10-25**

Meeting of IEC TC 113, Nanotechnology Standardization for Electrical and Electronic Products and Systems
Date(s) 2016-10-15
Location Frankfurt, Germany

1. MEETING ATTENDANCE

Please indicate, if available, both the number of delegates and the countries represented at the Meeting:

25 delegates attended, 7 countries represented (CA, CN, DE, IT, JP, KR, US)

_X_ Meeting attendance roster and meeting resolutions attached, if available

Minutes TC 113
2016-10-15 Frankfurt

See annex for meeting resolutions

Please comment on significant or unusual attendance issues (e.g., new member bodies, regular members not in attendance, new Chairman or Secretariat, non-accredited U.S. persons, etc.).

Italy was represented at a plenary meeting for the first time. This was the first meeting for new TC 113 Chair Akira Ono (JP). TC 113 Secretary Norbert Fabricius was unable to attend the plenary meeting due to hospitalization. Gerd Weking (DE) served as acting Secretary.

MEETING OBSERVATIONS

2. Overall, how well did the U.S. meet its objectives on policy or technical matters?

X Very Successful -- U.S. positions were accepted in whole
__ Successful -- Compromises were reached which are acceptable to the U.S.
__ Not Successful -- U.S. positions were not accepted

3. Please comment on any issues of significance which might have an impact upon materially affected or interested U.S. parties.

None

4. Was there any discussion for which the United States was unprepared? (e.g., late document distribution, addition of new items, etc.)

None

5. Did the U.S. extend an offer to assume any new TC/SC Secretariat or management positions?

__ Yes _X_ No
(If yes, please indicate which position and provide Officer contact information.)

6. Did the U.S. extend an offer to host any future TC/SC meetings?

_X_ Yes __ No
If yes, please identify:
The US will host the spring 2018 TC 113 WG meetings, location TBD

7. Were any new issues raised which require, or might involve, coordination with other U.S. bodies? (Include coordination items with other U.S. TAGs, ANSI policy-level committees (AIF, AIC, the USNC TMC and/or Council, etc.)
__ Yes _X_ No **If yes, please identify:**
8. Did the U.S. put forth/agree to put forth any New Work Items?
_X_ Yes __ No **If yes, please identify:** **TC 113 established new PWIs for detail specifications for mono-layer and bi-layer graphene to be led by the US**
9. Was there any evidence of irregular voting by participating countries?
__ Yes _X_ No **If yes, please identify any significant issues or concerns:**
10. Are work items in the TC or SC being affected by related work in regional standards bodies (e.g., CEN, CENELEC, ETSI, PASC, NAFTA, COPANT, etc.)?
_X_ Yes __ No **__ No related regional activity** **If yes, please explain:** **TC 113 has benefited from the pre-standards work carried out by the EU Graphene Flagship within CENELEC and is seeking additional similar collaborative arrangements with other regional bodies**
11. Were any new issues raised which require, or might involve, coordination with emerging market countries?
Yes _X_ No **If yes, please explain:**
12. Were any issues raised which relate to or impact existing U.S. regulatory matters?
__ Yes _X_ No **If yes, please explain:**
13. Please identify any IMMEDIATE U.S. TAG actions which will be required as a result of this international meeting.
None
14. Please identify specific decisions which the U.S. delegation believes to be noteworthy for publication, publicity and/or development of a future article. If there are any, would you be willing to help develop an article for publication?

	__ Yes _X_ No
15.	**What might be done to further promote the ANSI Federation's goal of "global standards that reflect U.S. interests?" (Consider such issues as how might the U.S. further promote acceptance of related American National Standards in international and, where applicable, regional fora?)**
	No comments at this time. The work of TC 113 is very much global in nature and sufficiently reflects U.S. interests.
16.	**Has this report been provided to your TAG Administrator for US TAG distribution?**
	_X_ Yes __ No
17.	**Other Comments**
	During the meeting, TC 113 Chair Ono thanked Mike Leibowitz for drafting the meeting resolutions. Following the meeting, TC 113 Chair Ono personally thanked this writer for participating in the plenary. **In 2017, The TAG will be looking to revamp its membership to better align its experts with work taking place in the TC 113 WG structure.**

October 2016

Annex

Resolutions from the 11th Plenary Meeting of IEC/TC 113
15 October 2016 in Frankfurt, Germany

Resolution 11-01: TC 113 approves the agenda recorded in 113/321A/DA.

Resolution 11-02: TC 113 approves the minutes of its 10th plenary meeting held on 23 October 2015 in Seoul, as recorded in 113/304/RM.

Resolution 11-03: TC 113 resolves to encourage the Chairs of IEC/TC 113 and ISO/TC 229 to continue dialogue toward improving the working relationship between the two Committees.

Resolution 11-04: TC 113 supports the messages/statements of the Chairs of IEC/TC 113 and ISO/TC 229 regarding collaboration between the two TCs.

Resolution 11-05: TC 113 instructs its Secretary to prepare and forward the results of 113/322/Q to the Secretary of ISO/TC 229, in order to seek ISO/TC 229 agreement to form a new IEC/ISO JWG8 for graphene-based and related 2-D materials under the lead of IEC/TC 113 without changing the convenorship of KR and JP.

Resolution 11-06: TC 113 approves the establishment of the PWI: IEC TS/62565-3-x: *Nanomanufacturing – Material specifications – Part 3-x: Detail specification for single layer graphene*, led by the US

Resolution 11-07: TC 113 approves the establishment of the PWI: IEC TS/62565-3-x: *Nanomanufacturing – Material specifications – Part 3-x: Detail specification for bi-layer graphene*, led by the US

Resolution 11-08: With respect to item 6 of the signed agreement between TC 113 and the China Innovation Alliance of the Graphene Industry, TC 113 considers ratification of this agreement to be postponed for further discussion.

Resolution 11-09: TC 113 instructs the Secretary to circulate a DC of the agreement between TC 113 and CGIA to allow NCs to comment, followed by a Q.

Resolution 11-10: TC 113 instructs the TC 113 Secretary that all prospective interaction with national-based consortia be presented to the Plenary (e.g. meetings, Questionnaires, etc.) prior to entering into agreements between these consortia, and to inform the National Committee of that country to be informed of the prospective interaction beforehand.

Note to Resolution 11-10: TC 113 is of the understanding that it is the German National Committee that will propose a formal liaison between IEC/TC 113 and the EU Graphene Flagship.

Resolution 11-11: TC 113 instructs the TC 113 Secretary to advance the updated DTS of IEC 80004-9/Ed1 to publication.

Resolution 11-12: TC 113 requests the development of a basic concepts document for the development of key control characteristics standards, with a description of how this document ties into the TC 113 standardization hierarchy, led by the TC 113 Secretary.

Resolution 11-13: TC 113 requests the circulation of the New Work Item Proposal: *Test method for defect states in materials for nano-enabled electronic devices by thermally stimulated current (TSC)*, led by JP.

Resolution 11-14: TC 113 approves the establishment of a PWI for the Technical Report: *Measurement of film thickness of nanomaterials by using ellipsometry*, and instructs the TC 113 Secretary to request that ISO/TC 229 circulate this PWI for joint work.

Resolution 11-15: TC 113 approves the establishment of the PWI: *Sample preparation for resistance measurement of edge contacts for graphene and two-dimensional materials*, led by KR.

Resolution 11-16: TC 113 requests the circulation of the New Work Item Proposal: IEC/TS 62565-3-2: *Nanomanufacturing - Material specifications - Part 3-2: Graphene - Detail specification for nano-ink*, led by CA.

Resolution 11-17: TC 113 requests the circulation of the New Work Item Proposal: IEC/TS 62607-6-6: *Nanomanufacturing - Key control characteristics - Part 6-6: Graphene - Uniformity of strain in graphene analysed by Raman spectroscopy*, led by DE.

Resolution 11-18: TC 113 approves establishing the PWI: IEC/TS 62607-6-x: *Nanomanufacturing - Key control Characteristics - Part 6-x: Graphene - Measurement of sheet resistance by the four-point probe method*, led by ES.

Resolution 11-19: TC 113 approves establishing the PWI: IEC/TS 62607-6-x: *Nanomanufacturing - Key control Characteristics - Part 6-x: Graphene - Measurement of sheet resistance by the non-contact Eddy current method*, led by DE.

Resolution 11-20: TC 113 approves establishing the PWI: IEC/TS 62607-6-x: *Nanomanufacturing - Key control characteristics - Part 6-x: Graphene - Measurement of sheet resistance by terahertz time-domain spectroscopy*, led by DK.

Resolution 11-21: TC 113 approves establishing the PWI: IEC/TS 62607-6-x: *Nanomanufacturing - Key control Characteristics - Part 6-x: Graphene - Defect level of graphene analysed by Raman spectroscopy*, led by UK.

Resolution 11-22: TC 113 approves establishing the PWI: IEC 62607-6-x: *Nanomanufacturing - Key control characteristics – Part 6-x: Determination of content of functional group of graphene materials using Boehm's titration method*, led by CN, and requests that the NWIP be circulated as soon as possible. WG8 is instructed to link this method to IEC/TS 62565-3-1.

Resolution 11-23: TC 113 approves establishing the PWI: IEC 62607-6-x: *Nanomanufacturing - Key control characteristics - Part 6-x: Graphene-defect level analysis of graphene powder using Raman spectroscopy*, led by CN.

Resolution 11-24: TC 113 approves establishing a Maintenance Team to amend and maintain IEC/TR 62632: *Nanoscale electrical contacts and interconnects*, led by KR.

Resolution 11-25: TC 113 requests the circulation of the New Work Item Proposal: 62607-3-3: *Nanomanufacturing – Key control characteristics – Part 3-3: Fluorescence lifetime of luminescent nanomaterials*, led by CN.

Resolution 11-26: TC 113 requests that Mike Leibowitz and Lynn Davis prepare an initial draft of a blank detail specification for luminescent nanomaterials for circulation as a DC.

Resolution 11-27: TC 113 requests that the TC 113 Secretary circulate IEC 62565-4-2, *Detail specification for luminescent nanomaterials for general lighting and display applications*, as a DTS.

Resolution 11-28: TC 113 requests that the Secretary advance IEC/TS 62607-4-5: *Nanomanufacturing - Key control characteristics - Part 4-5 Cathode nanomaterials for nano-enabled electrical energy storage - Electrochemical characterization, 3-electrode cell method*, to publication.

Resolution 11-29: TC 113 extends the stability date of IEC 62607-3-1: *Nanomanufacturing – Key control characteristics – Part 3-1: Luminescent nanomaterials - Quantum efficiency*, to 2018.