

NanoRelease Consumer Products Steering Committee Conference Call  
March 30, 2016

Participating in the call:

Keana Scott, Carolyn Cairns, Chuck Geraci, Shaun Clancy, Tina Bahadori, Vladimir Muroshov, Julie O'Brien, Janet Carter, Richard Zepp

*Chair – Myriam Hill*

*(Co-Chair Wendel Wohlleben was not able to participate).*

An agenda was distributed prior to the call.

- 1) Review/edit/approve minutes from the October 14, 2015 Steering Committee call. No comments. Minutes are final and will be posted to [www.nanorelease.org](http://www.nanorelease.org)
- 2) Report progress of data analysis, presentations, and papers of the sanding and weathering teams with the decision of whether there are further actions for the SC.

**Weathering module**

The 2 labs (BASF and EPA Athens, GA) conducting immersion sampling on wafers weathered by EPA OH, EPA GA, Leitat, and BASF had finished immersion/elution and analysis in the fall. Data analysis for immersion sampling is in progress. Initial results show not much of a difference due to shipping of the weathered wafers. The data also seem to show that if we do follow the protocol that was used then we can make comparisons. It was also clear that the control samples are needed. Another initial finding was that the protocol was sufficient to show that one of the composites was more prone to release.

It was also reported that the consortium and NIST data hub approach worked well for multiple partners to explore across data sets and conditions in discussion and evaluation of the protocol.

The wipe sampling planned for the weathering module was not reported. This was partially because of ERDC dropping out (ERDC and NRC were to do the wipe sampling) and the poor sampling pickup of the gold filter pickup method. There is a need to follow up on what can be learned from the wipe sampling, and the status of the unused weathered wafers.

The SC asked whether CNT fibers were seen in TEM analysis. Response was yes, however, not many. This will be a consideration in determining sampling rate combined with other data collected for particular release rate evaluations.

SC asked whether the sampling approach was transferable to other nanofillers. Response from the weathering module representatives was “don’t see why not.”

No further actions by the SC were proposed.

Richard Zepp and Wendel Wohlleben will be at NanoTech 2016 and will present data from the weathering module in separate presentations shared with other weathering module participants. There is a pretty good story to tell about the utility of the protocol and the findings.

(Note after meeting: The weathering module intends to share a full draft paper with the SC, aiming for mid May. One paper is planned. Authors will include all weathering labs and analysis labs for the weathered wafers. The target journal has not been decided.)

### **Sanding module**

KIST, IUTA and CEA conducted sanding using the protocol and provided data to the NIST data hub. NIST and NRC conducted analysis of air filters and also provided analysis to the NIST data hub. IUTA, NIST, and NRC provided analysis of the data (inline and SEM). Initial reflections on the data analysis are:

- Real time in-line sampling results from IUTA, CEA, KIST and SEM particle evaluation from NIST and NRC show overall size range consistency. However,
  - The group is having trouble evaluating the high res SEM images for particles under 240nm.
  - Shapes of the size distributions for the in-line sampling differ between the three labs.
- Not seeing micron and larger particles, but also very few particles seen in the sub-micron range on the gold filters. Not clear if this is a sampling rate or a filter problem.
- It helped to have multiple real time analysis modalities. (OPC, FMPS, CPC) to cross-correlate and understand variations and similarities within and between labs.
- It may be that we need multiple filter capture (electrostatic, silicon wafer, etc) to be able to do differential analyses comparing large scale high capture rate low res with low capture rate high res, etc.
- Automation for image analysis in the high res SEM pictures is absolutely necessary
- The sanding module is looking at the meta data (e.g., handling, lab configurations) to see whether the source of the variation can be understood.
- It seems that the path forward will be to be a lot more detailed in protocol/sampling configuration.

No further actions by the SC were proposed.

Keana will be at NanoTech 2016 and will present the protocol and data from the sanding module co-authored by the sanding and analysis labs. The differences in particle size

distributions between the labs makes the interpretation difficult in terms of which aspects of the protocol are useful and what the path forward is for a standard method.

(Note after meeting: The sanding module intends to use the NanoTech 2016 presentation as an outline for a paper. An initial draft of the presentation is in preparation. The presentation has data that are useful to explore differences and similarities between labs. Timeline is unclear for the paper. Authors will include all sanding labs and analysis labs for the air filters. A target journal has not been selected.)

### **Overall paper**

A drafting team was proposed based on volunteers during the SC call comprising Richard Canady, Shaun Clancy, Myriam Hill, Carolyn Cairns. Anyone from the SC can volunteer to join the drafting team. Rick Canady will initiate the drafting based on summary slides in a presentation to Nanotech 2016. The presentation begins the session that includes Wendel Wohlleben, Richard Zepp, Keana Scott, and the many co-authors of the weathering and sanding modules. The charge of the paper will build from what was agreed to by the SC through the minutes from the October 2015 SC call.

- Describe “lessons learned” in how use of the draft protocols fared (e.g., what was planned vs what happened across labs and in the shipment of samples that may have affected sampling and measurement consistency).
- Make recommendations for protocol improvement
- Offer opinion of whether the materials used by the modules are useful as reference materials for high/low probability of release, possibly with quantitative ranges. (and, if applicable, what modification would be needed).
- Include observations (based on application of the protocol across the laboratories) regarding approaches to characterizing released materials, including quantifying the range of particle types associated with added nanomaterial (e.g., matrix-bound and free nanoparticle).

A target journal has not been selected

There was no discussion of presentations to NanoSafe in Grenoble November 2016  
[http://www.materials.cea.fr/en/Phocea/Vie\\_des\\_labos/Seminaires/index.php?id=36](http://www.materials.cea.fr/en/Phocea/Vie_des_labos/Seminaires/index.php?id=36)

One SC member proposed presentation of the findings of the project to OECD WPMN in September 2016 either in a satellite SG8 meeting or at the general WPMN meeting. The intention would be to pass on what was learned through the multi-stakeholder process and what the findings of the sanding and weathering module mean for methods development and for interpretation of data on hazard and exposure currently in the literature.

### 3) Decision regarding the proposal in the last call to have a webinar.

The possibility of a webinar or workshop was raised in the October 2015 SC call.

In this call (March 2016) two members of the SC expressed interest in a workshop as a culminating event that draws conclusions about the findings of the overall project. Shaun Clancy and Myriam Hill indicated interest in follow-up discussions on the topic after the SC call. Those interested in participating should make contact with Shaun or Myriam, or email [rcanady@neutralscience.org](mailto:rcanady@neutralscience.org).

4) Brief update on the status of the ISO Technical Report based on NanoRelease and other similar work.

The overall output of NanoRelease has been put forward as the initiating basis for Technical Report in ISO TC229. A New Work Item Proposal has been prepared through funding from Health Canada and through collaboration of experts in US and Canada. The format and scope of the propose Technical Report are being refined through US TAG and Canada SMC expert review. The intention is that the Technical Report would lay out the conditions and considerations that drive release measurement methods choice in a structure that facilitates identification of appropriate methods or identification of methods development needs.

5) Need for another SC call? What will we need to decide and when?

SC members asked for a telecom in early June to debrief from the NanoTech 2016 (regarding any necessary next/final steps for the SC) and to continue discussion of the webinar need early June.