

SC Monthly Call
WebEx Visuals/Audio with AT&T Audio
April 10, 2012

Participants: Richard Canady, Yasir Sultan, Darrell Boverhof, Debbie Kaiser, Richard Zepp, Bernd Nowack, Derk Brouwer, Chuck Geraci, Janet Carter, Carolyn Cairns, Cathy Fehrenbacher, Bill Kojola, John Monica, Shaun Clancy, Treye Thomas, Lie Chen, Libby Tsytsikova

Call Agenda

(1) Approval of March 13th SC Call Minutes

- a. Addressing action items from last SC call:
 - i. June invitations have now gone out to all of Nanorelease. Please send any additional contacts you would like to be invited.
 - ii. To do: create list of ITG members to date and circulate to SC.**
 - iii. Requested volunteers to chair the workshop.

(2) Outcome of the March 27 Face-to-Face Meeting/Webinar

- a. Members agree it was useful to get TG chairs together to discuss ideas, concepts, and challenges encountered in each TG.
- b. WebEx was useful, particularly video stream; allowed online participants to feel engaged.
- c. SC members feel that great progress is being made overall.
- d. Minor edits made to March 27 minutes according to TG cochairs.

(3) Group Updates & Plans

- a. TG1 (presented by Debbie Kaiser)
 - i. Found March 27 meeting to be very valuable, feel to be lagging behind other TGs in white paper progress, but now have a clear picture in how to move forward.
 - ii. For the meeting, TG1 brought their methods framework document, a brief outline, a figure to discuss the point of variety in released material, and a potential strategy for methods down-selection.
 - iii. During the meeting, TG1 noted that:
 1. Released material may be placed into major groups (MWCNT fully encased in polymer chunk, partially encased, MWCNT alone).
 2. Most methods to be identified will be qualitative and detection-based, as quantification methods are less available/validated. The distinction between qualitative and quantitative methods must be made clear in the white paper (must set detection limits).
 3. Characterization methods that are identified will be only for important characteristics of the released material.
 4. Will acknowledge the various existing morphologies of MWCNTs, but focus on commercially relevant standard MWCNTs.
 - iv. Regarding the issue of other added components in the MWCNT/polymer systems:
 1. Though these components are not the focus of the project and nor is their release potential, they could affect the overall degradation of the polymer system.

2. State of the art materials, such as our suppliers, would have 99% pure material, so extra components may not be a concern for our testing. However, others in commerce may have less pure material, especially considering that pure material is much more expensive. TG1 must acknowledge the presence of impurities, most likely due to catalysts, and note that methods for detecting/quantifying these impurities are mostly standardized and complete (to be referenced in the white paper).
- v. Next steps:
 1. TG1 will be holding a conference call in the next couple weeks, to finalize framework details and references. TG1 anticipates that the framework document would make up about 70% of the white paper, with the remaining 30% being interpretations of the framework findings.
 2. TG1 will consider destructive methods to degrade the polymer and weigh the CNTs as a potential method for testing release total of all possible forms of released material.
 3. TG1 cochairs feel confident that TG1 white paper will be ready for the June workshop.
- b. TG3 (presented by Bernd Nowack)
 - i. Found March 27 meeting useful, but also came in with many TG3 discussions but not much written input from members.
 - ii. Need to make distinction between release scenarios and exposure scenarios, and identify release scenarios as our main focus.
 - iii. Will come up with 6 release scenarios, to represent a range of release potential, and to span a range of commercially relevant scenarios. We have made 2 such diagrams so far, Bernd will make 4 more and then schedule a call with TG3 to discuss all 6, request input for each.
 - iv. The FtF meeting also identified that TG3 should consider the population involved, and this is related to exposure scenarios, how should we stray away from exposure scenarios in order to focus on release, but still consider population involved? TG3 can focus on release primarily and then discuss how it can relate to exposure. Exposure matters to us to the degree that it influences our selection of methods, we want to choose methods that have a great benefit to exposure scenarios of importance to us. We will evaluate a range of exposure scenarios where we think risk relevant exposures might occur as a way of demonstrating where methods development might be most useful. TG3 does not need to say which scenario is most important, but rather to evaluate the potential scenarios, while considering which may be more relevant for establishing methods.
 - v. What would be most helpful type of information from TG2 for TG3?
 1. TG3 is not looking at a great amount of product specific information, but perhaps polymer family or some more general groups of materials with similar life cycles.
 2. Is there a relationship between polymer groups and intended use of product? TG2 may be able to make broad statements about this (when CNTs added for strength of polymer), but some situations may be difficult to group into use categories (when CNTs added for electrical uses or other special properties in the polymer).
 3. **Action item: need an ongoing dialogue between TG2 and TG3 to get to a point where the final testing materials selected are both of**

interest and manageable for testing. At some point, there needs to be a match between the two groups in order to provide recommendation to the testing phase.

- c. TG2 (presented by Richard Zepp)
 - i. Draft white paper has 5 polymers to be considered (epoxy, PA, PC, PU, PE), which were presented at the March 27 meeting.
 - ii. Although production volume would be very useful, we have had problems finding this type of information and will most likely not be possible within the time constraints and available data.
 - iii. Will continue with filling in gaps of polymer information; we still need input on polyamide (PA) and polyurethane (PU).
 - iv. We will not be down-selecting any further than the 5 we have chosen, as it is not necessary for TG2 to down-select further (the testing phase will do this later).
 - v. Will attempt to rank the polymer systems with low-high release potential, which does overlap with TG3 scope, so communication will be useful.
 - vi. If a polymer is UV sensitive, will TG2 indicate that for this reason, the polymer is often used in conjunction with coatings? Yes, we will be considering this information for the polymers themselves, but the information for MWCNT-polymer composites is sparser, although we will do our best to find it.
 - vii. TG2 feels confident in their position in the project thus far.

- d. SOST (presented by Shaun Clancy)
 - i. Will generate two documents
 - 1. First document will be more introductory, for which an outline has been developed. The document will set the stage for why we are interested in analyzing methods for measuring release of MWCNTs from polymer systems, will give a brief perspective in what we already know, and then discuss what we need to know in the future. This sets the stage for the next three documents (the TG white papers).
 - 2. Later, the SOST will take the TG white papers into perspective and identify further gaps in which research is needed.
 - 3. Separately, a third document is being worked on for a more foundational, literature perspective.
 - 4. We need additional authors:
 - a. We need government representation (US and Canada), and an NGO perspective; we are still open for nominations in these areas.
 - b. ***Action item: contact potential new authors with most recent SOS documents for their review.***
 - c. The SOS report should address the issue of quantitative methods and address the value of generating that information, the need for quantitative methods to be established.

- e. ITG (presented by Carolyn Cairns) & Staging of Phase 3 Testing (Rick Canady)
 - i. ITG has no significant updates since the last SC call, will increase in activity after the June workshop.
 - ii. In the interest of time, will table the Phase 3 Testing for the next SC call.

(4) Questions for Manufacturers Liaison Group [attached]

(presented by John Monica)

- a. Decisions are being made in the project as it progresses, so it is difficult for the manufacturers to understand what it is exactly that they are being asked to do and provide.
- b. The companies for the majority would like to move forward in their involvement, although there is no guarantee.
- c. Although responses with full certainty may not be possible at this point, SC must respond to some extent.
- d. Members agree to never ask who is represented on the MLG, to keep all manufacturers anonymous (even broad yes/no inquiries of organization representation). Confidentiality is the key concern for the MLG; John Monica is acting as the third party in between NanoRelease members and the MLG members to preserve confidentiality.
- e. Review of questions:
 - i. Materials Information: MLG want to know what types of materials are the likely test candidates, does the SC intent to test materials in commerce or materials that will be created particularly for testing purposes? Several manufacturers have voiced their interest in this question, particularly wanting to avoid false data due to use of materials that are not out in commerce.
 - ii. Agreement: MLG is willing to make an agreement soon, but needs more information from the SC regarding the process to be undertaken in testing. They would like the ability at the very end to have leeway when the final testing process is presented, so they are not obligated to go through a testing strategy that they do not approve of.
 - iii. Extreme Samples: the MLG is concerned that the design of a high release material would result in high release data, and even if it is explained that this design was specifically to demonstrate high release, the MLG is concerned that the public will look past the purposeful design, and rather focus on the high potential for release.
 - iv. End User Articles: MLG does not want their customers feeling that they have been involved in something they do not want to be in.
 - v. Use of Final Data: MLG wants information about what the final data will be used for, knowing that many regulatory agencies are involved in the project.
 1. The intention of the project is to develop data on methods, not to generate information about articles/products, though this data will be generated in the process.
 2. Within the design of these experiments, we will be conducting well thought-out experiments that should lead to logical conclusions and hopefully will not be misinterpreted, we want the manufacturers to feel comfortable, and for all stakeholders to be in agreement with the design of the experiments.
- f. **Action item: Rick, Darrell, and Yasir and will sit down to draft a document with responses to these questions. Shaun Clancy and Cathy Fehrenbacher volunteer to help with primary drafting of these responses. Carolyn Cairns volunteers to help with secondary drafting. John Monica would prefer a response before the next MLG call (to be scheduled around April 19-23rd).**

(5) Expert Workshop: June 21-22 in Washington, DC

<http://www.ilsa.org/ResearchFoundation/Pages/NanoRelease2012Workshop.aspx>

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- a. Several SC members met to discuss workshop venue, and confirmed the Consumer Product Safety Commission in Bethesda, MD (just outside Washington, DC). Facility should be more than adequate and are in the process of securing video streaming capabilities. Restaurant and hotel information will be forwarded soon; we will try to reserve a block of rooms in a nearby hotel.
- b. Updates in workshop agenda will be tabled until next call, particularly regarding topics for breakout sessions. Discussion topics will be critical in carrying forward the rest of the project, specifically the SOS report and ITG work plan. TG overlapping themes will be useful as breakout topics.
- c. **Action item: send out email polling for specific input, specifically from chairs/leaders of all groups, to identify potential breakout session topics.**
- d. Invitations are going out; please let us know if there are individuals or organizations that you can recommend to be invited.

Summary of Action Items and Reminders for Next SC Call:

- (1) Create list of ITG members, circulate to the SC.
- (2) Increase communication between TG2 and TG3
- (3) Consider how to circle in new SOS authors (government and NGO)
- (4) Draft a document in response to the MLG questions
- (5) Poll the SC for ideas on breakout topics for June workshop
- (6) For the next SC call, include discussion of:
 - a. Staging the scene for Phase 3 testing
 - b. June workshop agenda & breakout session topics