

**Participants:** Yasir Sultan, Treye Thomas, Bernd Nowack, Shaun Clancy, Chuck Geraci, Debbie Kaiser, Chris Kingston, Bill Kojola, Richard Zepp, Steve Froggett, Libby Tsytsikova and Rick Canady

**Agenda:**

(1) Updates:

TG-1: Debbie Kaiser

- The group has been moving forward on their charge and developing an outline. However the chairs are having difficulty identifying volunteers from the group to draft sections of the outline.
- The chairs will likely do much of the drafting at this stage.
- The scope of TG-1 remains very broad within building on input from the other task groups. Knowing what release scenarios are most important may help narrow the range of potential methods, and understanding the material properties that likely affect release will certainly reduce the number of methods for the group to consider.

TG-2: Chris Kingston

- The group reviewed and discussed the list of polymers they had identified through the data call and input from members. The discussion led to a list of criteria (e.g. prevalence in commerce) for the TG members to use in a selection of the most important polymer matrices to investigate.
- Based on these criteria, the group selected 5 polymers and each member submitted a rationale for their selection.
- Each of the matrices are widely used in commerce and they represent a broad range of material properties.
- The group will hold a follow up discussion to assign specific polymer systems (material properties) to authors, and begin drafting.
- The chairs noted that they have been experiencing difficulties keeping engagement levels high among TG members.

*Based on this readout TG-1 requested TG-2 to elaborate on the material properties of the polymers being selected by TG-2, as these will impact the selection of methods by TG-1.*

*Specifically, TG-1 is interested in the following from TG-2:*

*Hard polymers:*

- *Probably more chemically and environmentally stable than soft polymers*
- *More likely that the released entity is a chunk rather than an individual MWCNT*
- *Mechanical mechanisms such as abrasion and wear would be relevant*

- *Release due to weathering or immersion in environmental media such as water would be less likely*
- *Detection and characterization methods would likely focus on microscopy methods. A hard polymer may not degrade in an electron microscope.*
- *Media affects the type of microscope, i.e., environmental rather than normal*

#### Soft polymers

- *Probably less chemically and environmentally stable than hard polymers*
- *More likely that the released entity is an individual MWCNT rather than a chunk*
- *Mechanical mechanisms such as abrasion and wear may not be relevant as the polymer would "smear" rather than shear off as chunks*
- *Release due to weathering or immersion in environmental media such as water would be more likely*
- *Detection and characterization methods may focus on environmental microscopy methods and possibly analytical chemistry methods if the polymer can be dissolved*

#### TG-3: Bernd

- The entire life cycle still appears to be equally valuable to investigate at this point. In an effort to narrow scope, the chairs have discussed if the group can identify specific stages along the life cycle, (e.g. fabrication and or environmental release) to help narrow the biological media within which the release may occur.
- Although the discussions have been rich, the chairs believe they need to begin drafting the white paper.

*Based on this readout, TG-1 encouraged TG-3 to continue consideration of the release media as this will be informative for TG-1's methods selection process.*

#### SOST: Rick

- The group has a draft outline and is collecting comments and edits from the authors on the outline in preparation for the coordination face-to-face meeting in two weeks (March 27<sup>th</sup>)
- The authors are looking toward to TGs and participating in their discussions to gain additional information and focus.
- One author has had to resign for medical reasons, and the group continues to seek additional authors from the stakeholder groups not currently represented (e.g. US and Canadian governments).

#### (2) Materials Procurement for Lab Testing

- The ILSI secretariat held a productive call with representatives from about 7 MWCNT manufactures. The discussions are still in the early stages, orienting

the manufacturers to the project, it's goals and current thinking about the testing phase.

- At this stage, the manufacturers generally believed that testing articles in commerce was better than testing 'reference' matrices that represented a broad range of properties. This point will be further discussed with the manufacturers as the SC currently considers testing reference materials in a first round of testing to validate the methods being used, and then testing articles in a second round of testing to confirm the measurement method's utility on commercial articles.
- Additional follow up discussions are planned and will begin to explore how to source both reference materials and articles to conduct the testing. It was noted that, these discussions will be informed by the output from TG-2.

*Further discussion highlighted that the initial selection of 5 polymer matrices was an excellent step forward, and will be very valuable for the white papers. However, as the TGs move forward with those 5 materials, in combination with the release scenarios and what methods could be used to characterize release, the SC will need to begin thinking about how to narrow down the number of polymer matrices being considered. The interlab testing phase of the project will only be able to handle 2, perhaps 3, reference materials. Some of this discussion can begin at the March meeting, but later, at the June workshop, the SC will need to make decisions about which polymer/MWCNT matrices can be sourced and thus tested.*

### (3) Data Call Responses

- There have only been a few responses to the broad data call, and those have not been overly informative. In contrast, the information received from representatives from companies on the TGs, and in discussions with the manufacturers has been very detailed.
- Given the lackluster responses to the data call, the general belief was that the SC members should begin calling the companies we sent emails to, and ask directly.
- An idea raised was to use the draft white papers, especially TG-2's, to encourage responses by simply asking, "what is missing here?"

### (3) White Papers – are we on schedule to have a draft by March 23<sup>rd</sup> in preparation for the Face-to-Face meeting?

- Each of the TG chairs had the same response, yes, but only barely. The TG members have spent a long time grappling with a large task and are only now beginning to identify priorities and move forward with drafting.

### (4) Standing up of the ITG: Steve

- Formal invitations were sent to the identified experts last week, and responses have been a little slow. It was recommended that the ILSI secretariat should call the non-responders and reconfirm the interest in the project they had expressed before.

(5) Status of the CRADA/MOU/MTA

- Based on discussions with EPA, we are planning to use a MOU as the overarching framework for the testing phase of the project because it is less formal.
- Under the MOU, there will be more formal agreements, such as CRADAs or MTAs as appropriate, to address specific concerns or agreement needs.
- The approach has a flexible overarching structure, with specifics between groups on a topic as deemed necessary by the participants.
- The interagency agreement for funding transfers will not be covered by this agreement. The DOD may have a mechanism to handle funding transfer and this is being explored.
- The companies involved would be those supplying reference materials and later articles to test during Phase 3. These are the same companies supplying materials for products in commerce.

(5) Expert Workshop: June 21-22

- Responses to the draft agenda for the Expert Work were minimal.
- One question was raised about the order of presentations, currently listed to start with TG-3 and finish with TG-1.
- The group discussed the merits of discussing certain topics before others and concluded that the discussion on methods should probably be last, since the workshop participants will have been informed by the proceeding discussions on materials and scenarios. Depending on the material properties, the likely release media and scenarios, some methods will be excluded while others will be better suited.
- The goal of the workshop will be to benefit as much as possible from the expertise in the room.
- After the workshop, the SC will have a difficult set of decisions to make regarding which polymer/MWCNT matrices to test, under which release scenarios and with what methods.
- At present the venue has not been selected, but both the American Chemical Council's headquarters and EPA's buildings are being considered. Selection will be made before the end of March.

(6) Consider Workshop Charges and Decision Document

- Over the next two SC calls leading up to the workshop in June, the SC needs to identify topics for breakout groups, draft charges for those groups and other ancillary items for breakout groups (e.g. rapporteurs, chairs)
- Ideally, we will be able to build upon the workshop discussions in plenary and finish the white papers during the breakout sessions.
- The ILSI secretariat is actively looking for volunteers from the SC to help with these tasks. Treye Thomas and Bill Kojola volunteered to help.

(7) Approvals:

Notes from the last call: Approved as drafted

**Next Steps:**

1. Send draft workshop invitation letter to SC for review / approval
2. Circulate the list of people we've invited to the ITG and ask everyone on the SC to contact those in their agency
3. Request additional volunteers to help with the June workshop planning