

Draft Minutes v2

**ASC OP/TF 6 – Committee for Optics and Electro-Optical Instruments – IR
Materials and SPIE IR Materials Working Group** (joint meeting)
(Held in conjunction with SPIE Defense and Security Symposium)
Monday, May 5th, 14:00 – 16:00 EDT

Hilton Hotel
401 West Pratt St.
Baltimore, MD 21201
Holiday 1 Room

1. Welcome, Introductions and Appointment of note-taker

Adam Phenis called the meeting to order at 14:06 EDT. In attendance were sss. Everyone introduced themselves. Dave Aikens agreed to keep minutes, with Ron Scotti's assistance.

Adam began the meeting with a review of the charter of the two groups that make up our membership; OEOSC which is responsible for developing materials standards and other supporting standards, and SPIE IRWG which is responsible for generating the technical content and measurements of the IR materials.

All documents presented at the meetings are posted on the OEOSC website under "meeting documents", and available to everybody. Standards that are under development are only accessible to OEOSC members, per ANSI rules.

2. Approval of the agenda

Dave Aikens moved to accept the agenda as modified by Adam to put Nathan Carlie later in the program, the motion was seconded by Leonard Hanssen and the motion passed.

3. Approval of the minutes for the prior meeting

Dave Aikens moved to accept the minutes from the February meeting. Leonard Hanssen seconded the motion and it carried.

4. Reports

A. Pilot refractive index measurements status update (Phenis)

Adam Phenis reported on the status of the pilot refractive index study. Ten suppliers are going to be submitting materials, and there will be quite a few parts needing to be tested. John Burnett at NIST will need priorities. Adam suggested that perhaps he should be the gate-keeper, and only send John the samples that are next on the list of priorities. Dave Aikens proposed that instead we just send John the samples and

provide him with a prioritized list of sample tests. This seemed a more expeditious approach. Even so, Adam would be the prioritization gate-keeper and maintain a schedule of delivery dates for the samples. NIST has offered that they can store the samples if needed.

Adam mentioned that some of the materials suppliers expressed concerns about some of the fabricators and had some questions regarding how the samples would be manufactured. Some of the parts are very difficult; BD2 and IRG26 are very soft, for example, and the vendor may not be as aware of the importance of hitting the specifications as might be desired. In addition, clarification may be required if a specific crystal orientation is preferred.

Several of the attendees said they hadn't actually seen the drawings yet, and would be interested in participating in the campaign.

Action: Adam Phenis to send out copies of the drawings to the glass suppliers, so they can discuss the requirements directly with the fabricators.

Action: Dave Aikens to post the drawings on the website for general access.

Action: Leonard Hanssen to contact John Burnett and determine if there is a preferred crystal orientation.

Adam's presentation for this and other items on the agenda can be found on the OEOSC website under meeting documents, titled "ASC OP Task Force 6_PW_20140505.pdf"

B. Standards documents status (Aikens)

Dave Aikens presented on the status of the standards documentation status. Draft standard OP1.007 has been submitted for review by the committee, and is now being balloted at the TF6 level. Ballots on this standard are due on May 15th. He said that it may be important to expand the scope of OP1.007 to include identifying standard IR bands, standard wavelengths for dispersion calculations, and standard wavelengths for metrology for each band. If OP1.007 is confirmed by TF 6 it will be balloted by ASC OP in the fall, and should be ready to publish by May of '15.

In addition Dave reported on several measurement methods standards. We do not yet have a draft standard from Schott for quality metrology (see below, however) but in the mean-time, there are several new measurement method standards proposed at the ISO level based on more traditional techniques. The US voted in favor of all these new standards, but we may want to re-think our strategy based on our own understanding of how to do these measurements.

Meanwhile we have continued work on material properties specification and grades. TF1 continues to develop a method for specifying optical glass based on ISO 10110 and ISO 12123. We may want to use the same grades and notations for IR materials

The schema for material properties for the optical design codes is done, and we are waiting for sample data from the pilot so we can try it out. Once we are convinced it is good to go, we can publish the schema as an American National Standard.

Action: Dave Aikens to send copies of OP1.007 to Carlie and Tejada for comments on the band limits in the SWIR.

C. Materials Metrology Instrumentation (Carlie)

Nathan Carlie provided a presentation on Chalcogenide glasses and re-mastering the Abbe diagram to use instantaneous dispersion at the minimum deviation wavelength. He also proposed that we could standardize the Sellmeyer equation for IR materials. He also described the refractive index measurement equipment, and showed data which indicates that dn/dt is not linear, and depends on the temperature the data is taken at. This may require more sophisticated measurement equipment to measure long ranges of temperatures.

He also showed the equipment developed by Schott to do imperfection inspections of bulk IR glass. The setup is capable of measuring homogeneity, striae, and sub-surface damage, in addition to bubbles and inclusions.

The presentation is available on the OEOSC website under meeting documents with the title ."OEOSC DSS '14 Carlie.pdf"

D. Other reports and updates (Phenis)

Adam Phenis presented the status on the material sampling protocol. The preliminary draft of the sampling protocol is out for review to a smaller group, to get feedback on how to refine it. Adam plans to incorporate the comments received and submit a draft to this committee for review.

5. Group discussion topics

There were no other topics to discuss, and we were almost out of time, so we skipped this item.

6. Time and place for next meeting

Nathan Carlie moved that we schedule a conference call on July 21, 2014 at 11:00 EDT. Ian Murray seconded and the motion carried.

7. Adjourn

At 16:02 Dave Aikens moved we adjourn. Leonard Hanssen seconded and the motion carried.