

## Infrared Materials Standards Working Group

### Statement of Purpose (Preliminary)

The Infrared Materials Standards Working Group is an interactive network of scientists and engineers who manufacture, test, and use IR materials. The purpose of this group is to develop standards for properties of optical materials used in the infrared (IR) spectral region (nominally, wavelengths 0.7 – 20 microns). Although typical properties have been published in the technical literature and have been incorporated in various databases, much of this information is decades old. Furthermore, the trend toward multispectral imaging systems for DoD applications has made the need for updated properties more acute. The properties of interest encompass all optical, mechanical, thermal, and thermo-optical characteristics, but the initial primary focus is on the optical and thermo-optical properties used for the design of infrared imaging systems – most notably index of refraction,  $dn/dT$ , dispersion, attenuation coefficient, inhomogeneity, and inclusions. Some materials that transmit in the IR are also used at wavelengths outside of the IR range. Therefore, standards developed by the group may include characteristics at wavelengths outside of this region.

The initial goals are to

1. Update the nominal values of material properties
2. Determine the blank-to-blank variations in the material properties
3. Develop standard sampling and test protocols for measuring material properties
4. Foster the development of cost-effective methods for measuring material properties
5. Advise and assist the US Technical Advisory Group (TAG) to TC172/SC3 in developing US positions on ISO standards related to IR materials, including offering potential experts to represent the US at international meetings of TC172/SC3.