

Experimental facility to measure light scattering properties: BSDF and TIS

Tuesday 7 May 2024 17:40 (1 minute)

A new facility at INFN and University of Padova to measure light-scattering properties of surfaces and materials of interest for ET is described. Our system can measure the Bidirectional Scattering Distribution Function (BSDF) and Total Integrated Scattering at 532 nm and 1064 nm, with a plan to upgrade at 1550 nm in the near future. The BSDF noise floor is below 10⁻⁸/sr in the whole angular range between 8 deg and 170 deg at 1064 nm. We can perform BSDF measurements using incoming light linearly polarised along different axes, and analyse scattered light along independently oriented polarisation axes. The beam spot size on the sample can be varied from about 100 μm up to about 1mm to perform spatially averaged BSDF and TIS measurements. Our laboratory is also equipped with a digital optical microscope and an Atomic Force Microscope providing us with a direct-space characterization of the sample morphology, in order to assist and extend the characterization of samples.

Primary authors: BAZZAN, Marco (University of Padova and INFN); CIANI, Giacomo; Dr CONTI, Livia (INFN); DIAZ RIEGA, Diego Alonso (University of Padova); FAVARO, Giulio (University of Padova); FLOCCO, Francesco (Univ. Padova); MILOTTI, Valeria (University of Padova, INFN PD); MOSCATELLO, Andrea (University of Padova & INFN)

Session Classification: Posters

Track Classification: Instrument Science Board (ISB)