Materials List for:

X-ray Beam Induced Current Measurements for Multi-Modal X-ray Microscopy of Solar Cells

Christina Ossig[1,3], Tara Nietzold[2], Bradley West[2], Mariana Bertoni[2], Gerald Falkenberg[1], Christian G. Schroer[1,3], Michael E. Stuckelberger[1]

[1]Deutsches Elektronen-Synchrotron

[2]School of Electrical, Computer and Energy Engineering, Arizona State University

[3]Department Physik, Universität Hamburg

Correspondence to: Michael E. Stuckelberger at michael.stueckelberger@desy.de

Materials

Name	Company	Catalog Number	Comments
BNC cabling and connectors			From generall cable suppliers
Chopper blade	Thorlabs	MC1F10HP	Apart from technical compatibility of the chopper wheel with the chopper system, it should be checked that the chopper blade sufficiently blocks the X-ray beam.
Conductive silver paint	Conrad	530042	Alternative products can be obtained from Pelco and others
Copper wires			From cable suppliers for contacting of the solar cell
Current Preamplifier	Standford	SR570	Alternatives include the Keithley 487 or 6487 Picoammeter.
Device under test (DUT)			Suitable device for XBIC measurements.
Holder with printed circuit board			Custom design
Kinematic sample mount	Thorlabs	KB25/M	Optional, allows easy positioning and changing of sample. Alternatives include the M-BK-1A from Newport
Lock-in Amplifier	Zurich Instruments	UHFLI or MFLI	Whereas the MFLI has current preamplifiers included, the UHFLI requires an external current preamplifier but offers more options. Therefore, the UHFLI was used for the presented experiment.
Measurement control/data acquisition unit			Available at different synchrotrons.
Optical Chopper	Thorlabs	MC2000B(-EC)	Alternatives include the choppers SR540 from Stanford Research Systems, or model 3502 from Newport.
Polyimide tape			Rolls with different widths and thicknesses are available
X-ray source			Available at different synchrotrons