

Materials List for:

Characterization of Ultra-fine Grained and Nanocrystalline Materials Using Transmission Kikuchi Diffraction

Gwénaëlle Proust¹, Patrick Trimby², Sandra Piazzolo³, Delphine Reira⁴

¹School of Civil Engineering, The University of Sydney

²Australian Centre for Microscopy and Microanalysis, The University of Sydney

³Department of Earth and Planetary Sciences, Macquarie University

⁴Charles Delaunay Institute, LASMIS, UMR STMR CNRS 6281, University of Technology of Troyes

Correspondence to: Gwénaëlle Proust at gwenaelle.proust@sydney.edu.au

URL: <https://www.jove.com/video/55506>

DOI: [doi:10.3791/55506](https://doi.org/10.3791/55506)

Materials

Name	Company	Catalog Number	Comments
Scanning electron microscope	Zeiss		Preferably equipped with a field emission source in order to maximize spatial resolution. The one used here is a Zeiss Ultra plus field emission-SEM
Electron backscatter diffraction detector	Oxford instruments		Different system are available on the market. The one is in this work is a Nordlys-nano EBSD detector from Oxford instruments. Forescatter detectors are mounted below the detector phosphor screen which is an option.
Electron backscatter diffraction software for data acquisition and analysis	Oxford instruments		The protocol is described here for the usage of the AZtechKL EBSD software but other software can be used as well
EDS detector	Oxford instruments		This is optional. The one used here is a X-Max 20 mm ² silicon drift EDS detector from Oxford instruments
sample holder for TKD	ANY		As long as it can handle thin specimen and can be placed in the correct orientation within the microscope. Different companies sell specific sample holders for TKD analysis if required by the user.
Plasma cleaner	Evactron		This is optional. The one used here is Evactron Model 25 RF Plasma Decontaminator for FIB/SEM and Vacuum Chambers