

Materials List for:

Obtaining 3D Chemical Maps by Energy Filtered Transmission Electron Microscopy Tomography

Lucian Roiban¹, Loïc Sorbier², Charles Hirlimann³, Ovidiu Ersen³

¹Univ Lyon, INSA-Lyon, Université Claude Bernard Lyon 1

²IFP Energies nouvelles

³Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS)

Correspondence to: Lucian Roiban at Lucian.roiban@insa-lyon.fr

URL: <https://www.jove.com/video/56671>

DOI: [doi:10.3791/56671](https://doi.org/10.3791/56671)

Materials

Name	Company	Catalog Number	Comments
JEOL 2100f	JEOL		Electron microscope
Tridiem Gatan Imaging Filter (GIF)	Gatan		Post colum energy filter
Digital micrograph	Gatan		Software
Gatan EFTEM tomography plugin	Gatan		Dedicated software to record filtered tilt series for EFTEM tomography
Tomoj	Imagej plugin http://www.cmib.fr/en/download/software/		Free software developed by Currie Institute in Paris, France for electron tomography
EFTEM-Tomoj	Imagej plugin http://www.cmib.fr/en/download/software/		Free software developed by Currie Institute in Paris, France , for EFTEM imaging
Imod	http://bio3d.colorado.edu/imod/		Free software developed by University of Colorado, USA for electron tomography
Imagej	https://imagej.nih.gov/ij/		Free software developed by National Institute of Mental Health, Bethesda, Maryland, USA for images treatment
Merge channels	https://imagej.net/Color_Image_Processing		Fonction in Imagej allowing to give different colors to volumes while they are overlapped
3D Slicer	https://www.slicer.org/		Free software developed by a large consortium lead by Ron Kikinis , Harvard Medical School, Boston, MA, SUA
Chimera	https://www.cgl.ucsf.edu/chimera/		Free software developed by the Resource for Biocomputing, Visualization, and Informatics at the University of California, San Francisco, for data segmentation, cuatification and visualisation of 3D models
silica alumina support of catalyst	IFPEN		sample prepared for eleboration of this protocol
titania alumina support of catalyst	IFPEN		sample prepared for eleboration of this protocol
alcohol			
water			
Au nanoparticles of 5 nm	BBI Solutions		

Holey carbon film 200 mesh microscopy grid	Agar		
EDX spectrometer	Oxford Instruments		