

Materials List for

Determining the Mechanical Strength of Ultra-Fine-Grained Metals

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Materials

Name	Company	Catalog Number	Comments
20 nm Ni	Nanomaterialstore	SN1601	Flammable
3 nm Ni	nanoComposix		Flammable
40, 70, 100, 200, 500 nm Ni	US nano	US1120	Flammable
Absolute ethanol			as the solution to make 8 nm Ni
Absolute isopropanol			as the solution to make 12 nm Ni
Amorphous boron powder	alfa asear		
Copper mesh	Beijing Zhongjingkeyi Technology Co., Ltd.		TEM grid
Epoxy glue			
Ethanol			clean experimental setup
Focused ion beam	FEI		
Glass slide			
Glue tape	Scotch		
Kapton	DuPont		Polyimide film material
Laser drilling machine			located in high pressure lab of ALS
Monochromatic synchrotron X-ray	Beamline 12.2.2, Advanced Light Source (ALS), Lawrence Berkeley National Laboratory		X-ray energy: 25-30 keV
Optical microscope	Leica		to mount the gasket and load samples
Pt powder	thermofisher	38374	
Reaction kettle	Xian Yichuang Co.,Ltd.		50 mL
Sand paper			from 400 mesh to 1000 mesh
Transmission Electron Microscopy	FEI		Titan G2 60-300
Two-dimension image plate	ALS, BL 12.2.2		mar 345