

Materials List for

Preparation of Nanoparticles for ToF-SIMS and XPS Analysis

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Materials

Name	Company	Catalog Number	Comments
4-figure Laboratory balance	Kern & Sohn GmbH	ADB200-4A	
5 mm Pellet die	Specac	GS03060	
Alkali glass cleaning solution	Sigma-Aldrich	Hellmanex™ III Z805939	Special cleaning solution for cuvettes
Carbon adhesive tabs	Plano	"Leit-Tabs" G3347	
Clean laboratory beakers	any		e.g. 300 mL
Cryo-freezer	Electron Microscopy Sciences	EMS-002 Cryo Workstation	
Dialysis tube with fasteners	Medicell Membranes Ltd	DTV12000.06.30	Molecular weight cut-off (MWCO) 12-14 kDa
Die press	any		Capable of 2 kN force
Disposable syringe, 1 mL, Luer-slip	TH Geyer	Labsolute 7657545	Any appropriate volume can be used
Double-sided adhesive	3M	Removable Repositionable Tape 665	
Dry ice	Linde AG	ICEBITZZZ®	For short term storage/cooling
Eppendorf transfer pipette and tips	Eppendorf	various	Check correct size for planned pipetting volume
Ethanol, ACS grade	Merck KGaA	1009832500	
FFP2 or FFP3 mask	various		For working with nanoparticles from non-hazardous materials, when not in a fume hood or glove box
Isopropanol, ACS grade	Merck KGaA	1096342500	
Lab coat, gloves and goggles	any		
Laboratory centrifuge	Eppendorf	Centrifuge 5430	
Laboratory fume hood	any		necessary for working with nanoparticles
Laboratory stirrer & stirrer bar	NeoLab	D-6010	
Lint-free wipes	Kimberley Clark Professional	Kimtech Science Precision wipes	Recommended for working with Si wafers
Liquid Nitrogen	Linde AG	Stickstoff flüssig 5.0	Only for cooling of the cryogen.
Microtube/centrifuge tube 1,5 mL	T.H. Geyer GmbH & Co. KG	Labsolute 7696751	
Nitrogen 5.0	any		99.999% purity
Pasteur pipette, PE, plastic 3 mL	TH Geyer	Labsolute 7 691 203	
Pasteur pipette, PE, plastic 3 mL	TH Geyer	Labsolute 7 691 203	
Powder sample holder	BAM workshop		"Home-made" sample holder
Propane	Sigma-Aldrich	769037	The cryogen should be of highest possible purity.

Sample vial or centrifuge tube 1 mL	Greiner Bio-One GmbH	Cellstar 188 261	Should be capable of being fixed in the Vortexer
Silicon wafers	any		ideally 1cm ² pre-cut
Spin-coater	SPS Europe	SPIN150i-NPP	
Syringe filter 0,45 µm	Th Geyer	Labsolute 7699803	For smaller samples; larger versions exist for larger sample volumes
ToF-SIMS	IONTOF GmbH	ToF-SIMS IV or V, equipped with Bi LMIG and flood gun	
Tweezers for handling Si wafers	any		
ultrapure water	TKA	MicroPure 08.1202	
Ultrasonicator	Bandelin	Sonorex Super	
UV/Ozone cleaner	NanoBioAnalytics	UVC-1014	
Vacuum dessicator	any		
Vacuum pump (membrane/diaphragm)	Vacuubrand GmbH	Type MD-4T	
Viton O-ring 6.07 x 1.78 mm	Betech GmbH	2-010, FKM 80	
Vortexer	Heathrow Scientific	Vortexer HS120212	
Wafer Holder 25mm coin style	Semiconductor Production Systems Europe	eWB0091-ASSY-1	
XPS	Kratos	Kratos Axis Ultra DLD	