

Materials List for

Aqueous Synthesis of Plasmonic Gold-Tin Alloy Nanoparticles

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jove.com/video/66628

Materials

Name	Company	Catalog Number	Comments
Basix Microcentrifuge Tubes	Fisher Scientific	Cat#02-682-004	
Cary 100 UV-visible Spectrophotometer	Agilent Technologies	Cat#G9821A; RRID:SCR_019481	
Cary WinUV	Agilent Technologies		https://www.agilent.com/en/product/molecular-spectroscopy/uv-vis-uv-vis-nir-spectroscopy/uv-vis-uv-vis-nirsoftware/cary-winuv-software
Crystallography Open Database	CrystalEye	RRID: SCR_005874	http://www.crystallography.net/
Cu Carbon Type-B Grids (200 mesh, 97 µm grid holes)	Ted Pella	Cat#01811	
Direct-Q 3 UV-R Water Purification System	MilliporeSigma	Cat#ZRQSVR300	
Entris Analytical Balance	Sartorius	Cat#ENTRIS64I-1SUS	
Glass round-bottom flask (250 mL)	Fisher Scientific	Cat#FB201250	
Glass scintillation vials	Wheaton	Cat#986548	
Hydrochloric acid (HCl, NF/FCC)	Fisher Scientific	CAS: 7647-01-0, 7732-18-5	
Hydrogen tetrachloroaurate (III) trihydrate (HAuCl ₄ ·3H ₂ O, 99.99%)	Alfa Aesar	CAS: 16961-25-4	kept in a desiccator for consistency of purity and stability
ImageJ	National Institute of Health	RRID: SCR_003070	https://imagej.nih.gov/ij/download.html
Isotemp GPD 10 Hot Water Bath	Fisher Scientific	Cat#FSGPD10	
Isotemp Hot Plate Stirrer	Fisher Scientific	Cat#SP88857200	
Mili-Q Ultrapure Water (18.2 MΩ-cm)	Water purification system		
Miniflex X-Ray Diffractometer	Rigaku	RRID:SCR_020451	https://www.rigaku.com/products/xrd/miniflex
Model 5418 Microcentrifuge	Eppendorf	Cat#022620304	
Nitric acid (HNO ₃ , Certified ACS Plus)	Fisher Scientific	CAS: 7697-37-2, 7732-18-5	

On/Off Temperature Controller for Heating Mantle	Fisher Scientific	Cat#11476289	
Optifit Racked Pipette Tips (0.5-200 μ L)	Sartorius	Cat#790200	
Optifit Racked Pipette Tips (10-1000 μ L)	Sartorius	Cat#791000	
Philips CM12 120 kV Transmission Electron Microscope	Philips	RRID:SCR_020411	
Pipette Tups (1-10 mL)	USA Scientific	Cat#1051-0000	
Poly(vinylpyrrolidone) (PVP; molecular weight [MW] = 40,000)	Alfa Aesar	CAS: 9003-39-8	kept in a desiccator for consistency of purity and stability
Practum Precision Balance	Sartorius	Cat# PRACTUM1102-1S	
PTFE Magnetic Stir Bar (12.7 mm)	Fisher Scientific	Cat#14-513-93	
PTFE Magnetic Stir Bar (25.4 mm)	Fisher Scientific	Cat#14-513-94	
Quartz Cuvette (length $\times$ width $\times$ height: 10 mm $\times$ 12.5 mm $\times$ 45 mm)	Fisher Scientific	Cat#14-958-126	
Round Bottom Heating Mantle 120 V 250 mL	Fisher Scientific	Cat#11-476-004	
SmartLab Studio II	Rigaku		https://www.rigaku.com/products/xrd/studio
Sodium borohydride (NaBH_4 , 97+%)	Alfa Aesar	CAS: 16940-66-2	kept in a desiccator for consistency of purity and stability
SureOne Pipette Tips (0.1-10 μ L)	Fisher Scientific	Cat#02-707-437	
Tacta Mechanical Pipette (P10)	Sartorius	Cat#LH-729020	
Tacta Mechanical Pipette (P1000)	Sartorius	Cat#LH-729070	
Tacta Mechanical Pipette (P10000)	Sartorius	Cat#LH-729090	
Tacta Mechanical Pipette (P20)	Sartorius	Cat#LH-729030	
Tacta Mechanical Pipette (P200)	Sartorius	Cat#LH-729060	
Tin (IV) chloride (SnCl_4 , 99.99%)	Alfa Aesar	CAS: 7646-78-8	kept in the fume hood and sealed with Parafilm between uses to avoid exposure to ambient conditions
Trisodium citrate dihydrate ($\text{C}_6\text{H}_5\text{Na}_3\text{O}_7 \cdot 2\text{H}_2\text{O}$, 99%)	Alfa Aesar	CAS: 6132-04-3	kept in a desiccator for consistency of purity and stability
Zero-Background Si Sample Holder	Rigaku		