

Materials List for:

Fabrication of Spherical and Worm-shaped Micellar Nanocrystals by Combining Electrospray, Self-assembly, and Solvent-based Structure Control

Xinyi Ding^{1,2,3}, Yuxiang Sun^{1,2,3}, Yanming Chen^{1,2,3}, Wanchuan Ding^{1,2,3}, Steven Emory^{1,2,3,4}, Tianhao Li^{1,2,3}, Zixing Xu^{1,2,3}, Ning Han^{1,2,3}, Jun Wang^{1,2,3}, Gang Ruan^{1,2,3}

¹Department of Biomedical Engineering, College of Engineering and Applied Sciences, Nanjing University

²Institute of Materials Engineering, College of Engineering and Applied Sciences, Nanjing University

³Collaborative Innovation Center of Chemistry for Life Sciences, Nanjing University

⁴Department of Chemistry, Western Washington University

Correspondence to: Gang Ruan at gangruan@nju.edu.cn

URL: <https://www.jove.com/video/56657>

DOI: [doi:10.3791/56657](https://doi.org/10.3791/56657)

Materials

Name	Company	Catalog Number	Comments
Hydrophobic quantum dots	Ocean Nanotech	QSP	Solid hydrophobic CdSe/ZnS quantum dots. Peak fluorescence emission wavelength is 605 nm.
Poly(styrene)-b-poly(ethylene glycol) (PS-PEG)	Sigma-Aldrich	666476-500MG	Molecular weight of PS segment is 9.5 kDa and that of PEG segment is 18.0 kDa.
Poly(vinyl alcohol) (PVA)	Sigma-Aldrich	363170-500G	Molecular weight 13–23 kDa, 87–89% hydrolyzed.
Tetrahydrofuran (THF)	Sinopharma Chemical Reagent	80124418	
Chloroform	Sinopharma Chemical Reagent	40007960	
Syringe pumps	Bao Ding Shen Chen	SPLab01	
Tubing	Shanghei Lai Xing		2 mm outer diameter and 1.8 mm inner diameter PTFE tubing.
Syringes	Yi Ming	5.CC	5 mL disposable syringe made of PTFE.
High voltage power supply	Dong Wen	DW Series	Direct current power supply (0–50 kV range).
Electrospray coaxial nozzle	Hunan Chang Sha Na Yi		Stainless steel assembly. Inner capillary needle was a 27 gauge (outer diameter 500 µm; inner diameter 300 µm). Outer capillary was a 20 gauge (outer diameter 1,000 µm; inner diameter 500 µm).
Vortexer	Xi'an HEB Biotechnology Co., Ltd. China	MX-S	MX-S with wide speed range of 0–2,500 rpm, stepless speed regulation, touch and continuous operations.
Steel ring	Yiwu Wan Tu		Rings with a range of diameters (0.8–1.8 cm) can be constructed. For example, a 1.3 cm diameter ring was constructed by curling an approximately 25 cm (length) of 0.5-mm diameter (24 gauge, AWG) steel wire.
Glass collecting dish	Grainger	1u5084	25-mm height and 120-mm diameter glass dish.
15 mL centrifuge tube	Jiangsu Xinkang Medical Instrument Co., Ltd.	X-407	Centrifuge tube is made of transparent polypropylene (PP).