

Materials List for:

Rendering SiO₂/Si Surfaces Omniphobic by Carving Gas-Entrapping Microtextures Comprising Reentrant and Doubly Reentrant Cavities or Pillars

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Materials

Name	Company	Catalog Number	Comments
AZ-5214 E photoresist	Merck	DEAA070796-0W59	Photoresist, flammable liquid
AZ-726 MIF developer	Merck	10055824960	To develop photoresist
Confocal microscopy	Zeiss	Zeiss LSM710	Upright confocal microscope to visualize liquid meniscus shape
Deep ICP-RIE	Oxford Instruments	Plasmlab system100	Silicon etching tool
Direct writer	Heidelberg Instruments	µPG501	Direct-writing system
Drop shape analyzer	KRUSS	DSA100	To measure contact angle
Hexadecane	Alfa Aesar	544-76-3	Test liquid
Highspeed imaging camera	Phantom vision research	v1212	To image droplet bouncing
HMDS vapor prime	Yield Engineering systems		
Hot plate	Cost effective equipments	Model 1300	
Hydrogen peroxide 30%	Sigma Aldrich	7722-84-1	To prepare piranha solution
Imaris software	Bitplane	Version 8	Post process confocal microscopy images
Nile Red	Sigma Aldrich	7385-67-3	Fluorescent dye for hexadecane
Nitrogen gas	KAUST lab supply		To dry the wafer
Petri dish	VWR	HECH41042036	
Reactive-Ion Etching (RIE)	Oxford Instruments	Plasmlab system100	Silica etching tool
Reflectometer	Nanometrics	Nanospec 6100	To check remaining oxide layer thickness
Rhodamine B (Acros)	Fisher scientific	81-88-9	Fluorescent dye for water
SEM stub	Electron Microscopy Sciences	75923-19	
SEM-Quanta 3D	FEI	Quanta 3D FEG Dual Beam	
Silicon wafer	Silicon Valley Microelectronics		Single side polished, 4" diameter, 500 µm thickness, 2.4 µm thick oxide layer
Spin coater	Headway Research, Inc	PWM32	
Spin rinse dryer	MicroProcess technology	Avenger Ultra -Pure 6	Dry the wafers after piranha clean
Sulfuric acid 96%	Technic	764-93-9	To prepare piranha solution
Tanner EDA L-Edit software	Tanner EDA, Inc.	version15	Layout design
Thermal oxide growth	Tystar furnace		To grow thermal oxide in patterned silicon wafer
Tweezers	Excelta	490-SA-PI	Wafer tweezer
Vacuum oven	Thermo Scientific	13-258-13	

Water	Milli-Q	Advantage A10	Test liquid
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