

Materials List for:

Fabrication of Low Temperature Carbon Nanotube Vertical Interconnects Compatible with Semiconductor Technology

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Materials

Name	Company	Catalog Number	Comments
Si (100) wafer 4"	International Wafer Service		Resistivity: 2-5 mΩ-cm, thickness: 525 μm
Ti-sputter target (99.995% purity)	Praxair		
Al (1% Si)-sputter target (99.999% purity)	Praxair		
Co (99.95% purity)	Kurt J. Lesker		
SPR3012 positive photoresist	Dow Electronic Materials		
MF-322 developer	Dow Electronic Materials		
HNO ₃ (99.9%)	KMG Ultra Pure Chemicals		
HNO ₃ (69.5%)	KMG Ultra Pure Chemicals		
HF 0.55%	Honeywell		
Tetrahydrofuran	JT Baker		
Acetone	Sigma-Aldrich		
ECI3027 positive photoresist	AZ		
Tetraethyl orthosilicate (TEOS)	Praxair		
N ₂ (99.9990%)	Praxair		
O ₂ (99.9999%)	Praxair		
CF ₄ (99.9970%)	Praxair		
Cl ₂ (99.9900%)	Praxair		
HBr (99.9950%)	Praxair		
Ar (99.9990%)	Praxair		
C ₂ F ₆ (99.9990%)	Praxair		
CHF ₃ (99.9950%)	Praxair		
H ₂ (99.9950%)	Praxair		
C ₂ H ₂ (99.6000%)	Praxair		
EVG 120 coater/developer	EVG		
ASML PAS5500/80 waferstepper	ASML		
SPTS Omega 201 plasma etcher	SPTS		Used for Si and metal etching
SPTS Sigma sputter coater	SPTS		
Novellus Concept One PECVD	LAM		
Drytek 384T plasma etcher	LAM		Used for oxide etching
CHA Solution e-beam evaporator	CHA		
AIXTRON BlackMagic Pro CVD tool	AIXTRON		Carbon nanotube growth

Philips XL50 scanning electron microscope	FEI		
Tepla 300	PVA TePla		Resist plasma stripper
Avenger rinser dryer	Microporcess Technologies		
Leitz MPV-SP reflecometer	Leitz		
Renishaw inVia Raman spectroscopy	Renishaw		
Agilent 4156C parameter spectrum analyzer	Agilent		
Cascade Microtech probe station	Cascade Microtech		