

# APPROVED MATERIALS

## Equipment

Comment **No acids or bases**

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1165 Solvent Wetbench

6061 Aluminum  
Acetone  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
AZ Developer 1:1  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Cytop (cured thin film)  
Developer AZ 327 MIF  
Developer AZ 400K  
Developer AZ 400K diluted 4:1  
Developer AZ 726 MIF  
Developer AZ 917 MIF  
Developer AZ(R ) 300 MIF  
Developer MF-24A  
Developer MF-26A  
Developer MF-319  
Developer MF-321  
Developer PPD-450  
Developer Shipley BPR  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam resist XR-1541  
E-beam Resist ZEP  
Ethyl Lactate  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene

# APPROVED MATERIALS

## Equipment

Comment **No acids or bases**

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1165 Solvent Wetbench

Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
Lithium Niobate (substrate)  
ma-D 500 Series Developer  
ma-N 2400 Series Negative Photoresist  
Manganese  
Methanol  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Organosilicate Glass (already coated)  
Palladium  
PGMI SF Series Resists  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist remover 1165  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827

# APPROVED MATERIALS

## Equipment

Comment **No acids or bases**

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1165 Solvent Wetbench

Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist XR-1541 E-Beam Resist in MIBK  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
ProTek PSB Patterned Si Etch Coating  
Pyralex AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Scotch tape 3M  
Scotch Tape 3M (double sided)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
TechniStrip Ni555  
Teflon - thin film  
Titanium  
Titanium Nitride  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)

# APPROVED MATERIALS

## Equipment

Comment **No acids & bases**

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70 PECVD

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum oxide  
Ammonia/Inert gas mixture  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Lithium Niobate (substrate)  
Molybdenum  
Nickel  
Nickel-Chromium  
Niobium  
Nitrogen  
Nitrous oxide  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silane 2% in N<sub>2</sub>  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)

# APPROVED MATERIALS

## Equipment

Comment **No acids & bases**

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70 PECVD

Silver  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Zinc oxide  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment

Comment **No III-V materials**

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70 RIE Oxide Etch

Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fomblin®  
Fused Silica (amorphous quartz) Substrate  
Germanium  
Halocarbon 14 (CF4)  
Halocarbon 23 (CHF3)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Nitrogen  
Oxygen  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-germanium (substrate or film)  
Sulfur hexafluoride  
UVN 2300-0.5 Negative DUV Photoresist  
VM-651 (solvent for PI-2556)

# APPROVED MATERIALS

## Equipment Comment

770 ECR, III-V Semi Etch

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Argon  
Boron A Boron Spin-on Dopant  
Boron trichloride  
Carbon (diamond & graphite)  
Chlorine  
Chromium  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fomblin®  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Graphene  
Halocarbon 14 (CF<sub>4</sub>)  
Hydrogen  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lithium Niobate (substrate)  
ma-N 2400 Series Negative Photoresist  
Methane  
Molybdenum  
Nitrogen  
Oxygen  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805

# APPROVED MATERIALS

## Equipment Comment

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770 ECR, III-V Semi Etch

Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
Quartz (pure SiO<sub>2</sub>, not glass)  
Santovac 5 Polyphenyl Ether Lubricant  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Spin-on Glass 700F (undoped)  
Sulfur hexafluoride  
Titanium  
Tungsten Carbide  
UVN 2300-0.5 Negative DUV Photoresist



# APPROVED MATERIALS

## Equipment

Comment **No SU-8**

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770 ICP Metal Etch

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Argon  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Boron trichloride  
Carbon (diamond & graphite)  
Chlorine  
Chromium  
Cool Grease 7016  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Diffusion pump fluid Santovac 5  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-beam Resist ZEP  
Fomblin®  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Halocarbon 14 (CF<sub>4</sub>)  
Halocarbon 23 (CHF<sub>3</sub>)  
Helium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Magnesium Oxide Single Crystal  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium

# APPROVED MATERIALS

## Equipment

Comment **No SU-8**

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770 ICP Metal Etch

Niobium Nitride  
Nitrogen  
Oxygen  
Palladium  
Parylene  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide HD-8820 (baked or cured)  
Quartz (pure SiO<sub>2</sub>, not glass)  
Santovac 5 Polyphenyl Ether Lubricant  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Sulfur hexafluoride  
Tantalum  
Titanium  
Titanium Nitride  
Titanium oxide

# APPROVED MATERIALS

## Equipment

Comment **No SU-8**

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770 ICP Metal Etch

Tungsten Carbide

Tungsten Silicide (WSi<sub>2</sub>)

Tungsten Sulfide

UVN 2300-0.5 Negative DUV Photoresist

Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

790-2 ICP Plasma Etch

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Ferrite BiFeO<sub>3</sub>  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Circuit Board (Rogers 3XXX series)  
Cobalt  
Copper  
Crystal Bond 500 Series  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam resist XR-1541  
E-beam Resist ZEP  
Fomblin®  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Halocarbon 14 (CF<sub>4</sub>)  
Halocarbon 23 (CHF<sub>3</sub>)  
Halocarbon C318  
Helium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
KL1600 Series Photoresist  
KL5300 Series Photoresist

# APPROVED MATERIALS

## Equipment Comment

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790-2 ICP Plasma Etch

Lead Zirconium Titanate (PZT)  
Lithium Niobate (substrate)  
ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Molybdenum Sulfide  
Nichrome Etchant  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Oxygen  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 Series  
Platinum  
PMMA (solid piece)  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284

# APPROVED MATERIALS

## Equipment Comment

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790-2 ICP Plasma Etch

Polyimide HD-8820 (baked or cured)  
PVDF PolyVinylidene Fluoride  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Sulfur hexafluoride  
Tantalum  
Teflon - thin film  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium Oxide  
Zinc oxide  
Zirconium  
Zirconium Oxide (ZrO<sub>2</sub>)

# APPROVED MATERIALS

## Equipment

Comment **No KOH or KI etchants**

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Aluminum Etchant Wetbench

Acetic acid  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Etchant Type A  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Ammonium hydroxide  
Ammonium Persulfate 20%  
Ammonium Phosphate  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (crucibles)  
Carbon (diamond & graphite)  
Chromium Etchant CR-7  
Chromium  
Chromium Etchant 1020  
Chromium Etchant CEP-200  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Copper  
Copper Etchant APS-100  
Cyclic Olefin Copolymer (substrate film)  
Defreckling aluminum etch  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Ferric Chloride  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Gold-Tin Die Attach  
Graphene  
Hydrogen peroxide  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
KL1600 Series Photoresist  
KL5300 Series Photoresist

# APPROVED MATERIALS

## Equipment

Comment **No KOH or KI etchants**

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Aluminum Etchant Wetbench

Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Molybdenum Sulfide  
Nichrome Etchant  
Nichrome Etchant TFN  
Niobium  
Nitric acid  
Phosphoric acid  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
Polycarbonate  
Polyester PET (Transparency) Film  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Tantalum Nitride  
Teflon - thin film  
Titanium  
Titanium Nitride  
Transetch N  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)



# APPROVED MATERIALS

## Equipment Comment

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Angstrom E-beam Evaporation

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum oxide  
Argon  
Carbon (crucibles)  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Krypton  
ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070

# APPROVED MATERIALS

## Equipment Comment

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Angstrom E-beam Evaporation

Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist STR 1045  
Platinum  
PMMA (solid piece)  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide Film Tape 5413 (3M)  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Stainless Steel  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Titanium  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
UVN 2300-0.5 Negative DUV Photoresist  
Xenon

# APPROVED MATERIALS

## Equipment

Comment **Only PR, Si, SiO<sub>2</sub>, and Si<sub>3</sub>N<sub>4</sub> are allowed in the recirculation baths.**

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BOE/HF Wetbench

Aluminum fluoride  
Aluminum oxide  
Ammonium fluoride  
Buffered Oxide Etchants (BOE)  
Carbon (diamond & graphite)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Hydrofluoric acid, 49%  
Hydrofluoric acid, 49% Action Technologies etchant  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Quartz (pure SiO<sub>2</sub>, not glass)  
Sapphire (not baths, only beakers)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-germanium (substrate or film)  
Teflon - thin film  
Titanium  
UVN 2300-0.5 Negative DUV Photoresist

# APPROVED MATERIALS

## Equipment Comment

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Canon 3-inch Contact Aligner

Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Graphene  
Iron-Chrome Alloy (Fe-Cr)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist stripper AZ 300T  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
Polyester PET (Transparency) Film  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-germanium (substrate or film)  
Spin-on Glass 700F (undoped)  
Teflon - thin film  
Titanium Nitride  
UVN 2300-0.5 Negative DUV Photoresist

# APPROVED MATERIALS

## Equipment Comment

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Classroom Aluminum Anneal Tube

Aluminum  
Boron A Boron Spin-on Dopant  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Hydrogen mixture (5%H<sub>2</sub> in N<sub>2</sub>)  
Nitrogen  
Phosphorous Spin-on-Dopant P499-P512  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-germanium (substrate or film)  
Spin-on Glass 700F (undoped)  
Tungsten Silicide (WSi<sub>2</sub>)

# APPROVED MATERIALS

Equipment  
Comment

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Classroom Wet/Dry Oxidation Tube

Doped Silicon (As, B, Ge, Ga, P, Sb)

Oxygen

Quartz (pure SiO<sub>2</sub>, not glass)

Silicon

Silicon dioxide

Silicon monoxide

Silicon nitride

# APPROVED MATERIALS

## Equipment Comment

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Cooke Polymer Vacuum Anneal Oven

6061 Aluminum  
ADEX Series TDFS (SU8 Laminate)  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum Nitride  
Apiezon Wax W  
Circuit Board laminate Ultralam 38XX  
Crystal Bond 500 Series  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Gold-Tin Die Attach  
Graphene  
Indium  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Molybdenum Sulfide  
Niobium  
Organosilicate Glass (already coated)  
Palladium  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH

# APPROVED MATERIALS

## Equipment Comment

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Cooke Polymer Vacuum Anneal Oven

Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide 41176 (liquid or unbaked)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating HD-4110 (liquid or unbaked)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI25XX Series (liquid or unbaked)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI26XX Series (liquid or unbaked)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Coating PI27XX Series (liquid or unbaked)  
Polyimide Durimide™ 284  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
Polystyrene-block-polyisoprene  
PVDF PolyVinylidene Fluoride  
Pyrалux AP (polyimide double sided copper clad tape)  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon-carbide  
Silicon-germanium (substrate or film)  
SUEx Series TDFS (SU8 Laminate)  
Teflon - thin film  
Teflon diluted in C5-18  
Titanium  
Titanium Nitride  
Tungsten Carbide  
Tungsten Sulfide  
UVN 2300-0.5 Negative DUV Photoresist  
Wafer-mount 562 Thermoplastic Film Adhesive



# APPROVED MATERIALS

## Equipment Comment

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Corrosive Wetbench - Classroom

Aluminum  
Aluminum fluoride  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Ammonium fluoride  
Ammonium hydroxide  
Ammonium Persulfate 20%  
Ammonium Phosphate  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Chromium Etchant CR-7  
Chromium  
Chromium Etchant 1020  
Chromium Etchant CEP-200  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Copper Etchant APS-100  
Crystal Bond 500 Series  
Defreckling aluminum etch  
Developer MF-24A  
Developer MF-26A  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Hydrochloric acid  
Hydrofluoric acid, 49%  
Hydrogen peroxide  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Indium-Tin Oxide (sputter target)  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
Manganese  
Nichrome Etchant  
Nichrome Etchant TFN

# APPROVED MATERIALS

## Equipment Comment

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Corrosive Wetbench - Classroom

Nickel  
Nickel Etchant TCB  
Nitric acid  
Organosilicate Glass (already coated)  
PC Electroless Copper Solution Part C  
PC Electroless Copper Solution Part D  
Phosphoric acid  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist Intervia BPN  
Photoresist SPR 955  
Photoresist SU-8 Series  
Polycarbonate  
Polyester PET (Transparency) Film  
Potassium hydroxide  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Sodium hydroxide  
Spin-on Glass 700F (undoped)  
Sulfuric acid  
Tantalum Nitride  
Teflon - thin film  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

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CVC-601 DC Sputterer	Al <sub>2</sub> O <sub>3</sub> (sapphire substrate) Aluminum Aluminum Gallium Arsenide Aluminum Nitride Aluminum oxide Antimony Argon Barium Bismuth Oxide (substrate only) Barium Fluoride substrate (BaF <sub>2</sub> ) Barium Lead Oxide (substrate only) Boron A Boron Spin-on Dopant Boron Sputter Target (user owned) Calcium Fluoride (CaF <sub>2</sub> ) substrate Carbon nanotubes Carbon Tape (discuss with staff prior to use) Chromium Cobalt Copper Cyclic Olefin Copolymer (substrate film) Cytop (cured thin film) Doped Silicon (As, B, Ge, Ga, P, Sb) E-Beam Resist Calixarene E-beam resist XR-1541 E-beam Resist ZEP Fluorolink MD 700 (cured) Fused Silica (amorphous quartz) Substrate Gallium Antimonide Gallium Arsenide + (S passivation) substrate Gallium Nitride Gallium-arsenide (substrate) Germanium Germanium-tin (GeSn) (pre-deposited film) Glass (not pure SiO <sub>2</sub> quartz) Gold Graphene Indium Aluminum Arsenide Indium Arsenide Indium Gallium Arsenide Indium Phosphide Indium/Gallium Phosphide Indium/Gallium/Arsenic Phosphide Indium-Tin Oxide (sputter target) Iron-Chrome Alloy (Fe-Cr) Kapton Solid Film (not tape) KL1600 Series Photoresist KL5300 Series Photoresist Lanthanum Lutetium Oxide (substrate only) Lanthanum Oxide (substrate only)
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# APPROVED MATERIALS

## Equipment Comment

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CVC-601 DC Sputterer

Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
Lutetium Oxide (substrate only)  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Norland Optical Adhesive 73  
Palladium  
Parylene  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Photoresist XR-1541 E-Beam Resist in MIBK  
Platinum  
PMMA (solid piece)  
PMMA 495  
PMMA 950  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
PVDF PolyVinylidene Fluoride

# APPROVED MATERIALS

## Equipment Comment

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CVC-601 DC Sputterer

Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Titanium  
Titanium Nitride  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
UVN 2300-0.5 Negative DUV Photoresist  
Zirconium Alloy - Zircaloy-4 (substrate)  
Zirconium Silicide (ZrSi<sub>2</sub>)

## APPROVED MATERIALS

### Equipment

Comment **BiFeO<sub>3</sub>, SrRuO<sub>3</sub>, SrTiO<sub>3</sub> allowed as substrates not targets**

---

Denton RF Sputterer

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Argon  
Barium Bismuth Oxide (substrate only)  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Barium Lead Oxide (substrate only)  
Bismuth Ferrite BiFeO<sub>3</sub>  
Boron A Boron Spin-on Dopant  
Boron Sputter Target (user owned)  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon nanotubes  
Chromium  
Cobalt  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Epoxy Mount (Allied High Tech)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Indium-Tin Oxide (sputter target)  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
Lanthanum Lutetium Oxide (substrate only)  
Lanthanum Oxide (substrate only)  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
Lutetium Oxide (substrate only)  
Molybdenum

## APPROVED MATERIALS

### Equipment

Comment **BiFeO<sub>3</sub>, SrRuO<sub>3</sub>, SrTiO<sub>3</sub> allowed as substrates not targets**

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Denton RF Sputterer

Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Oxygen  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Platinum  
Polycarbonate  
Polyester PET (Transparency) Film  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Steel  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Yttrium Oxide  
Zinc oxide  
Zirconium  
Zirconium Alloy - Zircaloy-4 (substrate)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

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Dielectric E-beam Evaporator

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Bismuth Oxide (substrate only)  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Barium Lead Oxide (substrate only)  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (crucibles)  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Cobalt  
Cyclic Olefin Copolymer (substrate film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Epoxy Mount (Allied High Tech)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold (substrate only)  
Gold-Tin Die Attach  
Graphene  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lanthanum Lutetium Oxide (substrate only)  
Lanthanum Oxide (substrate only)  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
Lutetium Oxide (substrate only)  
Magnesium Iron Silicate  
ma-N 2400 Series Negative Photoresist  
Nickel



# APPROVED MATERIALS

## Equipment Comment

Dielectric E-beam Evaporator

Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Norland Electronic Adhesive 123  
Oxygen  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA 495  
PMMA 950  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polystyrene (not foam)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Spin-on Glass 700F (undoped)  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Titanium

# APPROVED MATERIALS

Equipment  
Comment

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Dielectric E-beam Evaporator

Titanium Nitride

Titanium oxide

Tungsten

Tungsten Carbide

Tungsten Silicide (WSi<sub>2</sub>)

UVN 2300-0.5 Negative DUV Photoresist

Yttrium

Yttrium Oxide

Zinc Selenide (Substrate)

## APPROVED MATERIALS

### Equipment

Comment **Copper, gold silver, and titanium allowed if never exposed during processing**

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EVG Wafer Bonding Stations

Aluminum Gallium Arsenide  
Boron A Boron Spin-on Dopant  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Phosphorous Spin-on-Dopant P499-P512  
Polyimide 41176 (baked or cured)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silver  
Spin-on Glass 700F (undoped)  
Titanium

# APPROVED MATERIALS

## Equipment Comment

Filmetrics F-20 Optical Reflectometer

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Die Attach  
Graphene  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Indium-Tin Oxide (sputter target)  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Manganese  
Nickel

# APPROVED MATERIALS

## Equipment Comment

Filmetrics F-20 Optical Reflectometer

Niobium  
Niobium Nitride  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
Polymer Elvamide 8061  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
PVDF PolyVinylidene Fluoride  
Pyr lux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide

# APPROVED MATERIALS

## Equipment Comment

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Filmetrics F-20 Optical Reflectometer

Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium Oxide  
Zinc oxide  
Zinc Selenide (Substrate)  
Zirconium  
Zirconium Alloy - Zircaloy-4 (substrate)  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

Equipment  
Comment

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General Lab/Staff Use

Fomblin®  
Lo-Na Hand Soap  
NovaClean Floor Cleaner  
Stainless Steel Cleaner & Polish (3M)  
Thermal H5S (Julabo chiller)  
Thermal HL45 (Julabo chiller)  
Thermal HL80 (Julabo chiller)  
TKO FF (vacuum flushing fluid)

# APPROVED MATERIALS

## Equipment Comment

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Heatpulse 610 Rapid Thermal Annealer

Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Chromium  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Graphene  
Hydrogen mixture (5%H<sub>2</sub> in N<sub>2</sub>)  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Manganese  
Molybdenum  
Nickel  
Nickel-Chromium  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Spin-on Glass 700F (undoped)  
Tantalum  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Zinc oxide



## APPROVED MATERIALS

### Equipment

Comment **Top layer must be silicon, silicon oxide, or silicon nitride**

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HMDS Primer

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Carbon (diamond & graphite)  
Circuit Board laminate Ultralam 38XX  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Graphene  
Hexamethyldisilazane (HMDS)  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Niobium  
Palladium  
Platinum  
Polyester PET (Transparency) Film  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Tantalum Nitride  
Titanium  
Tungsten Silicide (WSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

III-V Semiconductor Bench

6061 Aluminum  
Acetic acid  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Etchant Type A  
Aluminum fluoride  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Ammonium fluoride  
Ammonium hydroxide  
Ammonium Phosphate  
Apiezon Wax W  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Boron A Boron Spin-on Dopant  
Bromine Water  
Buffered Oxide Etchants (BOE)  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Citric Acid (C<sub>6</sub>H<sub>8</sub>O<sub>7</sub>)  
Copper  
Defreckling aluminum etch  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
ElectroScrub3 (NH<sub>4</sub>OH)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Hydrobromic acid  
Hydrochloric acid  
Hydrofluoric acid, 49% Action Technologies etchant  
Hydrogen peroxide  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface

# APPROVED MATERIALS

## Equipment Comment

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III-V Semiconductor Bench

Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
Lithium Niobate (substrate)  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Nickel  
Niobium  
Nitric acid  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Phosphoric acid  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA 495  
PMMA 950  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide HD-8820 (baked or cured)  
Pyrulux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide

# APPROVED MATERIALS

## Equipment Comment

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III-V Semiconductor Bench	Silicon nitride
	Silicon-carbide
	Silicone oil
	Silicon-germanium (substrate or film)
	Silver
	Silver Nitrate Solution (AgNO <sub>3</sub> )
	Spin-on Glass 700F (undoped)
	Sulfuric acid
	Tantalum
	Tartaric Acid
	Teflon - thin film
	Titanium
	Titanium Nitride
	Titanium oxide
	Tungsten
	Tungsten Carbide
	UVN 2300-0.5 Negative DUV Photoresist
	Yttrium
	Zinc oxide
	Zirconium Oxide (ZrO <sub>2</sub> )

# APPROVED MATERIALS

## Equipment Comment

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Indium Evaporator

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (Deposition Source)  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Alloy  
Gold-Tin Die Attach  
Graphene  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Niobate (substrate)  
Molybdenum  
Nickel  
Nickel-Chromium  
Palladium  
Photoresist AZ 12XT-20PL series  
Platinum  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)

# APPROVED MATERIALS

Equipment  
Comment

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Indium Evaporator

Silver  
Strontium Ruthenate  $\text{SrRuO}_3$   
Strontium Titanate Nb Doped ( $\text{SrTiO}_3+\text{Nb}$ )  
Strontium Titanate  $\text{SrTiO}_3$   
Tantalum  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide ( $\text{WSi}_2$ )  
Zinc oxide

# APPROVED MATERIALS

## Equipment Comment

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Ion Mill

Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Nitride  
Aluminum oxide  
Argon  
Carbon (diamond & graphite)  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-beam Resist ZEP  
Fused Silica (amorphous quartz) Substrate  
Germanium  
Gold  
Graphene  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Magnesium Oxide Single Crystal  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA (solid piece)  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polyimide 41176 (baked or cured)

# APPROVED MATERIALS

## Equipment Comment

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Ion Mill

Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Tantalum  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
UVN 2300-0.5 Negative DUV Photoresist  
Zirconium  
Zirconium Alloy - Zircaloy-4 (substrate)  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)



# APPROVED MATERIALS

## Equipment Comment

K&S 4124 Gold Ball Bonder

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Ceramabond 668  
Circuit Board (Rogers 3XXX series)  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Alloy  
Gold-Tin Die Attach  
Graphene  
Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Lithium Fluoride substrate (LiF)  
Molybdenum Sulfide  
Nickel  
Niobium  
Niobium Nitride  
Palladium  
Phenolic 74033 Butvar Resin  
Phosphorous Spin-on-Dopant P499-P512  
Platinum  
Printed Circuit Board (generic)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)

# APPROVED MATERIALS

## Equipment Comment

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K&S 4124 Gold Ball Bonder

Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Spin-on Glass 700F (undoped)  
Tantalum  
Teflon - thin film  
Tin Silver Copper Solder  
Titanium  
Titanium Nitride  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

Karl Suss MA6/BA6 Contact Aligner

ADEX Series TDFS (SU8 Laminate)  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Cytop (cured thin film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist

# APPROVED MATERIALS

## Equipment Comment

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Karl Suss MA6/BA6 Contact Aligner

Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrile  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
Polystyrene (not foam)  
ProTek PSB Patterned Si Etch Coating  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass

# APPROVED MATERIALS

## Equipment Comment

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Karl Suss MA6/BA6 Contact Aligner

Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
SUEX Series TDFS (SU8 Laminate)  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
VM-651 (solvent for PI-2556)  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

Karl Suss MJB-3 Contact Aligner

3-aminopropyltriethoxysilane  
ADEX Series TDFS (SU8 Laminate)  
Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Boron Nitride  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
Lithium Niobate (substrate)

# APPROVED MATERIALS

## Equipment Comment

Karl Suss MJB-3 Contact Aligner

ma-N 2400 Series Negative Photoresist  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
PGMI SF Series Resists  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
ProTek PSB Patterned Si Etch Coating  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass

# APPROVED MATERIALS

## Equipment Comment

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Karl Suss MJB-3 Contact Aligner

Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
SUEX Series TDFS (SU8 Laminate)  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
VM-651 (solvent for PI-2556)  
Yttrium  
Zirconium Silicide (ZrSi<sub>2</sub>)



# APPROVED MATERIALS

## Equipment Comment

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Karl Suss MJB-3 IR Backside Contact Aligner	Al <sub>2</sub> O <sub>3</sub> (sapphire substrate) Aluminum Aluminum Gallium Arsenide Aluminum Nitride Aluminum oxide Barium Fluoride substrate (BaF <sub>2</sub> ) Bismuth Selenide (Bi <sub>2</sub> Se <sub>3</sub> ) substrate Boron A Boron Spin-on Dopant Calcium Fluoride (CaF <sub>2</sub> ) substrate Carbon (diamond & graphite) Chromium Circuit Board (Rogers 3XXX series) Circuit Board laminate Ultralam 38XX Cobalt Copper Doped Silicon (As, B, Ge, Ga, P, Sb) Fused Silica (amorphous quartz) Substrate Gallium Antimonide Gallium Arsenide + (S passivation) substrate Gallium Nitride Gallium-arsenide (substrate) Germanium Germanium-tin (GeSn) (pre-deposited film) Glass (not pure SiO <sub>2</sub> quartz) Gold Graphene Hafnium Oxide (substrate) Indium Indium Aluminum Arsenide Indium Arsenide Indium Gallium Arsenide Indium Phosphide Indium Tin Oxide (thin film) Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface Indium/Gallium Phosphide Indium/Gallium/Arsenic Phosphide Iron-Chrome Alloy (Fe-Cr) Kapton Solid Film (not tape) KL1600 Series Photoresist KL5300 Series Photoresist Lead Magnesium Niobate-lead Titanate (PMN-PT) Lead Zirconium Titanate (PZT) Lithium Fluoride substrate (LiF) ma-N 2400 Series Negative Photoresist Molybdenum Molybdenum Sulfide Nickel Nickel-Chromium
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# APPROVED MATERIALS

## Equipment Comment

Karl Suss MJB-3 IR Backside Contact Aligner

Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
ProTek PSB Patterned Si Etch Coating  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride

## APPROVED MATERIALS

### Equipment Comment

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Karl Suss MJB-3 IR Backside Contact Aligner	Silicon-carbide Silicon-germanium (substrate or film) Silver Spin-on Glass 700F (undoped) Strontium Ruthenate SrRuO <sub>3</sub> Strontium Titanate Nb Doped (SrTiO <sub>3</sub> +Nb) Strontium Titanate SrTiO <sub>3</sub> Tantalum Teflon - thin film Tin Titanium Titanium Nitride Titanium oxide Tungsten Tungsten Carbide Tungsten Silicide (WSi <sub>2</sub> ) Tungsten Sulfide Ultron Blue Mounting Tape UVN 2300-0.5 Negative DUV Photoresist VM-651 (solvent for PI-2556) Yttrium Zirconium Silicide (ZrSi <sub>2</sub> )
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# APPROVED MATERIALS

## Equipment Comment

Karl Suss RA-120 Wafer Scribe

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Chromium  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Die Attach  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Molybdenum  
Nickel  
Niobium  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Platinum  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Tantalum  
Teflon - thin film  
Titanium  
Titanium Nitride  
Trichloro(1,1,2,2-perfluorooctyl)silane

# APPROVED MATERIALS

**Equipment**  
**Comment**

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Karl Suss RA-120 Wafer Scribe

Tungsten  
Tungsten Silicide (WSi<sub>2</sub>)  
Ultron Blue Mounting Tape

## APPROVED MATERIALS

### Equipment

Comment **No soft materials, No samples < 3mm x 3mm**

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KLA-Tencor P7

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Cytop (cured thin film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Die Attach  
Graphene  
Hafnium Oxide (substrate)  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Manganese

# APPROVED MATERIALS

## Equipment

Comment **No soft materials, No samples < 3mm x 3mm**

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KLA-Tencor P7

Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
PVDF PolyVinylidene Fluoride  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide

## APPROVED MATERIALS

### Equipment

Comment **No soft materials, No samples < 3mm x 3mm**

---

KLA-Tencor P7

Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium  
Yttrium Oxide  
Zinc oxide  
Zinc Selenide (Substrate)  
Zirconium  
Zirconium Alloy - Zircaloy-4 (substrate)  
Zirconium Oxide (ZrO<sub>2</sub>)



# APPROVED MATERIALS

## Equipment

Comment **Restricted list (for more materials see KOH Bath #2)**

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KOH Bath #1 (KOH Wetbench)

ProTek B3 Si Etch Coating

ProTek PSB Patterned Si Etch Coating

Silicon

Silicon dioxide

Silicon nitride

## APPROVED MATERIALS

### Equipment

Comment **Less materials restrictions as compared to KOH Bath #1. PDMS is covered by mech**

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KOH Bath #2 (KOH Wetbench)

Aluminum  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Molybdenum  
Platinum  
Polydimethylsiloxane (PDMS)  
ProTek B3 Primer  
ProTek B3 Si Etch Coating  
Silicon  
Silicon dioxide  
Silicon nitride  
Strontium Ruthenate SrRuO<sub>3</sub>

## APPROVED MATERIALS

### Equipment

Comment **To see what materials are allowed in the KOH Baths see KOH Bath 1 & KOH Bath 2**

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KOH Silicon Etch Wetbench (Beaker Use Only)

Aluminum  
Ammonium hydroxide  
Ammonium Sulfide + DI Water {20% or less (NH<sub>4</sub>)<sub>2</sub>S}  
Carbon (diamond & graphite)  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Gold Etchant (Potassium-iodide and iodine)  
Graphene  
Indium Phosphide  
Indium/Gallium Phosphide  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Nickel  
Nickel Etchant TCB  
Palladium  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA 495  
PMMA 950  
Potassium hydroxide  
ProTek B3 Primer  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating

## APPROVED MATERIALS

### Equipment

Comment **To see what materials are allowed in the KOH Baths see KOH Bath 1 & KOH Bath 2**

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KOH Silicon Etch Wetbench (Beaker Use Only)	ProTek PSB Primer
	ProTEK™ B1-18
	Quartz (pure SiO <sub>2</sub> , not glass)
	Silicon
	Silicon dioxide
	Silicon monoxide
	Silicon nitride
	Tantalum Nitride
	Teflon - thin film
	Tetramethylammonium hydroxide (25%) TMAH
	Titanium
	Titanium Tungsten Alloy
	UVN 2300-0.5 Negative DUV Photoresist

# APPROVED MATERIALS

## Equipment Comment

MEI Die Attacher

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum Gallium Arsenide  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Cobalt  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium-arsenide (substrate)  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Alloy  
Gold-Tin Die Attach  
Graphene  
Hydrogen mixture (5%H<sub>2</sub> in N<sub>2</sub>)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Molybdenum Sulfide  
Nickel  
Niobium  
Niobium Nitride  
Platinum  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Teflon - thin film  
Tin Silver Copper Solder  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape

# APPROVED MATERIALS

## Equipment Comment

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Metal E-beam Evaporator

3-aminopropyltriethoxysilane  
4-Methyl-1-acetoxycalixarene [mixture of [6] and [8]]  
Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Boron Nitride  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Carbon Tape (discuss with staff prior to use)  
Chromium  
Cobalt  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam resist XR-1541  
E-beam Resist ZEP  
Epoxy Mount (Allied High Tech)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist

# APPROVED MATERIALS

## Equipment Comment

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Metal E-beam Evaporator

Molybdenum  
Nickel  
Nickel-Chromium  
Niobium Nitride  
Norland Electronic Adhesive 123  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
PVDF PolyVinylidene Fluoride  
Pyralin Thinner T-9039  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide

# APPROVED MATERIALS

## Equipment Comment

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Metal E-beam Evaporator

Silicon-germanium (substrate or film)  
Silver  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Spin-on Glass 700F (undoped)  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Titanium  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
UVN 2300-0.5 Negative DUV Photoresist  
VM-651 (solvent for PI-2556)  
Zirconium Oxide (ZrO<sub>2</sub>)



# APPROVED MATERIALS

## Equipment Comment

Microautomation 1006 Dicing Saw 1

Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Cobalt  
Crystal Bond 500 Series  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Die Attach  
Graphene  
Hafnium Oxide (substrate)  
Indium (user supplied saw blade)  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium

# APPROVED MATERIALS

## Equipment Comment

Microautomation 1006 Dicing Saw 1

Niobium Nitride  
Nitrogen  
Norland Electronic Adhesive 123  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
PGMI SF Series Resists  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 955  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide HD-8820 (baked or cured)  
Polymer Elvamide 8061  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Titanium  
Titanium Nitride  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape

# APPROVED MATERIALS

Equipment  
Comment

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Microautomation 1006 Dicing Saw 1

UVN 2300-0.5 Negative DUV Photoresist  
Wafer-mount 562 Thermoplastic Film Adhesive  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

Microautomation 1006 Dicing Saw 2

3-aminopropyltriethoxysilane  
Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Nitride  
Aluminum oxide  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Cobalt  
Crystal Bond 500 Series  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Nitride  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Gold  
Gold-Tin Die Attach  
Graphene  
Hafnium Oxide (substrate)  
Indium (user supplied saw blade)  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Norland Electronic Adhesive 123  
Organosilicate Glass (already coated)  
Parylene Dimer DPX-C  
PGMI SF Series Resists  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist Intervia BPN  
Photoresist SPR 955  
Platinum

# APPROVED MATERIALS

## Equipment Comment

Microautomation 1006 Dicing Saw 2

PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide HD-8820 (baked or cured)  
Polymer Elvamide 8061  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Toluol Datacoat  
Tungsten  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape  
Wafer-mount 562 Thermoplastic Film Adhesive  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

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MRL 1 High Temp Anneal (metals)

Aluminum  
Aluminum Nitride  
Aluminum oxide  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Chromium  
Copper  
Germanium  
Hydrogen  
Iron  
Molybdenum  
Nickel  
Nickel-Chromium  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Tantalum  
Titanium  
Tungsten

# APPROVED MATERIALS

Equipment  
Comment

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MRL 2 Wet/Dry Oxidation (semiconductors)

Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Germanium  
Graphene  
Indium/Gallium Phosphide  
Oxygen  
Phosphorous Spin-on-Dopant P499-P512  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride

# APPROVED MATERIALS

## Equipment Comment

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MRL 3 Wet/Dry Oxidation (3-5 Semi's)

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum Gallium Arsenide  
Boron A Boron Spin-on Dopant  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Oxygen  
Phosphorous Spin-on-Dopant P499-P512  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Spin-on Glass 700F (undoped)



# APPROVED MATERIALS

## Equipment Comment

---

MRL 4 Low Temp Anneal (metals)

Aluminum  
Aluminum oxide  
Carbon (diamond & graphite)  
Chromium  
Cobalt  
Copper  
Germanium  
Gold  
Hydrogen  
Iron  
Manganese  
Molybdenum  
Nickel  
Niobium  
Niobium Nitride  
Organosilicate Glass (already coated)  
Palladium  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silver  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Titanium  
Titanium oxide  
Tungsten  
Tungsten/rhenium

# APPROVED MATERIALS

**Equipment**  
Comment

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MRL 6 High Temp Anneal

Carbon (diamond & graphite)  
Silicon  
Silicon monoxide  
Silicon nitride

# APPROVED MATERIALS

## Equipment Comment

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Nikon I-Line Stepper

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum oxide  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Chromium  
Cobalt  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Indium  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Manganese  
Nickel  
Niobium  
Niobium Nitride  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)

# APPROVED MATERIALS

Equipment  
Comment

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Nikon I-Line Stepper

Tantalum

Tin

Titanium

Tungsten

Tungsten Silicide (WSi<sub>2</sub>)

UVN 2300-0.5 Negative DUV Photoresist

Wafer-mount 562 Thermoplastic Film Adhesive

# APPROVED MATERIALS

Equipment  
Comment

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Nitride Strip Wetbench

Doped Silicon (As, B, Ge, Ga, P, Sb)

Phosphoric acid

Quartz (pure SiO<sub>2</sub>, not glass)

Silicon

Silicon dioxide

Silicon monoxide

Silicon nitride

Silicon-germanium (substrate or film)

Transetch N

# APPROVED MATERIALS

## Equipment Comment

Non-Litho Spin Coat Bench

3-aminopropyltriethoxysilane  
4-Methyl-1-acetoxycalixarene [mixture of [6] and [8]]  
6061 Aluminum  
Acetone  
Adhesion Concentrate QZ 3289  
Adhesion Promoter AP3000  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Apiezon Grease AP100  
Apiezon Wax L  
Apiezon Wax M  
Apiezon Wax W  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Benzotriazole  
Biphenyl (part of polymer solution)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium fluoride  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chlorobenzene  
Chromium  
Circuit Board (Rogers 3XXX series)  
Cobalt  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Cytop CTL-809M  
Cytop CT-SOLV180  
Cytop CTX-809SP2  
Diffusion pump fluid Santovac 5  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-beam resist XR-1541  
E-beam Resist ZEP  
EC Solvent 11  
Edge Bead Remover AZ PGMEA  
Edge Bead Remover NANO EBR-PG  
EPO-TEK 301, Part A (epoxy)  
FC-40 Fluorinert Electronic Liquid  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)

# APPROVED MATERIALS

## Equipment Comment

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Non-Litho Spin Coat Bench

Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Die Attach  
Graphene  
Hexamethyldisilazane (HMDS)  
Hexanes  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
ma-N 2400 Series Negative Photoresist  
Manganese  
Methanol  
Methyl methacrylate, 99%  
Molybdenum  
Molybdenum Sulfide  
mr-I 8000 Series (polymersolution for Nanoimprinter)  
n-Heptane (part of solution)  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Norland Optical Adhesive 73  
OmniCoat (SU-8 adhesion)  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
PGMI SF Series Resists  
Phosphorous Spin-on-Dopant P499-P512  
Photomask Cleaning Solution PCS-605  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020

# APPROVED MATERIALS

## Equipment Comment

Non-Litho Spin Coat Bench

Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist remover 1165  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist stripper AZ 300T  
Photoresist stripper PRS 100  
Photoresist Stripper PRX™ 127  
Photoresist stripper QZ 3322  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular  
Poly (DL-Lactide)  
Poly (DL-Lactide-CO-Glycolide)  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide 41176 (liquid or unbaked)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating HD-4110 (liquid or unbaked)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI25XX Series (liquid or unbaked)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI26XX Series (liquid or unbaked)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Coating PI27XX Series (liquid or unbaked)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
Polymer Elvamide 8061  
Polystyrene (not foam)  
ProTek B3 Primer  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating



# APPROVED MATERIALS

## Equipment Comment

Non-Litho Spin Coat Bench

ProTek PSB Primer  
ProTEK™ B1-18  
ProTEK™ Primer  
Protoresist stripper AZ 400T  
PVDF PolyVinylidene Fluoride  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Santovac 5 Polyphenyl Ether Lubricant  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Silver paint  
Spin-on Glass 700F (undoped)  
Stainless Steel  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Sylgard 18X Series (base and curing agent)  
T9039 Solvent  
Tantalum  
Teflon - thin film  
Teflon AF (amorphous fluoroplastic) Resin  
Teflon diluted in C5-18  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Toluene  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
UVN 2300-0.5 Negative DUV Photoresist  
VM-651 (solvent for PI-2556)  
Yttrium  
Zep520A  
Zinc oxide

# APPROVED MATERIALS

## Equipment Comment

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Obducat AB NIL 2.5 Nanoimprinter

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Carbon (diamond & graphite)  
Chromium  
Cobalt  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Manganese  
Methanol  
mr-I 8000 Series (polymersolution for Nanoimprinter)  
Nickel  
Niobium  
Nitrogen  
Palladium  
Photoresist SPR 955  
Platinum  
PMMA 495  
PMMA 950  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silver  
Tantalum  
Teflon - thin film  
Titanium

# APPROVED MATERIALS

**Equipment**  
**Comment**

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Obducat AB NIL 2.5 Nanoimprinter

Titanium oxide  
Tungsten

# APPROVED MATERIALS

## Equipment Comment

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Optical Microscopes (all)	6061 Aluminum Al <sub>2</sub> O <sub>3</sub> (sapphire substrate) Aluminum Aluminum Gallium Arsenide Aluminum Nitride Aluminum oxide Barium Fluoride substrate (BaF <sub>2</sub> ) Bismuth Selenide (Bi <sub>2</sub> Se <sub>3</sub> ) substrate Boron A Boron Spin-on Dopant Calcium Fluoride (CaF <sub>2</sub> ) substrate Carbon (diamond & graphite) Carbon nanotubes Chromium Circuit Board (Rogers 3XXX series) Circuit Board laminate Ultralam 38XX Cobalt Copper Crystal Bond 500 Series Cyclic Olefin Copolymer (substrate film) Cyclotene 3022-46 advanced electronics resin Cytop (cured thin film) Doped Silicon (As, B, Ge, Ga, P, Sb) E-beam resist XR-1541 Fused Silica (amorphous quartz) Substrate Gallium Antimonide Gallium Arsenide + (S passivation) substrate Gallium Nitride Gallium Oxide Gallium-arsenide (substrate) Germanium Germanium-tin (GeSn) (pre-deposited film) Glass (not pure SiO <sub>2</sub> quartz) Gold Gold-Tin Die Attach Graphene Hafnium Oxide (substrate) Indium Indium Aluminum Arsenide Indium Arsenide Indium Gallium Arsenide Indium Phosphide Indium Tin Oxide (thin film) Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface Indium tin oxide coated PET sheet Indium/Gallium Phosphide Indium/Gallium/Arsenic Phosphide Iron Iron-Chrome Alloy (Fe-Cr)
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# APPROVED MATERIALS

## Equipment Comment

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Optical Microscopes (all)	Kapton Solid Film (not tape) KL1600 Series Photoresist KL5300 Series Photoresist Lead Magnesium Niobate-lead Titanate (PMN-PT) Lead Zirconium Titanate (PZT) Lithium Fluoride substrate (LiF) ma-N 2400 Series Negative Photoresist Manganese Molybdenum Molybdenum Sulfide mr-I 8000 Series (polymersolution for Nanoimprinter) Nickel Nickel-Chromium Niobium Niobium Nitride Organosilicate Glass (already coated) Palladium Parylene Dimer DPX-C Phosphorous Spin-on-Dopant P499-P512 Photoresist AZ 12XT-20PL series Photoresist AZ 5214-E IR Photoresist AZ nLOF 2020 Photoresist AZ nLOF 2035 Photoresist AZ nLOF 2070 Photoresist AZ P4620 Photoresist Intervia BPN Photoresist LOR A Series Photoresist MMA(8.5)MAA Copolymer Series Photoresist S1805 Photoresist S1813 Photoresist S1827 Photoresist SPR 220 Photoresist SPR 505A Photoresist SPR 955 Photoresist STR 1045 Photoresist SU-8 2000 Series Photoresist SU-8 Series Platinum PMMA 495 PMMA 950 PMMA w/terminal_OH Polycarbonate Polydimethylsiloxane (PDMS) Polyester PET (Transparency) Film Polyimide 41176 (baked or cured) Polyimide Coating HD-4110 (baked or cured) Polyimide Coating PI25XX Series (baked or cured) Polyimide Coating PI26XX Series (baked or cured)
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# APPROVED MATERIALS

## Equipment Comment

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Optical Microscopes (all)

Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
Polymer Elvamide 8061  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
PVDF PolyVinylidene Fluoride  
Pyrallux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Spin-on Glass 700F (undoped)  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium  
Zinc oxide  
Zirconium  
Zirconium Alloy - Zircaloy-4 (substrate)  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

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Packaging Annealer

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Cobalt  
Copper  
Crystal Bond 500 Series  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Gold  
Gold-Tin Alloy  
Gold-Tin Die Attach  
Graphene  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Manganese  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Palladium  
Platinum  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)

# APPROVED MATERIALS

Equipment  
Comment

---

Packaging Annealer

Silver  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Tantalum  
Teflon - thin film  
Tin  
Tin Silver Copper Solder  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide



# APPROVED MATERIALS

## Equipment Comment

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Piranha Wetbench

Aluminum oxide  
Carbon (diamond & graphite)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Hydrogen peroxide  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 Series (beaker use only)  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Sulfuric acid  
Teflon - thin film  
UVN 2300-0.5 Negative DUV Photoresist

# APPROVED MATERIALS

## Equipment Comment

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Polymer Oven 425C

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Apiezon Wax W  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Cytop (cured thin film)  
Cytop CTL-809M  
Cytop CT-SOLV180  
Cytop CTX-809SP2  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Edge Bead Remover AZ PGMEA  
FC-40 Fluorinert Electronic Liquid  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Gold-Tin Die Attach  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
Manganese  
Molybdenum Sulfide  
Nickel

# APPROVED MATERIALS

## Equipment Comment

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Polymer Oven 425C

Niobium  
Niobium Nitride  
Nitrogen  
Norland Electronic Adhesive 123  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Photoresist XR-1541 E-Beam Resist in MIBK  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular  
Poly (DL-Lactide)  
Poly (DL-Lactide-CO-Glycolide)  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide 41176 (liquid or unbaked)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating HD-4110 (liquid or unbaked)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI25XX Series (liquid or unbaked)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI26XX Series (liquid or unbaked)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Coating PI27XX Series (liquid or unbaked)  
Polyimide Durimide™ 284  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)

# APPROVED MATERIALS

## Equipment Comment

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Polymer Oven 425C

Polymer Elvamide 8061  
Polystyrene (not foam)  
PVDF PolyVinylidene Fluoride  
Pyralin Thinner T-9039  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Stainless Steel  
Sylgard 18X Series (base and curing agent)  
Tantalum  
Teflon - thin film  
Teflon AF (amorphous fluoroplastic) Resin  
Teflon diluted in C5-18  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
VM-651 (solvent for PI-2556)  
Zinc oxide

# APPROVED MATERIALS

Equipment  
Comment

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Pre-Furnace Clean Wetbench

Ammonium hydroxide  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Hydrochloric acid  
Hydrofluoric acid, 49%  
Hydrogen peroxide  
Nitrogen  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Sulfuric acid

# APPROVED MATERIALS

Equipment  
Comment

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Safety

HG Absorb® (part of mercury spill kit)  
JT Baker Acid Neutralizer  
Spilfyter Base Neutralizer

# APPROVED MATERIALS

## Equipment Comment

Samco UV-Ozone

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Carbon (diamond & graphite)  
Chromium  
Cobalt  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam resist XR-1541  
E-beam Resist ZEP  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Nickel  
Palladium  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805

# APPROVED MATERIALS

## Equipment Comment

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Samco UV-Ozone

Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Poly (styrene-b-methyl methacrylate)  
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide HD-8820 (baked or cured)  
Polystyrene-block-polyisoprene  
Pyrallux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Strontium Titanate SrTiO<sub>3</sub>  
Teflon - thin film  
Titanium  
Titanium Nitride  
Tungsten  
Tungsten Carbide  
UVN 2300-0.5 Negative DUV Photoresist



# APPROVED MATERIALS

## Equipment Comment

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Solvent Wetbench - Classroom

4-Methyl-2-Pentanone  
6061 Aluminum  
Acetone  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
AZ Developer 1:1  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Carbon nanotubes  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Cytop (cured thin film)  
Developer AZ 327 MIF  
Developer AZ 400K  
Developer AZ 400K diluted 4:1  
Developer AZ 726 MIF  
Developer AZ 917 MIF  
Developer AZ(R ) 300 MIF  
Developer MF-319  
Developer MF-321  
Developer PPD-450  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron

# APPROVED MATERIALS

## Equipment Comment

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Solvent Wetbench - Classroom

Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lithium Fluoride substrate (LiF)  
ma-D 500 Series Developer  
ma-N 2400 Series Negative Photoresist  
Manganese  
Methanol  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Nitrogen  
Organosilicate Glass (already coated)  
o-Xylene  
Palladium  
Parylene Dimer DPX-C  
PC Electroless Copper Solution Part A  
PC Electroless Copper Solution Part B  
Photomask Cleaning Solution PCS-605  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist remover 1165  
Photoresist remover AZ KWIK Strip  
Photoresist remover PG  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist stripper AZ 300T  
Photoresist stripper PRS 100  
Photoresist Stripper PRX™ 127  
Photoresist stripper QZ 3322  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum

# APPROVED MATERIALS

## Equipment Comment

Solvent Wetbench - Classroom

PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular  
Poly (DL-Lactide)  
Poly (DL-Lactide-CO-Glycolide)  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
ProTek B3 Primer  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
ProTek PSB Primer  
ProTek-100 Remover  
ProTEK™ B1-18  
ProTEK™ Primer  
Protoresist stripper AZ 400T  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Santovac 5 Polyphenyl Ether Lubricant  
Schott Glass D263 flexible  
Scotch tape 3M  
Scotch Tape 3M (double sided)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicone oil  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Steel  
Tantalum  
TechniStrip Ni555  
Teflon - thin film  
Tin  
Titanium Nitride  
Titanium oxide  
Toluene

# APPROVED MATERIALS

Equipment  
Comment

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Solvent Wetbench - Classroom

Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
UVN 2300-0.5 Negative DUV Photoresist  
VM-651 (solvent for PI-2556)  
Wafer-mount 562 Thermoplastic Film Adhesive  
Yttrium  
Zinc oxide

# APPROVED MATERIALS

## Equipment Comment

Solvent Wetbench - Wet Chemistry

3-aminopropyltriethoxysilane  
4-Methyl-1-acetoxycalixarene [mixture of [6] and [8]]  
6061 Aluminum  
Acetone  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
AZ Remover 770  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chlorobenzene  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Cyclotene 3022-46 advanced electronics resin  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Glycol Phthalate Wax  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide

# APPROVED MATERIALS

## Equipment Comment

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Solvent Wetbench - Wet Chemistry

Iron  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Manganese  
Methanol  
Molybdenum  
Molybdenum Sulfide  
mr-I 8000 Series (polymersolution for Nanoimprinter)  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Parylene  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist Intervia BPN  
Photoresist remover 1165  
Photoresist remover AZ KWIK Strip  
Photoresist remover PG  
Photoresist S1813  
Photoresist SPR 955  
Photoresist stripper AZ 300T  
Photoresist stripper PRS 100  
Photoresist Stripper PRX™ 127  
Photoresist stripper QZ 3322  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular  
Poly (DL-Lactide)  
Poly (DL-Lactide-CO-Glycolide)  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)

# APPROVED MATERIALS

## Equipment Comment

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Solvent Wetbench - Wet Chemistry

Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
Polymer Elvamide 8061  
ProTek B3 Primer  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
ProTek PSB Primer  
ProTek-100 Remover  
ProTEK™ B1-18  
ProTEK™ Primer  
Protoresist stripper AZ 400T  
Pyralin Thinner T-9039  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Santovac 5 Polyphenyl Ether Lubricant  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicone oil  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Steel  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
TechniStrip Ni555  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Toluene  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
Ultron Blue Mounting Tape

# APPROVED MATERIALS

Equipment  
Comment

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Solvent Wetbench - Wet Chemistry

UVN 2300-0.5 Negative DUV Photoresist  
VM-651 (solvent for PI-2556)  
Wafer-mount 562 Thermoplastic Film Adhesive  
Xylene  
Yttrium  
Zinc oxide  
Zirconium Oxide (ZrO<sub>2</sub>)



# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench - Classroom

Acetone  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
AZ Developer 1:1  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Crystal Bond 500 Series  
Developer MF-321  
Developer SU-8  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Edge Bead Remover AZ PGMEA  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
ma-D 500 Series Developer  
ma-N 2400 Series Negative Photoresist  
Molybdenum Sulfide  
mr-I 8000 Series (polymersolution for Nanoimprinter)  
Nickel  
Niobium  
Nitrogen  
Organosilicate Glass (already coated)

# APPROVED MATERIALS

## Equipment Comment

Spin Coat Bench - Classroom

Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polyimide HD-8820 (baked or cured)  
ProTek PSB Patterned Si Etch Coating  
ProTek PSB Primer  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Tantalum  
Teflon - thin film  
Titanium  
Titanium Nitride  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium

# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench #1

3-aminopropyltriethoxysilane  
Acetone  
Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Boron Nitride  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Cytop (cured thin film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam Resist ZEP  
Edge Bead Remover AZ PGMEA  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist

# APPROVED MATERIALS

## Equipment Comment

Spin Coat Bench #1

Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
ProTek PSB Patterned Si Etch Coating  
ProTek PSB Primer  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)

# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench #1

Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
Wafer-mount 562 Thermoplastic Film Adhesive  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

Spin Coat Bench #2

Acetone  
ADEX Series TDFS (SU8 Laminate)  
Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Cytop (cured thin film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam Resist ZEP  
Edge Bead Remover AZ PGMEA  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist

# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench #2

KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
OmniCoat (SU-8 adhesion)  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)

# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench #2

Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
ProTek PSB Patterned Si Etch Coating  
ProTek PSB Primer  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb  
Strontium Titanate SrTiO<sub>3</sub>  
SUEX Series TDFS (SU8 Laminate)  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
Wafer-mount 562 Thermoplastic Film Adhesive  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)



# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench #3

3-aminopropyltriethoxysilane  
Acetone  
Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Barium Fluoride substrate (BaF<sub>2</sub>)  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Boron Nitride  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Cytop (cured thin film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam Resist ZEP  
Edge Bead Remover AZ PGMEA  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Hafnium Oxide (substrate)  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist

# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench #3

Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
ProTek PSB Patterned Si Etch Coating  
ProTek PSB Primer  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible

# APPROVED MATERIALS

## Equipment Comment

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Spin Coat Bench #3

Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
Ultron Blue Mounting Tape  
UVN 2300-0.5 Negative DUV Photoresist  
Wafer-mount 562 Thermoplastic Film Adhesive  
Yttrium  
Zirconium Oxide (ZrO<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

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STS Multiplex ICP

Carbon (diamond & graphite)  
Crystal Bond 500 Series  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Germanium  
Halocardon C318  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-N 2400 Series Negative Photoresist  
Oxygen  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Poly (styrene-b-methyl methacrylate)  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Sulfur hexafluoride  
UVN 2300-0.5 Negative DUV Photoresist

# APPROVED MATERIALS

## Equipment Comment

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SU8 Solvent Chemical Bench

Acetone  
ADEX Series TDFS (SU8 Laminate)  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
AZ Developer 1:1  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Chlorobenzene  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Developer AZ 327 MIF  
Developer AZ 400K  
Developer AZ 400K diluted 4:1  
Developer AZ 726 MIF  
Developer AZ 917 MIF  
Developer AZ(R ) 300 MIF  
Developer Intervia BP  
Developer MF-24A  
Developer MF-26A  
Developer MF-319  
Developer MF-321  
Developer MF-CD-26  
Developer NANO MIBK/IPA Series  
Developer PA-401D  
Developer Polyimide RI9180  
Developer PPD-450  
Developer Shipley BPR  
Developer SU-8  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Edge Bead Remover AZ PGMEA  
Ethyl Lactate  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Gamma-Butyrolactone (SU-8 thinner)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold

# APPROVED MATERIALS

## Equipment Comment

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SU8 Solvent Chemical Bench

Graphene  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Isopropanol  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
ma-D 500 Series Developer  
ma-N 2400 Series Negative Photoresist  
Manganese  
Methanol  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Nitrogen  
OmniCoat (SU-8 adhesion)  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist remover 1165  
Photoresist remover AZ KWIK Strip  
Photoresist remover PG  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045

# APPROVED MATERIALS

## Equipment Comment

SU8 Solvent Chemical Bench

Photoresist stripper AZ 300T  
Photoresist stripper PRS 100  
Photoresist Stripper PRX™ 127  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
Polymer Elvamide 8061  
ProTek PSB Patterned Si Etch Coating  
Protoresist stripper AZ 400T  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Scotch tape 3M  
Scotch Tape 3M (double sided)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
SUEX Series TDFS (SU8 Laminate)  
Sylgard 18X Series (base and curing agent)  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium

# APPROVED MATERIALS

## Equipment

Comment **Needs to be full wafer substrate for measurement**

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Superior AFPP Four-Point Probe

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Carbon (diamond & graphite)  
Chromium  
Cobalt  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gold  
Graphene  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron-Chrome Alloy (Fe-Cr)  
Molybdenum  
Nickel  
Niobium  
Palladium  
Platinum  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Tantalum  
Titanium  
Titanium Nitride  
Tungsten  
Yttrium  
Zirconium Silicide (ZrSi<sub>2</sub>)



# APPROVED MATERIALS

## Equipment Comment

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Tencor Alpha Step 200 profilometer	6061 Aluminum Al <sub>2</sub> O <sub>3</sub> (sapphire substrate) Aluminum Aluminum Gallium Arsenide Aluminum Nitride Aluminum oxide Barium Fluoride substrate (BaF <sub>2</sub> ) Bismuth Selenide (Bi <sub>2</sub> Se <sub>3</sub> ) substrate Boron A Boron Spin-on Dopant Calcium Fluoride (CaF <sub>2</sub> ) substrate Carbon (diamond & graphite) Carbon nanotubes Chromium Circuit Board (Rogers 3XXX series) Circuit Board laminate Ultralam 38XX Copper Crystal Bond 500 Series Cyclic Olefin Copolymer (substrate film) Cytop (cured thin film) Doped Silicon (As, B, Ge, Ga, P, Sb) Fused Silica (amorphous quartz) Substrate Gallium Antimonide Gallium Arsenide + (S passivation) substrate Gallium Nitride Gallium Oxide Gallium-arsenide (substrate) Germanium Germanium-tin (GeSn) (pre-deposited film) Glass (not pure SiO <sub>2</sub> quartz) Gold Gold-Tin Die Attach Graphene Hafnium Oxide (substrate) Indium Indium Aluminum Arsenide Indium Arsenide Indium Gallium Arsenide Indium Phosphide Indium Tin Oxide (thin film) Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface Indium/Gallium/Arsenic Phosphide Iron-Chrome Alloy (Fe-Cr) Kapton Solid Film (not tape) KL1600 Series Photoresist KL5300 Series Photoresist Lead Magnesium Niobate-lead Titanate (PMN-PT) Lead Zirconium Titanate (PZT) Lithium Fluoride substrate (LiF)
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# APPROVED MATERIALS

## Equipment Comment

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Tencor Alpha Step 200 profilometer

ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
Polycarbonate  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
PVDF PolyVinylidene Fluoride  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible

# APPROVED MATERIALS

## Equipment Comment

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Tencor Alpha Step 200 profilometer	Silicon
	Silicon dioxide
	Silicon monoxide
	Silicon nitride
	Silicon-carbide
	Silicon-germanium (substrate or film)
	Silver
	Spin-on Glass 700F (undoped)
	Strontium Ruthenate SrRuO <sub>3</sub>
	Strontium Titanate Nb Doped (SrTiO <sub>3</sub> +Nb)
	Strontium Titanate SrTiO <sub>3</sub>
	Tantalum
	Teflon - thin film
	Tin
	Titanium
	Titanium Nitride
	Titanium oxide
	Tungsten
	Tungsten Carbide
	Tungsten Silicide (WSi <sub>2</sub> )
	Tungsten Sulfide
	Tungsten/rhenium
	UVN 2300-0.5 Negative DUV Photoresist
	Yttrium
	Yttrium Oxide
	Zinc oxide
	Zinc Selenide (Substrate)
	Zirconium
	Zirconium Alloy - Zircaloy-4 (substrate)
	Zirconium Oxide (ZrO <sub>2</sub> )

# APPROVED MATERIALS

## Equipment

Comment **Needs to be full wafer substrate for measurement**

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Tencor Thin Film Stress Measurement

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Boron A Boron Spin-on Dopant  
Carbon (diamond & graphite)  
Chromium  
Cobalt  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Gold  
Graphene  
Indium  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Schott Glass D263 flexible

## APPROVED MATERIALS

### Equipment

Comment **Needs to be full wafer substrate for measurement**

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Tencor Thin Film Stress Measurement

Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-germanium (substrate or film)  
Silver  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten/rhenium  
Yttrium  
Yttrium Oxide  
Zirconium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

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Tousimis Critical Point Dryer

Aluminum Gallium Arsenide  
Boron A Boron Spin-on Dopant  
Carbon dioxide (CO2)  
Carbon nanotubes  
Copper  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Isopropanol  
Molybdenum  
Nickel  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Platinum  
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)  
Quartz (pure SiO2, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Spin-on Glass 700F (undoped)  
Tantalum Nitride  
Teflon - thin film  
Titanium  
Titanium Tungsten Alloy

# APPROVED MATERIALS

Equipment  
Comment

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Tystar Low Temperature CVD Oxide Tube	15% phosphine in 85% silane Doped Silicon (As, B, Ge, Ga, P, Sb) Graphene Oxygen Quartz (pure SiO <sub>2</sub> , not glass) Silane Silicon Silicon dioxide Silicon monoxide Silicon nitride
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# APPROVED MATERIALS

Equipment  
Comment

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Tystar Polysilicon LPCVD Tube

15% phosphine in 85% silane  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Carbon (diamond & graphite)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silane  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride



# APPROVED MATERIALS

Equipment  
Comment

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Tystar Silicon Nitride LPCVD Tube

Carbon (diamond & graphite)  
Dichlorosilane  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Germanium  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride

# APPROVED MATERIALS

Equipment  
Comment

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Tystar Wet/Dry Oxidation Tube

Doped Silicon (As, B, Ge, Ga, P, Sb)  
Germanium  
Hydrogen  
Oxygen  
Quartz (pure SiO<sub>2</sub>, not glass)  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
TRANS-LC ® (trans 1,2-Dichloroethene)

# APPROVED MATERIALS

## Equipment Comment

Unaxis 790 RIE

Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Boron A Boron Spin-on Dopant  
Boron Nitride  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Cobalt  
Copper  
Cyclic Olefin Copolymer (substrate film)  
Cyclotene 3022-46 advanced electronics resin  
Cytop (cured thin film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam Resist ZEP  
Fomblin®  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Halocarbon 14 (CF<sub>4</sub>)  
Halocarbon 23 (CHF<sub>3</sub>)  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lanthanum Boride  
ma-N 2400 Series Negative Photoresist

# APPROVED MATERIALS

## Equipment Comment

Unaxis 790 RIE

Manganese  
Molybdenum  
Molybdenum Sulfide  
mr-I 8000 Series (polymersolution for Nanoimprinter)  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Oxygen  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Poly (styrene-b-methyl methacrylate)  
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Durimide™ 284  
Polyimide HD-8820 (baked or cured)

# APPROVED MATERIALS

## Equipment Comment

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Unaxis 790 RIE

Polystyrene (not foam)  
Polystyrene-block-polyisoprene  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
PVDF PolyVinylidene Fluoride  
Pyralin Thinner T-9039  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Spin-on Glass 700F (undoped)  
Sulfur hexafluoride  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
UVN 2300-0.5 Negative DUV Photoresist  
Zinc oxide

# APPROVED MATERIALS

## Equipment Comment

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WestBond 747644 Aluminum Wedge Bonder	Al <sub>2</sub> O <sub>3</sub> (sapphire substrate) Aluminum Aluminum Gallium Arsenide Aluminum oxide Barium Fluoride substrate (BaF <sub>2</sub> ) Bismuth Selenide (Bi <sub>2</sub> Se <sub>3</sub> ) substrate Boron A Boron Spin-on Dopant Boron Nitride Calcium Fluoride (CaF <sub>2</sub> ) substrate Carbon (diamond & graphite) Carbon Tape (discuss with staff prior to use) Chromium Circuit Board (Rogers 3XXX series) Cobalt Copper Doped Silicon (As, B, Ge, Ga, P, Sb) Fused Silica (amorphous quartz) Substrate Gallium Antimonide Gallium Arsenide + (S passivation) substrate Gallium Nitride Gallium-arsenide (substrate) Germanium Glass (not pure SiO <sub>2</sub> quartz) Gold Gold-Tin Alloy Gold-Tin Die Attach Graphene Hafnium Oxide (substrate) Indium Indium Aluminum Arsenide Indium Arsenide Indium Phosphide Indium/Gallium Phosphide Indium/Gallium/Arsenic Phosphide Iron-Chrome Alloy (Fe-Cr) Lithium Fluoride substrate (LiF) Molybdenum Molybdenum Sulfide Nickel Niobium Niobium Nitride Palladium Phenolic 74033 Butvar Resin Phosphorous Spin-on-Dopant P499-P512 Platinum Polyester PET (Transparency) Film Polyimide Coating HD-4110 (baked or cured) Polyimide Coating PI26XX Series (baked or cured)
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## APPROVED MATERIALS

### Equipment Comment

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WestBond 747644 Aluminum Wedge Bonder	Polyimide Coating PI27XX Series (baked or cured) Polyimide Durimide™ 284 Polyimide Film Tape 5413 (3M) Pyrex Glass Quartz (pure SiO <sub>2</sub> , not glass) Schott Glass D263 flexible Silicon Silicon dioxide Silicon monoxide Silicon nitride Silicon-carbide Silver Silver Epoxy/Paste (must be baked prior to vacuum systems) Solder Super glue Tantalum Teflon - thin film Tin Tin Silver Copper Solder Titanium Titanium oxide Tungsten Tungsten Carbide Tungsten Silicide (WSi <sub>2</sub> ) Tungsten Sulfide Tungsten/rhenium Zirconium Oxide (ZrO <sub>2</sub> )
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# APPROVED MATERIALS

## Equipment Comment

XeF2 Etcher

6061 Aluminum  
Aluminum  
Aluminum oxide  
Carbon (diamond & graphite)  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Gallium Nitride  
Germanium  
Glass (not pure SiO<sub>2</sub> quartz)  
Indium Tin Oxide (thin film)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lanthanum Boride  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
ma-N 2400 Series Negative Photoresist  
Molybdenum  
Niobium  
Nitrogen  
Organosilicate Glass (already coated)  
Parylene  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA 495  
PMMA 950  
Poly(3,4-ethylenedioxythiophene)-poly(styrenesulfonate)  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Quartz (pure SiO<sub>2</sub>, not glass)



# APPROVED MATERIALS

Equipment  
Comment

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XeF2 Etcher

Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon nitride  
Silver  
Strontium Ruthenate SrRuO3  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
UVN 2300-0.5 Negative DUV Photoresist  
Xenon Difluoride (XeF2)

# APPROVED MATERIALS

## Equipment Comment

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YES Asher

6061 Aluminum  
Al<sub>2</sub>O<sub>3</sub>  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Bismuth Ferrite BiFeO<sub>3</sub>  
Bismuth Selenide (Bi<sub>2</sub>Se<sub>3</sub>) substrate  
Boron A Boron Spin-on Dopant  
Calcium fluoride  
Calcium Fluoride (CaF<sub>2</sub>) substrate  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Circuit Board (Rogers 3XXX series)  
Cobalt  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Cytop (cured thin film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
E-Beam Resist Calixarene  
E-beam resist XR-1541  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium Oxide  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Gold  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium tin oxide coated PET sheet  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
KL1600 Series Photoresist  
KL5300 Series Photoresist

# APPROVED MATERIALS

## Equipment Comment

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YES Asher

Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Niobate (substrate)  
Magnesium Iron Silicate  
Magnesium Oxide Single Crystal  
ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Oxygen  
Palladium  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist HD-4110  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Photoresist XR-1541 E-Beam Resist in MIBK  
Platinum  
PMMA (solid piece)  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Poly (styrene-b-methyl methacrylate)  
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)  
Polycarbonate  
Polydimethylsiloxane (PDMS)

# APPROVED MATERIALS

## Equipment Comment

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YES Asher

Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide Coating HD-4110 (baked or cured)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide HD-8820 (baked or cured)  
PVDF PolyVinylidene Fluoride  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silver  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Spin-on Glass 700F (undoped)  
Stainless Steel  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Trichloro(1,1,2,2-perfluorooctyl)silane  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
UVN 2300-0.5 Negative DUV Photoresist  
Yttrium  
Yttrium Oxide  
Zinc oxide  
Zirconium  
Zirconium Oxide (ZrO<sub>2</sub>)  
Zirconium Silicide (ZrSi<sub>2</sub>)

# APPROVED MATERIALS

## Equipment Comment

YES Vacuum Oven

6061 Aluminum  
ADEX Series TDFS (SU8 Laminate)  
Al<sub>2</sub>O<sub>3</sub> (sapphire substrate)  
Aluminum  
Aluminum Gallium Arsenide  
Aluminum Nitride  
Aluminum oxide  
Apiezon Wax W  
Carbon (diamond & graphite)  
Carbon nanotubes  
Chromium  
Circuit Board (Rogers 3XXX series)  
Circuit Board laminate Ultralam 38XX  
Cobalt  
Copper  
Crystal Bond 500 Series  
Cyclic Olefin Copolymer (substrate film)  
Doped Silicon (As, B, Ge, Ga, P, Sb)  
Epoxy Mount (Allied High Tech)  
Fused Silica (amorphous quartz) Substrate  
Gallium Antimonide  
Gallium Arsenide + (S passivation) substrate  
Gallium Nitride  
Gallium-arsenide (substrate)  
Germanium  
Germanium-tin (GeSn) (pre-deposited film)  
Glass (not pure SiO<sub>2</sub> quartz)  
Glycol Phthalate Wax  
Gold  
Gold-Tin Die Attach  
Graphene  
Indium Aluminum Arsenide  
Indium Arsenide  
Indium Gallium Arsenide  
Indium Phosphide  
Indium Tin Oxide (thin film)  
Indium tin oxide coated aluminosilicate glass slide, 5-15 ohm/sq surface  
Indium/Gallium Phosphide  
Indium/Gallium/Arsenic Phosphide  
Iron  
Iron-Chrome Alloy (Fe-Cr)  
Kapton Solid Film (not tape)  
KL1600 Series Photoresist  
KL5300 Series Photoresist  
Lead Magnesium Niobate-lead Titanate (PMN-PT)  
Lead Zirconium Titanate (PZT)  
Lithium Fluoride substrate (LiF)  
Lithium Niobate (substrate)

# APPROVED MATERIALS

## Equipment Comment

YES Vacuum Oven

ma-N 2400 Series Negative Photoresist  
Manganese  
Molybdenum  
Molybdenum Sulfide  
Nickel  
Nickel-Chromium  
Niobium  
Niobium Nitride  
Nitrogen  
Organosilicate Glass (already coated)  
Palladium  
Parylene Dimer DPX-C  
Phosphorous Spin-on-Dopant P499-P512  
Photoresist AZ 12XT-20PL series  
Photoresist AZ 5214-E IR  
Photoresist AZ nLOF 2020  
Photoresist AZ nLOF 2035  
Photoresist AZ nLOF 2070  
Photoresist AZ P4620  
Photoresist Intervia BPN  
Photoresist KMPR Series  
Photoresist LOR A Series  
Photoresist MMA(8.5)MAA Copolymer Series  
Photoresist S1805  
Photoresist S1813  
Photoresist S1827  
Photoresist SPR 220  
Photoresist SPR 505A  
Photoresist SPR 955  
Photoresist STR 1045  
Photoresist SU-8 2000 Series  
Photoresist SU-8 Series  
Platinum  
PMMA (solid piece)  
PMMA 495  
PMMA 950  
PMMA w/terminal\_OH  
Poly (3-Hexylthiophene-2, 5-DIYL), Regioregular  
Poly (DL-Lactide)  
Poly (DL-Lactide-CO-Glycolide)  
Poly (styrene-b-methyl methacrylate)  
Poly (styrene-r-methyl methacrylate-r-glycidyl methacrylate)  
Polycarbonate  
Polydimethylsiloxane (PDMS)  
Polyester PET (Transparency) Film  
Polyimide 41176 (baked or cured)  
Polyimide 41176 (liquid or unbaked)  
Polyimide Coating HD-4110 (baked or cured)

# APPROVED MATERIALS

## Equipment Comment

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YES Vacuum Oven

Polyimide Coating HD-4110 (liquid or unbaked)  
Polyimide Coating PI25XX Series (baked or cured)  
Polyimide Coating PI25XX Series (liquid or unbaked)  
Polyimide Coating PI26XX Series (baked or cured)  
Polyimide Coating PI26XX Series (liquid or unbaked)  
Polyimide Coating PI27XX Series (baked or cured)  
Polyimide Coating PI27XX Series (liquid or unbaked)  
Polyimide Durimide™ 284  
Polyimide Film Tape 5413 (3M)  
Polyimide HD-8820 (baked or cured)  
Polyimide HD-8820 (liquid or unbaked)  
ProTek B3 Si Etch Coating  
ProTek PSB Patterned Si Etch Coating  
ProTEK™ B1-18  
PVDF PolyVinylidene Fluoride  
Pyralux AP (polyimide double sided copper clad tape)  
Pyrex Glass  
Quartz (pure SiO<sub>2</sub>, not glass)  
Schott Glass D263 flexible  
Silicon  
Silicon dioxide  
Silicon monoxide  
Silicon nitride  
Silicon-carbide  
Silicon-germanium (substrate or film)  
Silver  
Silver Epoxy/Paste (must be baked prior to vacuum systems)  
Silver paint  
Spin-on Glass 700F (undoped)  
Strontium Ruthenate SrRuO<sub>3</sub>  
Strontium Titanate Nb Doped (SrTiO<sub>3</sub>+Nb)  
Strontium Titanate SrTiO<sub>3</sub>  
SUEX Series TDFS (SU8 Laminate)  
Tantalum  
Teflon - thin film  
Tin  
Titanium  
Titanium Nitride  
Titanium oxide  
Tungsten  
Tungsten Carbide  
Tungsten Silicide (WSi<sub>2</sub>)  
Tungsten Sulfide  
Tungsten/rhenium  
UVN 2300-0.5 Negative DUV Photoresist  
Wafer-mount 562 Thermoplastic Film Adhesive  
Yttrium  
Yttrium Oxide

# APPROVED MATERIALS

Equipment  
Comment

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YES Vacuum Oven

Zinc oxide

Zirconium

Zirconium Alloy - Zircaloy-4 (substrate)

Zirconium Oxide (ZrO<sub>2</sub>)

Zirconium Silicide (ZrSi<sub>2</sub>)