

**CENTRE OF EXCELLENCE IN SOLID STATE PHYSICS,  
University of the Punjab, QAC, Lahore, Pakistan**

**Pre-Qualification Notice of Firms for the Provision of  
Materials / Chemicals**

Companies / representatives having interest in provision of the following and other such chemicals / materials / substrates should need to register with the Centre of Excellence in Solid State Physics. The companies need to provide certificate of dealership from authentic manufacturers of such chemicals. The list of companies selected, based on pre-qualification, for provision of such chemicals will be approved by the committee constituted for such purpose.

Bids only through E-Pak Acquisition and disposal system (EPADS) will be entertained. No bid other than EPADS will be accepted. Bid security will be submitted before closing of tender physically in the Director's office, Quaid-e-Azam Campus, Lahore, (Tel: 042-99233133). Bidder will also upload the complete scanned copy of their bid in EPADS.

Bidding documents, containing detailed terms and conditions can be downloaded from the websites of PPRA or Punjab University ([www.pu.edu.pk](http://www.pu.edu.pk)). In case of any query, guidance can be sought from the director's office.

The bids prepared in accordance with the instructions contained in the bidding documents must be submitted on EPADS by 28-01-2025 till 11:00 (a.m.), which will be opened on the same date at 11:30 (a.m.). If there is a public holiday announced by the Government on the tender opening date, then the tender will be opened on the next working day.

| <b>Sr. No</b> | <b>Name of the Material / chemical</b> |
|---------------|--|
| 1.            | Silver Nitrate (AgNO <sub>3</sub> )    |
| 2.            | Hexadecyltrimethoxysilane (HDTMS)      |
| 3.            | triethanolamine (TEA)                  |
| 4.            | 1-dodecanethiol                        |

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| 5.  | Sodium borohydride (NaBH <sub>4</sub> )  |
| 6.  | Poly dimethoxy silane  |
| 7.  | Perfluorooctylated quaternary ammonium silane ( PFSC)  |
| 8.  | fluoroalkylsilane   1H,1H,2H,2H-Perfluorodecyltrie   |
| 9.  | Trimethoxy silane  |
| 10. | Octadecyl trichlorosilane ( CH <sub>3</sub> (CH <sub>2</sub> ) <sub>17</sub> SiCl <sub>3</sub> )                 |
| 11. | 1H,1H,2H,2H-perfluorodecyltrichlorosilane (C <sub>10</sub> H <sub>4</sub> Cl <sub>3</sub> F <sub>17</sub> Si)    |
| 12. | 1H,1H,2H,2H-Perfluorooctyltriethoxysilane<br>(C <sub>14</sub> H <sub>19</sub> F <sub>13</sub> O <sub>3</sub> Si) |
| 13. | Hydrogen tetrachloroaurate (HAuCl <sub>4</sub> )   |
| 14. | Ferrous sulfate heptahydrate ( FeSO <sub>4</sub> .7H <sub>2</sub> O)   |
| 15. | Iron(III) Chloride Hexahydrate (FeCl <sub>3</sub> 6H <sub>2</sub> O)   |
| 16. | Titanium (IV) oxysulfate (TiOSO <sub>4</sub> .xH <sub>2</sub> O)   |
| 17. | Titanium isopropoxide (C <sub>12</sub> H <sub>28</sub> O <sub>4</sub> Ti)  |
| 18. | titanium tetrachloride ( TiCl <sub>4</sub> )   |
| 19. | Zinc nitrate hexahydrate Zn (NO <sub>3</sub> ) <sub>2</sub> .6H <sub>2</sub> O                                   |
| 20. | Zinc sulfate (ZnSO <sub>4</sub> )  |
| 21. | Zn acetate dehydrate (Zn(CH <sub>3</sub> CO <sub>2</sub> ) <sub>2</sub> .2H <sub>2</sub> O))                     |
| 22. | Zinc acetate ( ZnC <sub>4</sub> H <sub>6</sub> O <sub>4</sub> )  |
| 23. | zinc carbonate (ZnCO <sub>3</sub> )  |
| 24. | acetic acid (CH <sub>3</sub> COOH)   |
| 25. | Sodium acetate (C <sub>2</sub> H <sub>3</sub> NaO <sub>2</sub> )   |
| 26. | poly(vinylpyrrolidone) (PVP, MW: 40,000)   |
| 27. | Chitosan   |
| 28. | Sodium chloride (NaCl)   |
| 29. | potassium permanganate (KMnO <sub>4</sub> )  |
| 30. | saffron methyl orange (MO) powder  |
| 31. | Sodium hydroxide (NaOH)  |
| 32. | Nitric acid ( HNO <sub>3</sub> )   |
| 33. | Laccase enzyme oxidizes Gallic acid (GA)   |
| 34. | (3-Mercaptopropyl)trimethoxysilane (C <sub>6</sub> H <sub>16</sub> O <sub>3</sub> SSi)                           |

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| 35. | (3-Aminopropyl)triethoxysilane (C <sub>9</sub> H <sub>23</sub> NO <sub>3</sub> Si) |
| 36. | Hydroxylamine (NH <sub>2</sub> OH)   |
| 37. | Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )                                    |
| 38. | Hydrogen peroxide (H <sub>2</sub> O <sub>2</sub> )                                 |
| 39. | diethylene glycol  |
| 40. | Ethanol  |
| 41. | Methanol   |
| 42. | Isopropanol  |
| 43. | Acetone  |
| 44. | silicon/silicon oxide wafers with native oxide layer                               |
| 45. | Tweezers Teflon  |
| 46. | Silver paste   |
| 47. | Lanthanum nitrate  |
| 48. | Cobalt nitrate   |
| 49. | Bismuth nitrate  |
| 50. | Iron nitrate   |
| 51. | Samarium nitrate hexahydrate   |
| 52. | Cerium nitrate hexahydrate   |
| 53. | Neodymium(III) nitrate hexahydrate   |
| 54. | Zirconium oxychloride octahydrate  |
| 55. | Ammonium niobate oxalate hydrate   |
| 56. | Ethylene glycol  |
| 57. | Europium oxide   |
| 58. | Titanium (IV) bromide 98%  |
| 59. | Vanadium penta-oxide (V <sub>2</sub> O <sub>5</sub> )                              |
| 60. | Molybdenum chloride (powder)   |
| 61. | Lithium carbonate  |
| 62. | Ammonium hydroxide (NH <sub>4</sub> OH)  |
| 63. | Carbon nanotube, multi-walled, carboxylic acid functionalized                      |
| 64. | Graphene (powder)  |

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| 65. | Aniline reagent 99% (C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub> )   |
| 66. | Tin Acetate Sn(CH <sub>3</sub> CO <sub>2</sub> ) <sub>4</sub>  |
| 67. | Antimony acetate (CH <sub>3</sub> CO <sub>2</sub> ) <sub>3</sub> Sb  |
| 68. | Pyrrole reagent grade  |
| 69. | Bismuth Nitrate Bi(NO <sub>3</sub> ) <sub>3</sub> .5H <sub>2</sub> O   |
| 70. | Cobalt nitrate hexahydrate (reagent grade)   |
| 71. | Titanium Carbonitride  |
| 72. | Hydrazine  |
| 73. | Ammonium persulfate (ACS Reagent, Assay ≥98%)  |
| 74. | 1,2,3,4-Tetrahydronaphthalene anhydrous (Assay 99%;With sure/seal)   |
| 75. | Poly(methyl methacrylate) (average Mw ~355,000)  |
| 76. | Polystyrene (average Mw 280,000)   |
| 77. | Poly(vinyl alcohol) (average Mw ~90,000)   |
| 78. | Trichlorododecylsilane (DTS) (assay≥95%, density 1.02g/ml)   |
| 79. | Trichloro(octadecyl)silane (OTS) (assay≥90%, density 1g/ml)  |
| 80. | Hexamethyldisilazane (HMDS) (20% solution in xylene)   |
| 81. | PTB7 (average Mw 80,000-200,000, PDI ≤3.0)   |
| 82. | Polyethylenimine (PEI) (average Mw ~5,000, PDI ≤1.3 linear, n-type modifier)   |
| 83. | Poly (3-hexylthiophene-2,5-diyl) (P3HT); regioregular (RR >90%, average Mw ~50,000-100,000)                              |
| 84. | C8-BTBT (Assay ≥99%; p-type Mobility≥5cm <sup>2</sup> /V.s)  |
| 85. | Poly (benzimidazobenzophenanthroline) (N-type Mobility~0.1cm <sup>2</sup> /V.s, p-type Mobility~0.4cm <sup>2</sup> /V.s) |
| 86. | Benz[b] anthracene (Assay 98%, p-type mobility≥0.3cm <sup>2</sup> /V.s.)   |
| 87. | Zinc Oxide nanowires (Length > 200nm)  |
| 88. | Copper(II) acetate hydrate (assay >98%)  |
| 89. | Tungsten(IV) chloride (assay >95%)   |
| 90. | Poly(9,9-di-n-octylfluorenyl-2,7-diyl)   |
| 91. | Multi-Walled Carbon Nanotube Powder (Diameter: 50-100 nm, Length: 5-15 μm)   |
| 92. | Poly(2,3-dihydrothieno-1,4-dioxin)-poly(styrenesulfonate), (C <sub>6</sub> H <sub>4</sub> O <sub>2</sub> S) <sub>n</sub> |

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| 93.  | poly- (perfluorobutenylvinylether), (C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> P  |
| 94.  | Poly {[N,N'-bis(2-octyldodecyl)-naphthalene-1,4,5,8-bis(dicarboximide)-2,6-diyl]-alt-5,5'-(2,2'-bithiophene)}, (C <sub>62</sub> H <sub>88</sub> O <sub>4</sub> S <sub>2</sub> ) <sub>n</sub> |
| 95.  | poly[3- (potassium-7-hexanoate)-thiophene-2,5-diyl], (P3PHT)   |
| 96.  | Tin Oxide  |
| 97.  | Indium tin oxide   |
| 98.  | Tungsten Oxide   |
| 99.  | Cuprous Oxide  |
| 100. | Gallium  |
| 101. | Selenium   |
| 102. | Indium   |
| 103. | Tn   |
| 104. | Silicon wafers (un-doped and doped)  |
| 105. | Copper foils   |
| 106. | Aluminum foils   |
| 107. | Silver foils   |
| 108. | Sapphire substrates  |
| 109. | SOI  |
| 110. | Glass slides   |

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