

Procurement Plan of CSIR-AMPRI Major Lab Project, “Centre of Excellence in Graphene and its Applications” & “Graphene reinforced metal matrix composites through powder bed additive manufacturing for aerospace and defense applications”

Plan for the year 2024 and 2025

Non Recurring:

1. MultiJet and Thermal Jet Extrusion based 3D Bioprinter.
2. E Beam powder bed fusion metal additive manufacturing facility
3. Laser powder bed fusion metal additive manufacturing facility
4. Wavelength and angle resolved Cathodoluminescence spectroscopy with EDS, EBSD with FESEM
5. Four probe Hall measurement
6. Electron Energy Loss Spectroscopy as attachment to existing Joel F200 HRTEM
7. Filament Extruder
8. FDM 3D printer
9. InkJet 3D printer
10. Rotavapor system with pump and chiller
11. Laboratory glassware, such as Beaker, conical flask, round bottom flask, column for purification
12. Magnetic stirrer with temperature control facility, heating mantle
13. Fume hoods with exhaust system

Recurring (Consumables):

1. Gas atomized & Plasma atomized AP&C Ti64 grade 5 EBM powder (for EPBF, PSD : 45 to 106)
2. Gas atomized & Plasma atomized AP&C Ti64 grade 23 EBM powder (for EPBF, PSD : 45 to 106)
3. Gas atomized & Plasma atomized AP&C Titanium grade 2 EBM powder (for EPBF, PSD : 45 to 106)
4. Gas atomized & Plasma atomized AP&C Ni718 EBM powder (for EPBF, PSD : 45 to 106)
5. Gas atomized & Plasma atomized Arcam Ti48Al2Cr2Nb powder EBM (for EPBF, PSD : 45 to 106)
6. Gas atomized & Plasma atomized Ni-based superalloys Alloy 625, Alloy 718, Alloy H-X (for LPBF, PSD : 15 to 53/10 to 45)
7. Gas atomized & Plasma atomized Austenitic stainless steel metal powder (for LPBF, PSD : 15 to 53/10 to 45)

8. Gas atomized & Plasma atomized Ferritic stainless steel metal powder (for LPBF, PSD : 15 to 53/10 to 45)
9. Gas atomized & Plasma atomized Martensitic stainless steel metal powder (for LPBF, PSD : 15 to 53/10 to 45)
10. Gas atomized & Plasma atomized Ti-6AL-4V Grade 5 and Grade 23 (for LPBF, PSD : 15 to 53/10 to 45)
11. Gas atomized & Plasma atomized HC Cu (for LPBF, PSD : 15 to 53/10 to 45)