Advanced Materials and Processes Research Institute

सीएसआईआर- एम्प्री
CSIR-AMPRI

Advanced Materials and Processes Research Institute (AMPRI), Bhopal, is a constituent laboratory of the Council of Scientific and Industrial Research (CSIR), New Delhi. It was started in the year 1981 in the undivided state of Madhya Pradesh as a Regional Research Laboratory (RRL). Based on the core strength and R&D expertise, RRL has been renamed as the Advanced Materials and Processes Research Institute (AMPRI) from March 2007 onwards by the CSIR to give more visibility for carrying out focused research. The website provides information about the institute, its mandate, vision, niche areas, and R&D activities.

Current Programs and Future Perspectives

Scientists in AMPRI are specialized in different disciplines of materials science and other related areas. AMPRI is equipped with modern facilities for material synthesis, processing and property characterization such as SEM, pressure die casting machine, semisolid processing unit, rolling mill, Mg melting unit etc. FESEM, cryomilling units and those related to nanoscale R&D are being established.

Current activities of AMPRI are broadly categorized under:

- Lightweight Materials
- Nanostructured Materials
- Smart and Functional materials
- Waste to Wealth
- CSIR-800

In the category of lightweight materials, important activities relate to Al metal matrix composites, polymer matrix composites, Al foam and Mg-based alloys. AMPRI has laid a major emphasis on lightweight materials development like Al foam, Mg-based alloys, in-situ MMCs and nanostructured materials. Also, activities on electromagnetic forming, smart and functional materials, steel and Ti foams, and materials modelling and design are in the offing.

In the area of Waste to Wealth, the institute largely worked on the utilization of fly ash and Red Mud. The institute has developed wood substitute technology using red mud, fly ash and natural fibers which has potential applications for making doors, panels, partitions and furniture. AMPRI has developed Radiation Shielding Materials from Red Mud and holds a US Patent on the work. The potential applications of this technology include shielding of gamma and neutrons in nuclear power plants and for diagnostic X-ray shielding in X-ray and CT scan rooms.