

## Tentative Outline

### Special/Thematic Issue for the Journal Recent Patents on Nanotechnology

#### Nano Composites Manufacturing Methods for Aerospace Application

*Guest Editor: Dr. Rajamanickam Ranjith*

#### Scope of the Thematic Issue:

Metals are the most often utilised conductive materials, despite significant limitations such as corrosion, high density and high production costs. As a result, technological breakthroughs and research in the field of conductive materials throughout the previous decade were mostly focused on the production of conductive nanocomposites (CNC). Conductive fillers like as carbon nanotubes, graphene, and metal nanowires are commonly used in CNCs and are spread out in an insulating matrix. Polymer-based CNCs combine the inherent benefits of polymers (light weight, low cost, corrosion resistance, and ease of processing) with adjustable electrical conductivity derived from the shape and properties of the filler. CNCs have demonstrated interesting electrical qualities that might be beneficial in a variety of applications, including sensors, electronics, EMI shielding, and lightning strike protection in aeroplanes.

Moulds are often employed in traditional methods for producing CNCs, whereas additive manufacturing (AM) or 3D printing technologies produce forms from a digitally drawn 3D model without the need of moulds. This property of 3D Printing makes it one of the most promising technologies for direct manufacturing of final conductive components and complicated structures, as well as prototyping for research. Various types of 3D printing processes have been developed to date, including fused deposition modelling, selective laser sintering, stereolithography, and solvent-assisted 3D printing.

The goal of this Special Issue is to highlight current research projects in the topic of conductive nanocomposites that can be used in additive manufacturing. Innovative 3D printing processes and materials, as well as advanced composite fabrication approaches with characterizations demonstrating their promise in the field of 3D printing are particularly welcome.

**Keywords:** Nano composites, Surface Engineering, Additive Manufacturing, Tissue Engineering, Optimization, Shape memory alloys.

#### Sub-topics:

- Nano Composites.
- Electrical conductivity.
- Additive Manufacturing.
- Shape memory alloys.
- Hybrid Manufacturing processes.
- Optimization Techniques.
- Surface Topography.
- 2D-Materials.
- Nano coatings.
- Tissue Engineering.
- Electric discharge additive manufacturing.
- Nano particle engineering.

#### Schedule:

- ✧ Thematic issue submission deadline: **November 15, 2023**

#### Contacts:

**Guest Editor Name:** Dr. R. Ranjith  
**Affiliation:** SNS College of Technology, India  
**Email:** [Ranjith.mecs@gmail.com](mailto:Ranjith.mecs@gmail.com)

Any queries should be addressed to [support@benthamexecutiveeditors.com](mailto:support@benthamexecutiveeditors.com)