

GOVERNMENT OF INDIA

DEPARTMENT OF SCIENCE & TECHNOLOGY

Programme on Nonlinear Phenomena, Complex Matter and Biologically Inspired Physics

The importance of nonlinear science, soft condensed matter (such as colloids, powders, polymers and membranes) and biologically inspired physics has emerged very clearly in recent years. In view of this and given the large mutual overlaps of these disciplines as well as their interdisciplinary nature, the DST has considered it fit to constitute a separate Programme Advisory Committee (PAC) specifically to foster research in these areas. Suitable project proposals are invited in the above general fields.

Research proposals should pay particular attention to the development and application of ideas and techniques that cut across disciplines and/or seek to elucidate and provide insight into the general paradigms of complexity and nonlinearity.

Proposals that come under this general purview include:

Dynamical phenomena far from equilibrium, driven systems, chaos, especially spatiotemporal. This encompasses both model systems such as sandpiles and driven lattice gases as well as 'real' examples such as colloids in shear flow and sedimentation, turbulence, kinetics of phase ordering, granular matter (powders), earthquakes, pattern formation, etc.

Physics of soft condensed matter. Membranes (biological and model), Langmuir monolayers and Langmuir-Blodgett films, micelles, vesicles, lamellar structures, microemulsions, emulsions, foams, and other structures in surfactant solutions: liquid crystals, both thermotropic and lyotropic, polymer solutions, gels, and melts: colloidal suspensions, including ferrofluids, electro-rheological fluids, etc.

Biologically inspired physics. Models in evolutionary biology and population genetics, evolution of complexity, neural networks, optimization, protein folding, motor proteins and molecular ratchets, etc.

Qualified researchers interested in submitting project proposals to be considered for funding may write to the following address for further details:

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