Prosenjit Singha Deo

Professor
CMPMS
deo@bose.res.in

Guidance of Students/Post-Docs/Scientists during the period under review

a) Ph.D. Students

1. K. Meena; Mesoscopic physics; Under progress
2. S. Routh; Superconductivity; Under progress (with Thirupathaiah Setti)

Areas of Research

Mesoscopic physics

Mesoscopic physics is still a new branch of physics but a very promising area. Landauer-Buttiker formalism has emerged as a promising approach to understanding mesoscopic systems as it very easily solves the problem of quantum measurements and detection at a practical level. Larmor clock approach has the necessary ingredients to extend this approach to still not so well understood phenomena like decoherence, AC response and non-linear response of mesoscopic systems. In our works we have brought immense clarity to the issues associated with the Larmor clock and made it a practically viable approach to study all mesoscopic phenomena. One of the key obstacles was to understand negative times. We have been also able to reconcile negative times with our classical notion of time. Which means in the classical world effect can precede the cause although the details of the technology of sending the signal is quantum in nature.