In this era of miniaturized devices, we have been trying to develop various quantum theories to describe charge transfer, transport, optical and magnetic phenomena within a unified approach. Towards this end, I shall discuss our efforts to understand Negative differential Resistance/Conductance (NDR/NDC) phenomena in molecules and quantum dots, using both voltage-constraint and current-constraint approaches [1-4]. I shall also discuss a few electronics work that we have carried out on DNA systems [5-7].


Host: Prof. Dr. Gian Aurelio Cuniberti
Chair of Materials Science and Nanotechnology
Institute for Materials Science, TU Dresden

Contact: Dr. Dmitry Ryndyk: dmitry.ryndyk@nano.tu-dresden.de.

Everybody is very welcome!