Symposium Resonant Energy Transfer and Interatomic Coulombic Decay (SYET)

jointly organized by
the Molecular Physics Division (MO) and
the Quantum Optics and Photonics Division (Q)

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Energy transfer between microscopic quantum systems has been studied by the Quantum Optics and Molecular Physics communities from very different points of view. In Quantum Optics, Förster resonant energy transfer is a process whereby an electronically excited system decays by emitting a photon which is subsequently resonantly absorbed by a second system. In Molecular Physics, on the other hand, the decay of an electronically excited system can proceed via an energy transfer to (and ionization of) the immediate chemical environment in a mechanism known as Interatomic or Intermolecular Coulombic Decay.

Both phenomena, Resonant Energy Transfer and Interatomic Coulombic Decay, are currently of high interest due to their relevance in both biological and technological contexts. Resonant Energy Transfer is a key mechanism underlying photosynthesis in light-harvesting complexes, while also being a decisive factor in the engineering of efficient solar cells. Interatomic Coulombic Decay mechanisms, in turn, have been proposed as a source of genotoxic low-energy electrons, providing new insights into the radiation damage on a microscopic level, and ideas for possible future concepts for radiation therapy.

Overview of Invited Talks and Sessions

(Lecture room RW HS)

Invited Talks

SYET 1.1	Thu	11:00–11:30	RW HS	**The quantum design of photosynthesis** — •Rienk van Grondelle
SYET 1.2	Thu	11:30–12:00	RW HS	**On systems with and without excess energy in environment: ICD and other interatomic mechanisms** — •Lorenz Cederbaum
SYET 1.3	Thu	12:00–12:30	RW HS	**Molecular QED of Resonance Energy Transfer: Pair and Many-Body Theory** — •Akbar Salam
SYET 1.4	Thu	12:30–13:00	RW HS	**The Experimental Investigation of Interatomic/Intermolecular Coulombic Decay** — •Uwe Hergenhahn

Sessions

SYET 1.1–1.4	Thu	11:00–13:00	RW HS	**Resonant Energy Transfer and Interatomic Coulombic Decay**