Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Institute for Molecular Physical Science (IMPS)

Einladung zu einem Kolloquium

Datum/Zeit:	**Dienstag, 07.05.2024, 16.45 Uhr**
Referent:	**Prof. Robert Kaptein** Utrecht University, Padualaan 8, 3584 CH Utrecht, Netherlands
Titel:	*Chemically Induced Dynamic Nuclear Polarization (CIDNP), a tool for the study of reaction mechanisms*
Ort:	**HCI G7**

In 1967 two groups, Bargon & Fischer, and Ward & Lawler, observed enhanced positive and negative lines in NMR spectra recorded when free radical reactions proceed in the NMR tube. By analogy with Dynamic Nuclear Polarization (an electron-nuclear cross relaxation effect), they called it CIDNP. However, some of the experimental results could not be explained by a DNP-based theory.
As a PhD student at the time, I had experience with NMR of stable free radicals, so I was well prepared to make the switch to studying these mysterious CIDNP phenomena. This led in 1969 to a new theory, the Radical Pair Mechanism (RPM), developed independently by Gerhard Closs and me. In the lecture I will explain the RPM and discuss two simple qualitative rules for net polarization and the so-called multiplet effect. Several examples in organic and biochemistry will illustrate this. It is interesting to note that in nature the RPM forms the basis of navigation of birds and other migratory animals.

Gäste sind willkommen