

E I N L A D U N G

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V O R T R A G

von

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Unilateral Portable NMR Devices:
Application of NMR for the Characterization of
Materials and Their Degradation Processes in Art

Donnerstag, 27. März 2014, 16:00 Uhr

Akademie der bildenden Künste, Schillerplatz 3

Vortragssaal EA1 (Erdgeschoss)

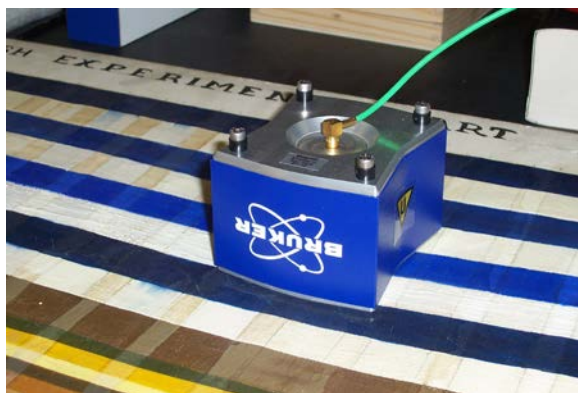
Unilateral Portable NMR Devices: Application of NMR-Mouse for the Characterization of Materials and Their Degradation Processes in Art

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Abstract

The use of a portable NMR device allows a non-invasive investigation of inorganic and organic materials.^[1] The NMR investigation has been found mainly on relaxation measurements whose results seem compatible with different relaxation rates in different morphological domains. The use of a portable NMR device shows great potentiality because of its safe and simple in situ approach to Cultural Heritage documents.



During the talk, the underlying theory of this technique will be discussed and subsequently a broad range of applications will be presented.

[1] B. Blümich, J. Perlo, F. Casanova, Progress in Nuclear Magnetic Resonance Spectroscopy 52 (2008) 197–269.

Curriculum Vitae

PERSONAL INFORMATION

Name: Priv. Doz. DI. Dr. Wolfgang Schoefberger
Born: 8th January 1973
Place of birth: Linz, Austria
Nationality: Austria
Status: Married, one Son (Vinzenz)
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EDUCATION

1987–1992: High School Diploma for Chemistry and Technology in Wels (Austria) at the Höhere Bundeslehranstalt für chemische Betriebstechnik Wels.

1992–1999: Studying Chemistry and Technology at the University of Technology Graz, Austria, finishing the Studies with the Diploma Thesis: *“Synthesis and Morphology Investigations of Nanoseparated Block Copolymers”*.

2000-2002: PhD Thesis in field of Polymer Chemistry (passed with distinction) at the Institute for Chemistry and Technology of Organic Materials under supervision of *Prof. Dr. Franz Stelzer* (Head of the Institute), *Prof. Dr. Jörg Weber* (Department of Organic Chemistry) and *Prof. Dr. Christoph Marschner* (Department of Inorganic Chemistry): *“Synthesis and chemical modification of conjugated polymers and copolymers and NMR investigations on the kinetics of the Ring Opening Metathesis Polymerization (ROMP) Reaction.”*

PROFESSIONAL EXPERIENCE

01/2003-6/2004: Postdoctoral Studies at the Chemistry Department of New York University; Research cooperation with *Prof. Dr. Alexej Jerschow* (*Synthesis and Solid state NMR of inorganic metal complexes*).

7/2004 – 01/2005: Postdoctoral Research at the Department of Structure and Function of Proteins, Institute of Physical Biology, University of South Bohemia České Budějovice; Research cooperation with *Prof. Dr. Rüdiger Etrich* (*Solid State NMR on biological samples*).

02/2005-12/2005: Postdoctoral Research at the Institute of Organic Chemistry; Research cooperation with *Univ. Prof. Dr. Norbert Müller (NMR Pulse Sequence Development)*.

01/2006-04/2006: Researcher at the Metropolitan Museum of Arts, New York City (Solid state NMR and Portable NMR Devices of arts materials).

05/2006–11/2007: Research Associate at the Institute of Organic Chemistry, Johannes Kepler University Linz (Development of non-metalated and metalated corrole/porphyrin compounds for molecular electronics, medical and catalysis applications).

11/2007-11/2013: Research Associate at the Institute of Inorganic Chemistry - Center for Nanobionics and Photochemical Sciences (CNPS), Johannes Kepler University Linz (Development of non-metalated and metalated corrole/porphyrin compounds for molecular electronics, medical and catalysis applications).

8th March 2012: Habilitation for Organic Chemistry, accepted at the Johannes Kepler University.

2010-2013: Vice-Chairman of the AG-NMR Working Party of the “Gesellschaft Österreichischer Chemiker”.

PAST AND PRESENT RESEARCH GRANTS

- **Schrödinger Fellowship,** at New York University, financed by the Austrian Science Foundation (2003-2004), 35 k€.
- **Andrew W. Mellon Fellowship,** at the Metropolitan Museum of Arts (2005), 20 k€.
- **Standalone FWF-Project (P18384),** “Solid state and liquid NMR of metal complexes”, 2006-2011, 320 k€
- **WTZ-Research Project (Austria-Czech Republic):** Computer-Assisted Solid-State NMR Investigations of Polymorphic Systems, 9/2007-9/2009, 5 k€.
- **Research Project-EU-NMR** (Contract # RII3-026145) at the Center for Biomolecular Magnetic Resonance (BMRZ), Frankfurt, Germany, High field solution ³¹P NMR experiments, 5 k€.
- **WTZ-Research Project (Austria-Croatia):** Saturation Transfer Difference (STD) NMR Spectroscopic and CD-Spectroscopic Investigations of DNA and Human Serum Albumin (HSA)/Ligand Complexes, accepted 2011, 5 k€.
- **FFG-Project:** Prä-klinische Entwicklung einer Off-the-Shelf individualisierten Krebsimmuntherapie „In situ DC-CIT“, accepted in June 2012, 519 K€.
- **Standalone FWF-Project** “High-Valent Metal Tetrapyrrolics for Surface-Supported Catalysis”, accepted by the Austrian Science Fund (FWF), August 2012, 670 k€.