

Focal Point: Inorganic Chemistry

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Aqueous Organometallic Chemistry: From Life Sciences to Catalysis

Organized by: Prof. Roger Alberto*, University of Zürich
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Abstract: The Minisymposium in Inorganic Chemistry was held with international speakers from six different countries. It was dedicated to the rapidly growing field of aqueous organometallic chemistry. Since the research community is still relatively small, it was possible to cover with the contributions the most relevant aspects of this new field. The widespread opinion that organometallics are generally unstable under aqueous and aerobic conditions could be relativated. The incentive of using water as a solvent in fundamental and applied research points towards very inspiring ideas.

Keywords: Aquo ions · Bioorganometallics · Catalysis · Inorganic Chemistry · Life science · Mimetics

The speakers covered with excellence all important aspects of organometallic chemistry in water, synthesis, mechanisms, analytics and application, emphasizing the incentive of using water as a solvent. The inspiration came mainly from the insight that water should not be considered any longer as an amid solvent for organometallic compounds but can lead to very interesting novel results and applications. The Minisymposium was successful, not only due to the very high scientific level of the contributions but in particular due to the attendance of many young researchers which led to vivid discussions between them and the invited guests and probably to new contacts for the future.

Prof. *Gérard Jaouen* (Ecole National Supérieur de Chimie de Paris) demonstrated biomedical applications in breast cancer therapy of targeting organometallic moieties for the oestradiol receptor.

Prof. *Richard Fish* (University of California, Berkley) presented his synthetic, structural and mechanistic results based on $[(Cp^*)Rh(OH_2)_3]^{2+}$ for the recognition of small molecules and for its biomimetic use



From left to right: N. Metzler Nolte (Heidelberg), G. Jaouen (Paris), P. Pregosin (Zürich), R. Fish (Berkeley), S. Ogo (Osaka), M. Whittlesey (Bath), G. Süss-Fink (Neuchâtel), R. Alberto (Zürich)

in NAD⁺ models in cofactor regeneration and chiral synthesis.

Prof. *Nils Metzler-Nolte* (University of Heidelberg) described a novel approach for the labeling of various targeting bioactive peptides with organometallic compounds based on solid phase synthesis. These three contributions from life science oriented topics impressively underlined the future basic role of organometallics in all important parts of bio-related research.

The extension to the field of catalysis in water was opened with Prof. *Georg Süss-Fink's* (Université de Neuchâtel) talk about supramolecular catalysis in biphasic sys-

tems in which he showed impressively the use of multinuclear complexes for the selective hydrogenation of benzene and other aromatic compounds.

Prof. *Michael Whittlesey* (University of Bath) presented novel synthetic and structural aspects of organometallic aqua compounds of the iron triad with hints of potential catalytic applications.

Finally, Prof. *Seiji Ogo* (Institute of Molecular Science, University of Osaka) showed the pH-dependent activation of small molecules which will not only allow industrial catalysis in water but also mimicking of bioinorganic processes.

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