

Einladung zum Vortrag von

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**“Inorganic nanomedicines for therapeutics and
bioimaging”**

One of the main objectives in the development of nanomedicines is to obtain delivery platforms for efficient and targeted delivery of drugs and/or imaging agents to improve therapeutic efficacy, reduce side effects and increase diagnostic sensitivity. A material class that has been recognized for its controllable properties on many levels, which could facilitate the development of such systems, is mesoporous silica nanoparticles (MSNs). Associated traits behind this success are the modularity combined with the vast surface functionalization approaches adoptable for MSNs. Silica is also the most widely used coating for other inorganic nanoparticles, since it is biocompatible, allows for easy further functionalization, and efficiently protects the core material. If the cores are coated with mesoporous silica, the porous shell can also be utilized for incorporation of active molecules such as drugs or molecular imaging agents.

The presentation will outline design aspects that emphasize the utilization of MSNs as a versatile platform for nanomedicine development. Specific examples will be given covering the whole range from materials design and formulation with different active agents, to *in vitro* cellular evaluations to *in vivo* therapeutic delivery and detection. These particles can e.g. accumulate in tumors after intravenous administration and show capability for long-term cellular tracking *in vivo*, making the developed MSN system a versatile platform for a range of biomedical applications aimed at diagnostics and/or therapy, or even a combination of both. Such capability for simultaneous detection and treatment, often referred to as “theranostics”, is an important step towards personalized medicine; which hence also constitutes a field that is expected to benefit greatly from nanomedicine.

Freitag, 8. Juni 2018, 15:15 Uhr
Seminarraum 3 der Fakultät für Chemie
Boltzmannngasse 1, 1090 Wien

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