

Materials & Interfaces Special Seminar

Prof. Martin Himly

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will talk on

“Nanosafety Research & Education”

Nanotechnology has reached every-day life. A high number of all-day products either contain nanomaterials (NMs) or have been processed by nanotechnological work flows. New interactions with other all-day products, *i.e.* an every-growing number of modern lifestyle products (MLPs), become more and more likely. Moreover, the new generation has a high degree of creativity in using MLPs in different ways potentially resulting in not foreseen interactions of NMs with MLPs during the marketing process. Therefore, an interdisciplinary research project termed **Nan-O-Style** has been established investigating interactions between NMs in consumer products with substances from daily life with a special focus on MLPs used by adolescents. Furthermore, Nan-O-Style aims at the compilation of an education initiative about nanotechnology including teaching resources and international peer-teaching.

In order to achieve a high variety of perspectives, students from different types of Austrian higher schools (technical/scientific vs. economic vs. artistic) work in close contact with scientists from academia. Due to the within Nan-O-Style acquired competences and the established network between academic scientists, students and educational institutions, the students develop new models for interdisciplinary teaching in mathematical/scientific/technical (MINT) subjects and apply them as best practice examples. We particularly focus on schools with an economic or fashion background which typically have a higher share of girls. A number of pre-scientific projects in nano-technological, nano-biological or nano-educational topics are carried out.

This approach towards interdisciplinary MINT education thus strengthens the profile formation of the Paris Lodron University of Salzburg and further extends to the education of teachers. Previously, the educational EU framework projects www.NanoTOES.eu and www.NanoEIS.eu had been coordinated by Prof. Duschl and his group. Nan-O-Style is based on this background and therefore internationally connected to educational partners in Israel (ORT Moshinsky R&D Center, Tel Aviv, <http://en.ort.org.il/>), Spain (Nanoeduca, Barcelona, <http://nanoeduca.cat/es/inicio/>), and Germany (cc-NanoBioNet e.V, Saarbrücken, <http://www.nanobionet.de/>).

The Duschl group furthermore conducts nanosafety research involving advanced *in vitro* models of the human lung barrier, including air-liquid interface cultures (1), addressing potential modulations of the immune response towards NMs (2, 3). As allergens may be inhaled simultaneously to nanoparticles they can become part of the protein corona. The group investigates whether this poses a risk for people with an existing allergic condition (4).

Wednesday, May 30th, 2018, 11:00

Room 404, Perlman Building