

Martin-Luther-Universität Halle-Wittenberg
Naturwissenschaftliche Fakultät II
Chemie und Physik
SFB TRR 102



POLYMER- UND SOFT-MATTER-SEMINAR

am Dienstag, dem 19.06.2012, 17.15 Uhr

VDP 1.27 Seminarraum Chemie, Von-Danckelmann-Platz 4,
06120 Halle

Es spricht:

Dr. Sebastian Koltzenburg
BASF SE, GM/IK - B001, 67056 Ludwigshafen, Germany

Topic:

“Solubilization of Brick Dust – Chemistry, Physics, Processes”

Abstract:

Poor solubility and, therefore, limited bioavailability of new drug candidates represents an ever increasing challenge to the pharmaceutical industry. According to estimations, up to 90% of all new chemical entities fall into this category, challenging the formulator's skills. This is a severe problem, since the uptake of an orally administered drug through the patient's intestinal tract usually requires molecular dissolution of the active ingredient – drugs that don't dissolve won't heal you.

To overcome this issue, nanoscience has become a key technology to increase the apparent solubility and/or the dissolution rate of poorly soluble drugs. This presentation, which contains mostly unpublished results obtained in close cooperation with Harvard University, will show novel nanotechnology-based approaches for the solubilization of “brick dust”. The presentation will demonstrate that the dissolution of poorly soluble compounds can be significantly enhanced by going to the nanoscale. These approaches include nanotemplating as well as foaming and co-precipitation techniques using pharmaceutically acceptable ingredients only.

As a result, we will demonstrate that the oral bioavailability of poorly soluble model drugs such as fenofibrate can be increased by several hundred percent due to an increase of the dissolution rate of the active ingredient, rather than increasing the absolute saturation solubility.