

Interdisciplinary Colloquium Regenerative Medicine I

**Tuesday, 27th June 2017 at 12:30 – 1:30 pm,
NORD 1, Kurszimmer C301,
University Hospital Zurich**

Prof. Wendelin Jan Stark

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Nanotech for medicine: From undamental research to commercialization

Nanotechnology has provided tremendous advances in materials design. Small inorganic particles can be moved in liquids and provide a mobile version of hard tissue (bone, teeth). At interfaces, small particles can assist the binding of otherwise incompatible materials such as polymers or rubber with wet human tissue and permit gluing onto wet bone or within living teeth. Small magnets allow to selectively move molecules, or ions. This offers new treatment options where we go inside a patient to collect toxins instead of adding even more substances to the patient. In another direction, dissolution of nanoparticles in polymers enables precision design of pores, giving access to better drinking water filters

At the merger with information technology, we have more recently designed nanotags, small particles containing information that can be read out at the single particle level, and start applying them in product identification, as a tool to follow microorganisms and cells, or even industrial products.

In a last part, I would like to show recent advances in soft total heart implant research, where we have pioneered the use of 3D printing enabled manufacturing of entirely soft blood pumps, and first performance tests in the laboratory.

Organiser: Prof. Dr. Dr. Simon P. Hoerstrup

Execution/Chair: Dr. Steffen M. Zeisberger

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