

Polyelectrolyte Multilayers as a Responsive Coatings for Implant Surfaces



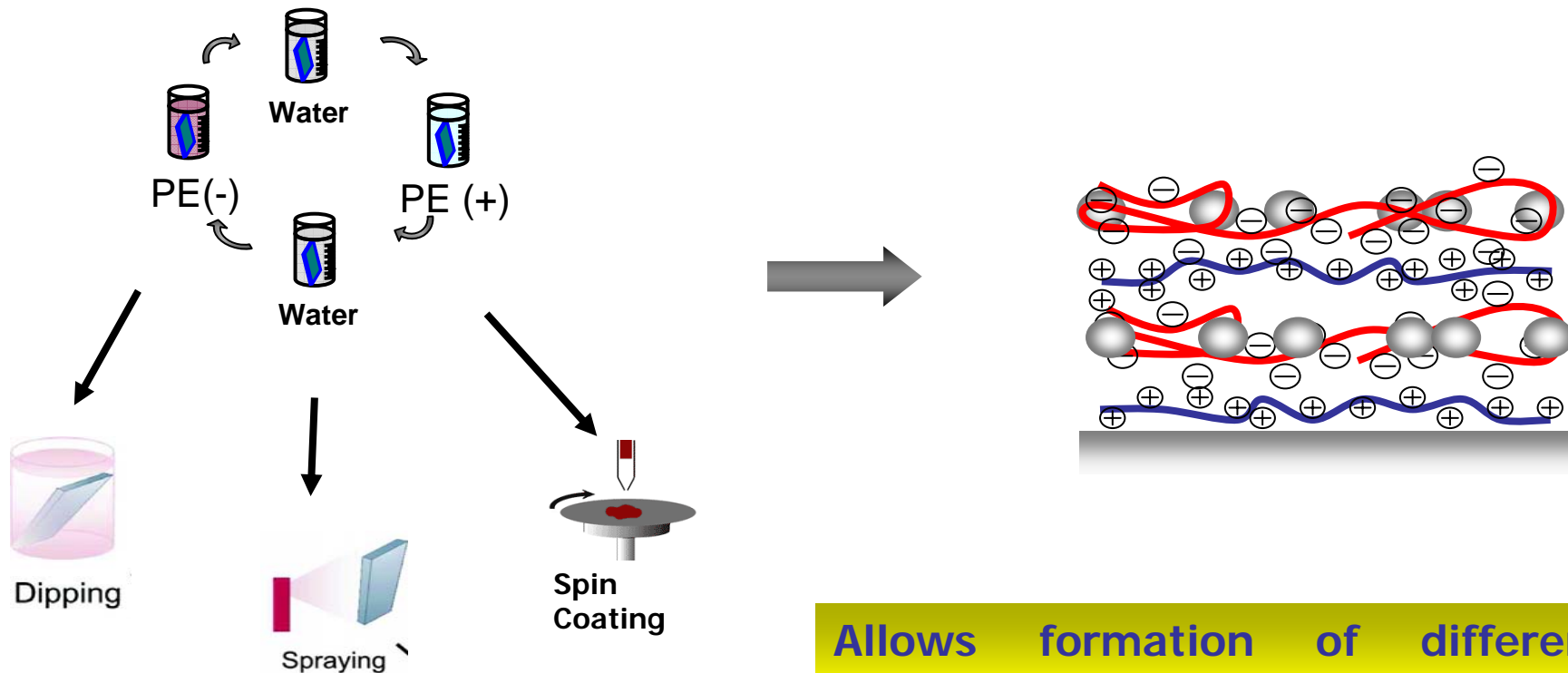
MicroMountains iNNOVATION FORUM Tuttlingen

Group Biomaterials, Dr. Rumen Krastev
23 June 2009

NMI

Angewandte F&E

Layer-by-Layer Technology



Alternative adsorption (deposition) of polycations and polyanions driven by charge overcompensation after each step of the deposition process.

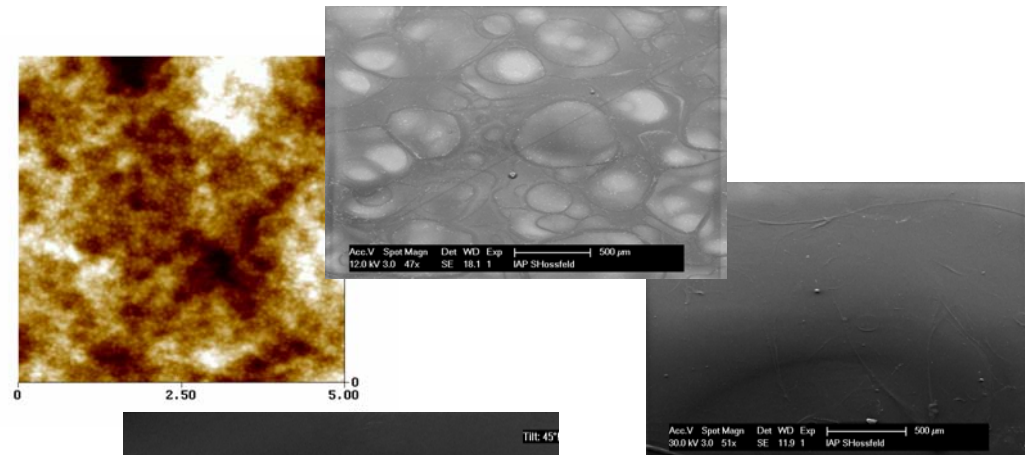
Allows formation of different structures with well defined and precisely tuned properties and accommodation of active species.

Layer-by-Layer Technology - Surfaces

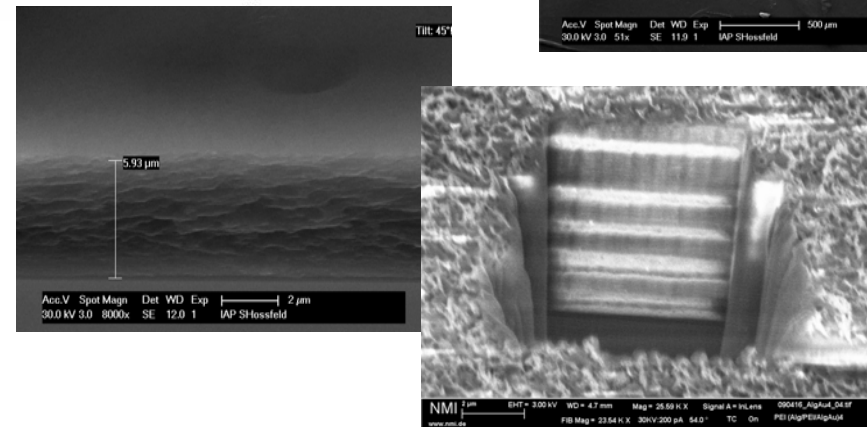
1. Substrates:

Practically all materials and geometries (even very complicated) is possible to be coated.

- FLAT SUBSTRATES



- Complex surfaces

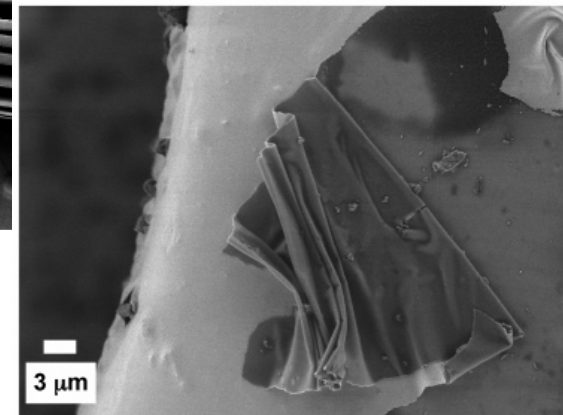
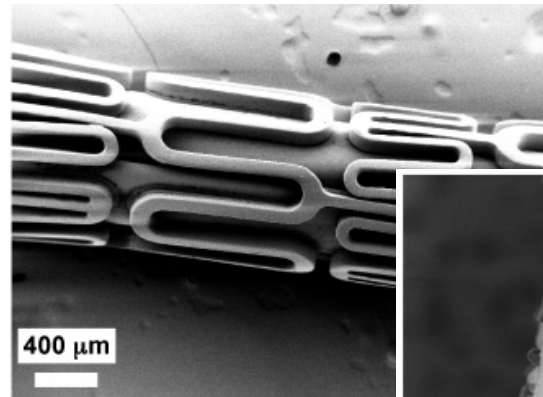


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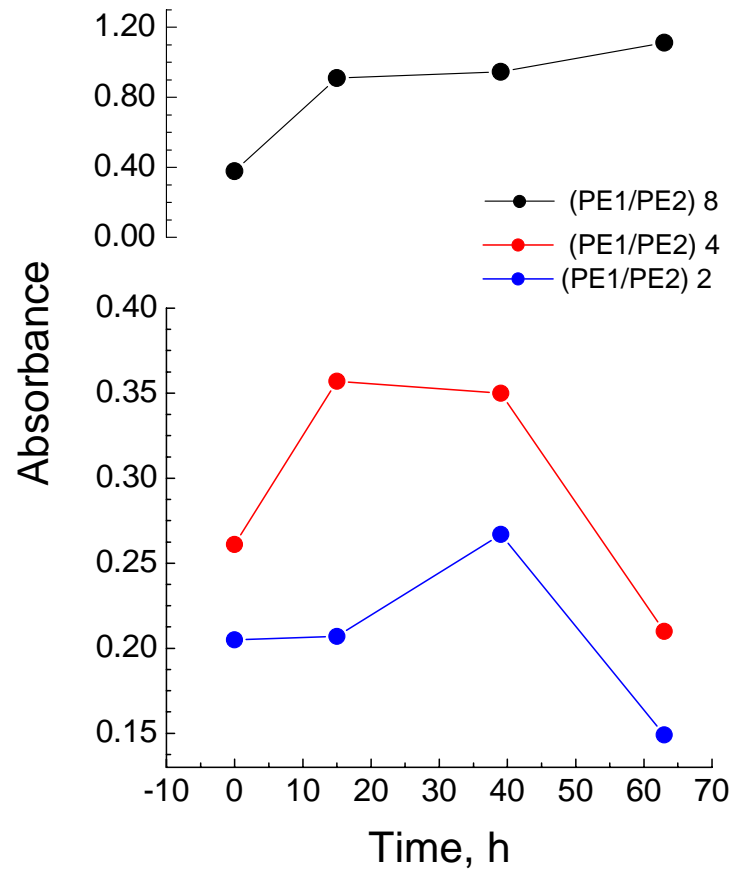
Practically all materials and geometries (even very complicated) is possible to be coated.

- flat substrates

- **COMPLEX SURFACES**
e.g. **INTRAVASCULAR STENTS**



Controlled release – PEM as a drug delivery system



Release of Au particles used to model active species in the PEM as a function of the preparation conditions and release time.

Thicker layers assure longer accommodation time of the active species in the coating.