

# Nano-Patterned Polyelectrolyte Multilayers: A Non-Lithographic Approach

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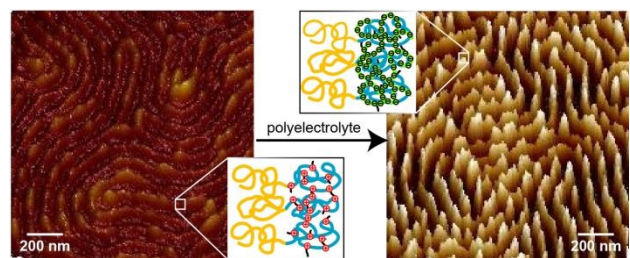
Nano-patterned materials exhibit unique properties, such as increased surface area and morphology-dependent response. However, obtaining nanoscale patterns usually requires the involvement of electron beam lithography, which is limiting when device-scale patterns (typically spanning square centimeter areas) are sought.

The presentation will describe a modular approach for the construction of nano-patterned polyelectrolyte multilayers. This approach utilizes the surface patterns that are formed spontaneously in thin films of block copolymers as templates, which guide the assembly of polyelectrolytes using electrostatic layer-by-layer deposition. The presentation will discuss the fundamentals of selective polyelectrolyte adsorption on confined nano-domains and will delineate potential applications.

## References

- [1] L. Asor, S. Nir, M. Oded, M. Reches, R. Shenhar *Polymer* **2017**, *126*, 56
- [2] M. Oded, A. H. E. Müller, R. Shenhar *Soft Matter* **2016**, *12*, 8098
- [3] M. Oded, S. T. Kelly, M. K. Gilles, A. H. E. Müller, R. Shenhar *Polymer* **2016**, *107*, 406
- [4] M. Oded, S. T. Kelly, M. K. Gilles, A. H. E. Müller, R. Shenhar *Soft Matter* **2016**, *12*, 4595

## Figures



**Figure.** AFM height images showing a block copolymer pattern before and after selective deposition of a polyelectrolyte (height scales: left image: 5 nm; right image: 15 nm).