

## Defence announcement

Public Defence on 19.01.2024

# Thin films of self-assembled materials by dip-coating technique

<b>Title of the doctoral thesis</b>	Thin films of self-assembled materials by dip-coating technique
<b>Content of the doctoral thesis</b>	<p>Imagine tiny building blocks coming together like puzzle to create sophisticated and well-organized materials – this is what we call self-assembly. Scientists, inspired by nature's elegance, have made impressive progress in creating artificial self-assembled materials. These materials can form structures ranging from tiny, like at the molecular level, to larger structures.</p> <p>To make these materials practical for everyday use, the self-assembly process must be controllable. One promising method for this is dip-coating, a technique that is like dipping something in paint. Dip-coating is simple, quick, and lets scientists control the thickness of the coating. In addition, dip-coating works on different shapes and sizes of the substrates to be coated without wasting materials.</p> <p>Even though dip-coating seems like a great way to create these self-assembled materials, not many researchers have explored it fully. Understanding how the dipping process interacts with the material's behavior is still a bit of a mystery.</p> <p>This thesis aims to solve that mystery by looking at how different materials behave when combined with dip-coating. The thesis starts by exploring what dip-coating is all about and then dives into specific materials like polymers, water bubbles, and tiny virus particles. By figuring out the relationships between the dipping process and each material, the thesis gives valuable insights that can guide future research in this exciting area.</p>
<b>Field of the doctoral thesis</b>	Chemistry
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<b>Place of public defence</b>	Aalto University School of Chemical Engineering, Lecture hall Ke2 (Komppa-Sali), Kemistintie 1, (main door at Biologinkuja) Espoo
<b>Opponent(s)</b>	Professor Maria Helena Godinho, Nova University Lisbon, Portugal
<b>Custos</b>	Professor Jaana Vapaavuori, Aalto University School of Chemical Engineering
<b>Link to electronic thesis</b>	<a href="https://aaltodoc.aalto.fi/handle/123456789/51">https://aaltodoc.aalto.fi/handle/123456789/51</a>
<b>Keywords</b>	thin films, self-assembly, dip-coating, block copolymer, breath figure, virus nanoparticle