

Title: **Study of superhydrophobicity for environmental applications**

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In this project, some evidences are shown in order to achieve superhydrophobic materials. On one hand, we have a simple process that involves the electrodeposition using zinc chloride, lauric acid on a pure aluminum commercial substrate and using molybdenum sulfide. In addition, complete tetraethyl orthosilicate hydrolysis will be performed to obtain silicon oxide. This reagent will also be used for electrochemical deposition using the same reagents called previously. On the other hand, cotton will be used as a substrate to obtain a superhydrophobic polylactic acid surface. Some tests will be performed to obtain different samples. Once we have these samples, they will be characterized by scanning electron microscope, in order to study the morphology, and to the infra-red spectroscopy to identify the chemical compositions. Finally, contact angles will be measured to obtain information on the wetting properties of the different samples obtained.

Keywords: superhydrophobic materials, electrodeposition (or electrochemical deposition), hydrolysis, morphology, chemical compositions, contact angles