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BA Applied Mathematics (JUST), MA Pure Mathematics (NUM), Ph.D. Applied Mathematics (QUT)
Thesis Title:
Modelling Water Droplet Movement on a Leaf Surface
Supervisors:
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Citation:

The aim of this research was to develop a model for simulating water droplet movement on a leaf surface and to compare the model behaviour with experimental observations. To realise this aim, a novel surface fitting strategy was developed to generate a virtual leaf structure. The movement of the droplet over the surface was then modelled using an appropriate equation of motion coupled with thin-film theory for a viscous fluid flowing down a slope to develop a stopping criterion for the droplet as it moves on the surface. Knowing the path of the droplet on the leaf surface is important for understanding how a droplet of water, pesticide, or nutrient will be absorbed through the leaf surface.