

Sustainable Polymers for a Clean Future, Prosperity Partnerships

Polymers in Liquid Formulations (PLFs) are a broad group of polymers that are used as thickeners, emulsifiers and binders in many day-to-day items including household detergents, cosmetics and agrochemicals. The vast majority of these polymers are derived from fossil fuel sources, and they do not degrade in the environment. Despite their importance to society and the global economy, and in contrast to the intense recent focus on the sustainability of plastics, there has been very little coordinated effort to address the sustainability of PLFs. There is a clear requirement and demand to make these vital ingredients more environmentally friendly; could they be developed from renewable resources, and could they be biodegradable after their use?

This is the focus of our Prosperity Partnership, where Croda has joined forces with the University of Nottingham and the University of York to catalyse the changes required, using joint expertise to accelerate innovation.

Together, we are targeting the development of commercially viable, novel biobased and biodegradable polymers, with the aim of offering more sustainable alternatives to traditional PLFs such as polyacrylates. On this journey we are widening the scope of available building blocks and developing knowledge about how structural changes in molecular architecture influence biodegradability and end use performance. These data will then be exploited to optimise the design, development and production of desirable functional polymers.