CAPABILITY

Formulation and Materials

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Optimising the materials, formulation and manufacturing process is a crucial part of making your great idea a commercial success. Partnering with CPI provides you with access to the right skills, tools and facilities to optimise and scale-up faster, improving your product or process and bringing it to market sooner.

Optimisation of products and processes

Leveraging our extensive cross-industry expertise in colloid science and process engineering, we help our customers to develop, optimise, scale-up and manufacture formulated liquid, solid, and nanoformulation products. We have the ability to make product types such as emulsions, nanoemulsions and nanodispersions at a range of scales. Our facilities include continuous micromixing pilot lines suitable for producing nanomedicines for use in targeted drug delivery, through to batch vessels for production of up to one tonne. We also work with our clients to optimise process chemistry, investigating batch scale-up and batch conversion to continuous processing – with safety always at the forefront. This helps our clients to design commercial process plants or define sustainable solutions for existing ones.

Solutions for nanomaterials manufacturing

For products and processes using nanomaterials such as graphene, we have a range of capabilities that allow the development and integration into final end products including inks, coatings, composites, membranes and sensors. The techniques we employ focus on the safe-handling, optimised dispersion and structuring of graphene and other 2D materials into liquids and polymer substrates, and their application into prototype products – all supported by characterisation and application testing.

The wide range of characterisation techniques on offer allows our customers to gain a deeper understanding of the chemical and electrical properties of their nanomaterials. We provide our customers with the ability to demonstrate the value of nanomaterials and composites across multiple market sectors and are constantly developing our expertise and technology to help bring nanomaterial innovations to market sooner.
Deeper understanding of materials performance

At CPI, we offer high-throughput capabilities to accelerate the development of our customers’ formulations. Our screening technologies can rapidly generate robust data sets that allow our customers to investigate a broad range of formulation possibilities. This provides a unique understanding of how the materials they use will perform in practice, reducing waste in development. Your material’s structure is intrinsically linked to its performance and we will work with you to optimise material design using our formulation characterisation toolkit – a set of quantitative and qualitative chemical, physical and material property measurements. Supported by our in-house experts, our capabilities enable a rigorous analysis of formulated products and processes in order to understand their failure modes, improve their performance and quickly arrive at a cost-effective solution.

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