

Particle Engineering & Interfacial Science

The Xerox Research Centre of Canada is a world leader in the design of particles and surfaces for specialty applications. Put our expertise to work for you in your next project.



What We Offer

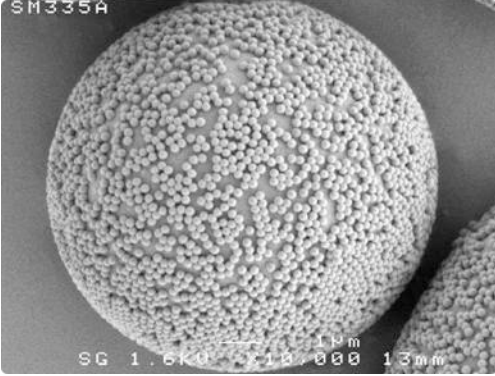
The Xerox Research Centre of Canada has a long history of game-changing innovation in particle engineering and interfacial science. Our expertise in particle synthesis is exemplified by Xerox EA chemical toner technology, a 'bottom-up' approach for making toner particles with breakthrough performance. We've leveraged our know-how in making particles to expand into areas such as composite particles, monodisperse spheres and other pigment-polymer composites

Interfacial science is also a skill set within our portfolio. We bring a wealth of experience in the field of encapsulation, and can tailor-make capsules ranging from hundreds of nanometers to the millimeter regime. Particle stabilization through milling techniques (attrition and media milling) is another XRCC specialty.

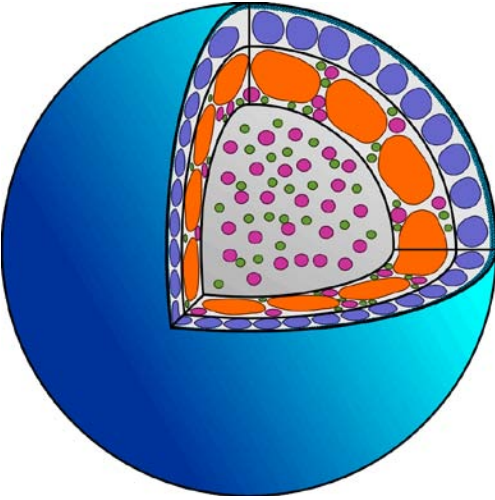
Example: Emulsion-Aggregation (EA) Toner

EA toner particles are "grown" from nano-sized polymer droplets using a unique self-assembly process – a paradigm shift from the energy-intensive grinding procedure traditionally used to make toner. Particle size and morphology can be fine-tuned as needed, providing application-tailored materials for high-speed, high-resolution printing.

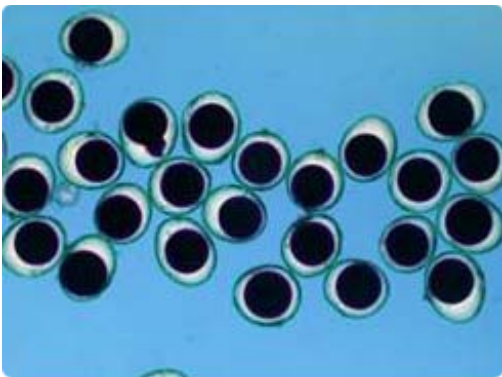
Particle Engineering & Interfacial Science – Highlights



Latex particles aggregated on macro particles



Schematic of a structured particle



Encapsulated beads

Microencapsulation

We have demonstrated microencapsulation of individual 100 µm particles in oil, as well as electrophoretic inks.

Particles with unique morphologies

We can use our extensive knowledge to make virtually any particle type you desire.

Composite particles

Controlled incorporation of inorganic materials into polymeric particles is enabled by XRCC's unique particle assembly technology.

Milling and Stabilization

We have a vast array of micromills for fine particle processing, such as state-of-the-art mixers, media mills, and homogenizers. Pigment stabilization is a specialty of XRCC.

Competencies

- Microencapsulation
- Polymerization
 - Suspension
 - Interfacial
 - Emulsion
- Pigment stabilization
- Particle characterization
- Particle synthesis

Facilities

- Particle sizing
 - Malvern Zetasizer
 - Nanotrak Particle Analyzer
 - Coulter Counter (Multisizer)
- Mechanical testing
- Electron microscopy
- Optical microscopy

Engage us:

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