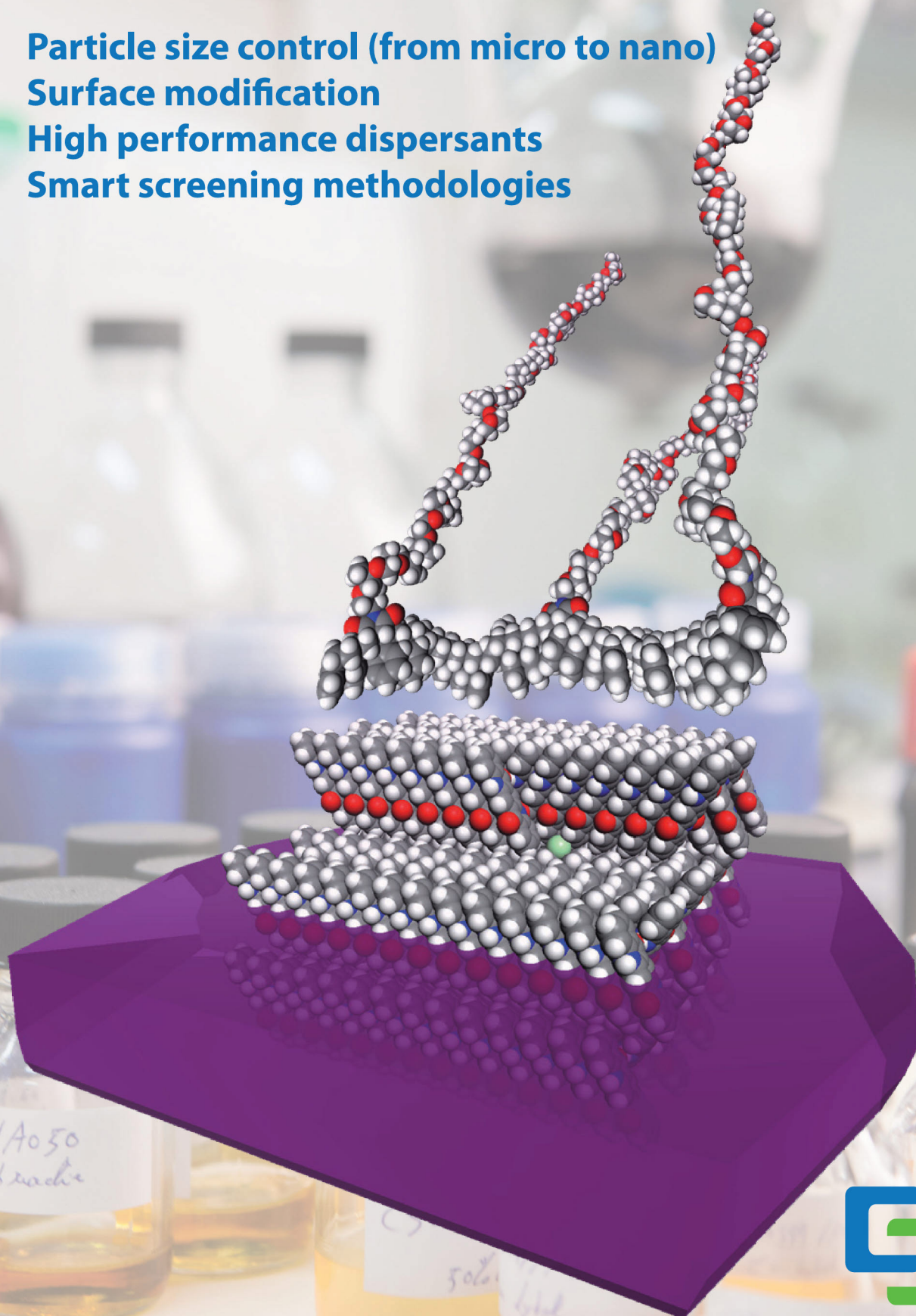
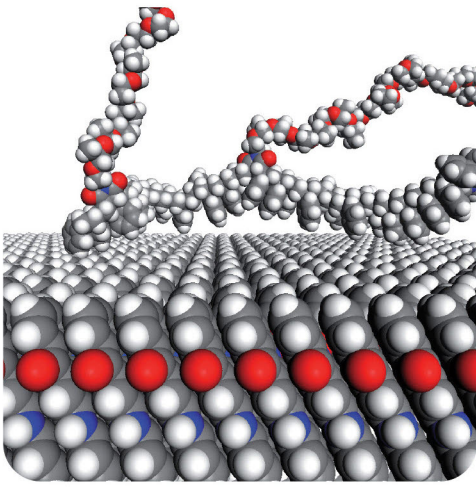


ChemStream's dispersion technology

- ✓ Particle size control (from micro to nano)
- ✓ Surface modification
- ✓ High performance dispersants
- ✓ Smart screening methodologies



CHEMSTREAM
SUSTAINABLE CHEMISTRY



Molecular model pigment – dispersant interaction



Organic synthesis of dispersing agents



Bead milling of a pigment nano-dispersion

High performance dispersions

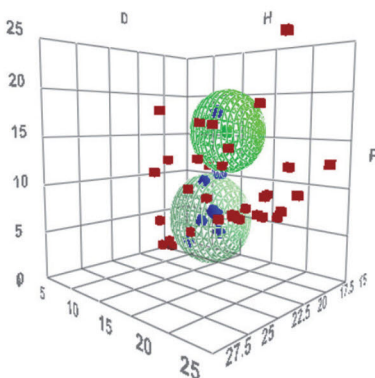
Our unique approach is based on the chemical and physical analysis of the solid interfaces and characterization of the physicochemical properties of the liquid. Molecular modelling and Hansen solubility parameters (HSP) in combination with smart analytical tools and “design of experiment” are the key. Modification of the interface chemistry will provide unique properties.

Technology together with interface science can tailor the dispersed phase diameters from a coarse dispersion (suspension) over a colloidal dispersion with particle sizes well below 1 micrometer to even nano-dispersions. Our “smart throughput screening” methodology ensures an optimal output/input balance.

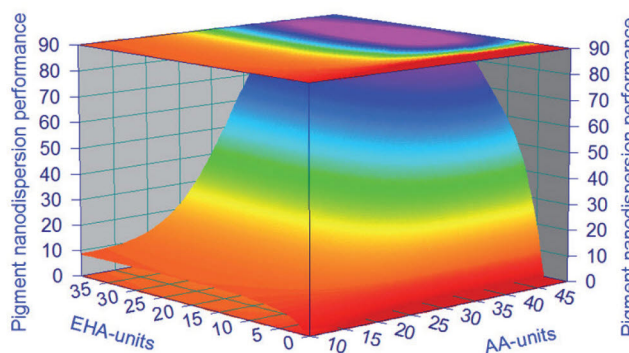
We have a high performance collection of commercially available dispersing agents for all types of materials and for liquid dispersing phases ranging from apolar oils, over solvents (including UV-curable monomers) to water based applications. Furthermore, we can synthesize tailor made dispersing agents giving you the competitive edge for your application.

HIGHLIGHTS

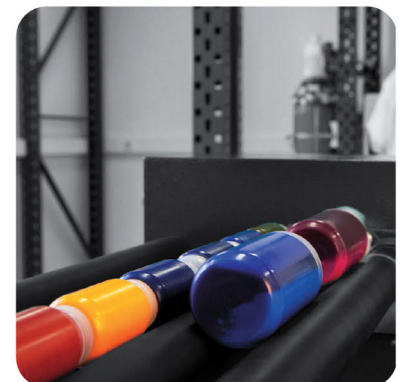
- ✓ **Micro to nano-sized dispersions**
- ✓ **Oil, solvent and waterborne**
- ✓ **Gram to kilogram scale**
- ✓ **Particle surface modification**
- ✓ **High performance dispersants**
- ✓ **Bead milled dispersions**
- ✓ **Precipitation dispersions**
- ✓ **Dispersion by solvent stripping**
- ✓ **Particle size distribution**
- ✓ **Rheology**
- ✓ **Filtration tests**
- ✓ **Stability tests**
- ✓ **Compatibility study**



Hansen solubility parameters of solids and polymers



Design of experiment



Dispersion screening on jar mill



ChemStream, an innovative chemical R&D company, is specialized in translating material problems in sustainable formulations with focus on high performing nano-dispersions, functional coatings and inkjet inks. The R&D core team has more than 20 years experience in application driven and customized product development. ChemStream has its own lab facilities for chemical synthesis, formulating and characterizing from design to end user product.