

Project 1: High-throughput formulation, application and screening of high viscous solutions / dispersions / pastes (SDP).

Introduction

For a few years now, high throughput methodologies have been applied to different research areas, such as catalysts, polymers, coatings, magnetic and electronic materials. Recently, more academic and especially industrial interest can also be observed in the area of high throughput formulation research. For a number of reasons, formulations research is well suited for the application of high throughput technologies: typical formulations can easily consist of 10–15 active components. The nature and concentration of these components need to be carefully optimized for the target application. Additionally, the application and the performance testing of the formulations may each involve many adjustable parameters. Altogether, this presents an incredibly large experimental space. Finally, many formulations have short product cycles, which increase the need for new developments and shorter commercialization periods.

Mission

One of Flamac's projects includes the development of high-throughput methodologies for the formulation, application and screening of high viscous solutions / dispersions / pastes. This way, Flamac aims to accelerate innovative research for new materials and formulations, their properties and applications.

These formulations can be used for a broad range of applications, such as the optimization of lacquers, paints, inks, films and coatings, adhesives and lubricants, agrochemical and cosmetic formulations, food formulations such as chocolate, and catalytic reaction mixtures.

In the first year of this project focus was on negotiations with 2 major workflow delivery companies (Symyx and HTE) in order to have hard- and software available for installation in Flamac – Gent. A formulation, a coating, a screening robot and software from the Symyx workflow are available since the end of 2005. The high-throughput workflow of HTE has been installed in April 2006. Further workflow extensions are planned for the second half of 2006 or later.