

**Contract No.:** G1RD-CT-2001-00649

**Title:** Modelling and Optimisation of Industrial Absorption Processes

**Duration:** 01/01/2002 - 30/06/2003

**Abstract**

The major innovation of this project was the development of a fully integrated set of modelling, simulation and optimisation methodologies, and computer-aided tools for designing, synthesizing, controlling and efficiently operating sustainable absorption processes in order to reduce cost, waste and energy while developing realistic operating strategies which can be implemented in practise. It thus represented a key enabling technology for chemical manufacturers to maximize profit and gain a competitive advantage.

CHIMAR provided an industrial case study for the development and application of the integrated approach in the production of formaldehyde and urea-formaldehyde pre-condensate. Part of the data requested was the composition of the intermediate and final products of the absorption tower. To determine this composition, CHIMAR developed a new methodology based on FT-NIR spectroscopy.