



DOMINO

Dispersion of Nanoparticles in Liquids AN INDUSTRIAL CONSORTIUM BY BHR GROUP

BHR Group launched an industrial consortium, DOMINO, in October 2007. This project, fully sponsored by its industrial members, investigates the incorporation and dispersion of nanoparticles and nanoclays in liquids.

DOMINO aims to develop process design procedures based on the experimental and numerical findings of the project, thus enabling member companies to increase the profitability of their processes.

The Process and Technical Focus

- Suspension (wetting, drawing down without settling)
- Break up of nanoparticle clusters
- Stabilisation
- Dissolution

Current emphasis is on the incorporation and break up of nanoparticle clusters, intercalation and exfoliation of nanoclays.

The Consortium

The consortium is industrially funded and the work programme steered by its industrial members through an annual voting system.

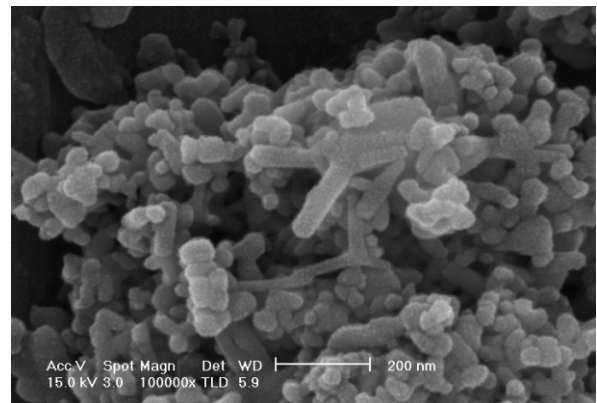
The Work Programme

The programme comprises experimental studies, numerical modelling work and development of design procedures. The incorporation, kinetics and mechanisms of break up are studied in relation to equipment design, geometry and material properties. A selection of devices used include:

- Ultrasonic devices
- Microfluidics
- Bead mills
- Batch rotor-stators
- In-line rotor-stators
- Stirred tanks

Dissemination

- Regular project meetings
- Confidential reports, reviews, design procedures
- Dissemination seminars.





BHR Group and DOMINO

BHR Group is an independent industrial research and consultancy organisation with an international reputation and over 60 years experience in the field of fluid engineering. It has extensive process engineering knowledge and expertise based on experimental and numerical research in the areas of fluid mixing, multi-phase flow and rheology. DOMINO builds on the expertise developed during several funded projects and collaborative industrial consortia including PROFORM (Transforming Nanoparticles into Sustainable Consumer Products Through Advanced Product and Process Formulation), HILINE (High Intensity In-line Mixing) and FMP (Fluid Mixing Processes).

Benefits of Membership

- Access to all confidential results, findings, recommendations, experimental procedures, design procedures, computational models developed during the project
- Networking platform
- Confidential support for implementation of findings
- Training seminars

Members and Collaborators

Current DOMINO members are from chemicals, consumer and health care companies and equipment manufacturers:

- Huntsman, Belgium
- Michelin, France
- Procter and Gamble, USA
- Solvay, Belgium
- Southern Clays Inc., USA
- Willy Bachofen AG, Switzerland
- Ytron Quadro, UK

DOMINO also collaborates with other organisations, working closely with Meritics, the representative of Beckman Coulter in the UK and consultants:

Professor J. Baldyga -

Warsaw University of Technology, Poland

Dr Art Etchells, (ex DuPont), USA



Future Plans

BHR Group is actively expanding its membership to increase the funding available for the technical programme, in discussion with its members. Future work is envisaged to cover new particle-liquid systems and process devices.

In addition, BHR Group is pursuing participation in EU and government funded projects to develop the current expertise.

Contact us for more information or visit our website www.bhrgroup.com

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