Content archived on 2024-04-19

Encrassement en phase liquide des echangeurs compacts

Fact Sheet

Project Information

Grant agreement ID: JOU20033

Project closed

Start date
1 March 1993

End date
31 August 1995

Funded under
Specific research and technological development programme (EEC) in the field of non-nuclear energy, 1990-1994

Total cost
No data

EU contribution
No data

Coordinated by
Commissariat à l'Energie Atomique (CEA)
France

Objective

Compact heat exchangers are becoming important. However, they are liable to fouling.

The principal objective of this project is to define the conditions in which compact (or improved surface) heat exchangers can be used with fouling liquids.

The results from the various organisations working together on the project helped to define the conditions in which compact heat exchangers can be used with liquid

causing fouling. The numerical simulations were developed and validated experimentally. They could then be used to design new heat exchanger channel geometries less prone to fouling. The fouling models developed included the concept of a prediction model for the evolution of the fouling resistance over time. The industrial measurements that were carried out under various conditions confirmed that the main parameters influencing fouling deposition and removal were accurately identified in the laboratory investigations. Plate heat exchangers used in the sugar plant were found to be less sensitive to fouling than plain tube exchangers and therefore could replace conventional shell and tube heat exchangers in some applications.
Numerous physical mechanisms combine to contribute to the problem of fouling in heat exchangers. The problem has to be dealt with on several levels by various approaches:
- a phenomenological approach in generic studies which are intended to isolate a particular phenomenon in order to reproduce and model it in good conditions. University laboratories and research centres which must focus on the industrial problem involved frequently take this approach.

- a second and more general approach to the phenomena can also be considered. This approach is closely related to the industrial environment and is conducted in situ under actual operating conditions. It is often difficult but it establishes the credibility of the rest of the procedure, by accurately locating the industrial problem concerned. The various actual cases studied here involve the following areas of industry: chemicals, agro-food, petrochemicals, papermaking, etc.
The two preceding approaches will be used in accurately modelling the various phenomena involved to facilitate the improved sizing of equipment and more effective detection and prevention of fouling problems in compact exchangers.

Fields of science (EuroSciVoc)

natural sciences > mathematics > pure mathematics > **geometry**

Programme(s)

FP3-JOULE 2 - Specific research and technological development programme (EEC) in the field of non-nuclear energy, 1990-1994

Topic(s)

040201 - Industry

Call for proposal

Data not available

Funding Scheme

CSC - Cost-sharing contracts

Coordinator

Commissariat à l'Energie Atomique (CEA)

EU contribution

No data

Total cost

No data

Address

Centre d'Études de Grenoble
38041 Grenoble
France

Participants (11)

BARRIQUAND ECHANGEURS S.A.

France

EU contribution

No data

Address

Rue Saint Claude 9/13
42334 ROANNE

Total cost

No data

Bip Chemicals Ltd

United Kingdom

EU contribution

No data

Address

Popes Lane
B69 4PD Oldbury

Total cost

No data

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE

France

EU contribution

No data

Address

Avenue de la Foret de Haye 2
54504 VANDOEUVRE-LES-NANCY

Total cost

No data

COMPAGNIE INDUSTRIELLE D'APPLICATIONS THERMIQUES

France

EU contribution

No data

Address

Rue Jean Falconnier 30
01350 CULOZ

Total cost

No data

Commissariat à l'Energie Atomique

France

EU contribution

No data

Address

Ctr Etudes de Cadarache - CE-CA
13108 Saint-Paul-lez-Durance

Total cost

No data

FOUNDATION OF RESEARCH AND TECHNOLOGY - HELLAS

Greece

EU contribution

No data

Address

6th km, Charilaou - Thermi Road
57001 Thessaloniki

Total cost

No data

Institut National de la Recherche Agronomique (INRA)

France

EU contribution

No data

Address

Centre de Recherche de Lille 369 rue Jules Guesde
59651 Villeneuve d'Ascq

Total cost

No data

National Engineering Laboratory (NEL)

United Kingdom

EU contribution

No data

Address

G75 0QU East Kilbride

Total cost

No data

Packinox

France

EU contribution

No data

Address

11 Quai Conti
78430 Louviciennes

Total cost

No data

UNIVERSITY OF BIRMINGHAM

United Kingdom

EU contribution

No data

Address

Edgbaston
B15 2TT Birmingham

Total cost

No data

United Kingdom Atomic Energy Authority

United Kingdom

EU contribution

No data

Address

353,Harwell
OX11 0RA Didcot - Oxfordshire

Total cost

No data

Last update: 23 March 1995

Permalink: https://cordis.europa.eu/project/id/JOU20033

European Union, 2025