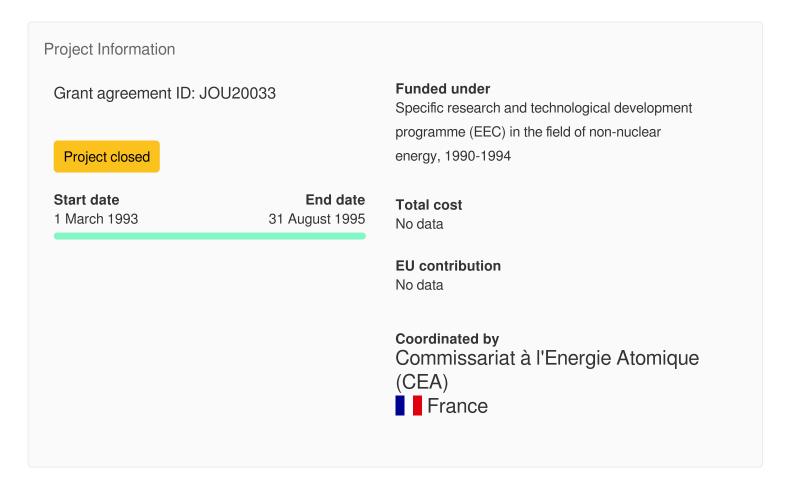


Content archived on 2024-04-19

# Encrassement en phase liquide des echangeurs compacts

### **Fact Sheet**



# **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) 6

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)

# 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





# Participants (11)



#### BARRIQUAND ECHANGEURS S.A.



EU contribution

No data

Address

Rue Saint Claude 9/13

**42334 ROANNE** 



Total cost



#### **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



EU contribution

No data

Address

Rue Jean Falconnier 30

01350 CULOZ



Total cost



#### 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)



EU contribution

No data

Address

Total cost



## 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**



EU contribution

No data

Address

**Edgbaston** 

B15 2TT Birmingham

Total cost



#### **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