NANOSTRUCTURED ELECTROLYTE MEMBRANES BASED ON POLYMER-IONIC LIQUIDS-ZEOLITE COMPOSITES FOR HIGH TEMPERATURE PEM FUEL CELL

Fact Sheet

Project information

**ZEOCELL**

Grant agreement ID: 209481

Status

Closed project

Funded under:

**FP7-ENERGY**

Overall budget:

€ 2 654 938

EU contribution

€ 1 917 401

Coordinated by:

UNIVERSIDAD DE ZARAGOZA

Spain

Start date

1 January 2008

End date

31 December 2010

Objective

The PEMFC represents one of the most promising technologies in the field of fuel cells. One of the keys to the success of the PEMFC technology is the development of improved electrolyte membrane materials which can be produced in mass and can operate within a temperature range of 130-200°C. The ZEOCELL project will develop a nanostructured electrolyte membrane based on a new composite multifunctional material consisting of the combination of 3 materials: zeolites, ionic liquids and polymers – integrating their beneficial characteristics. The membrane will have an innovative structure comprising a 2D polymer matrix and two zeolite layers, with the following properties:

- High ionic conductivity: ≥100 mS/cm at 150°C;
- Suitability for operating at temperatures between 130-200°C;
- Good chemical, mechanical and thermal stability up to 200°C;
- Durability (<1% performance degradation during the first 1000 hours working);
- Low fuel cross-over;
Field of Science

/natural sciences/chemical sciences/polymer science
/engineering and technology/environmental engineering/energy and fuels/fuel cell
/social sciences/economics and business/business and management/commerce

Programme(s)

FP7-ENERGY - Specific Programme "Cooperation": Energy

Topic(s)

ENERGY-2007-1.1-01 - Basic research for materials and processes for Polymer Electrolyte Membrane Fuel Cells (PEMFC)
ENERGY-2007-1.1-03 - Innovative concepts for fuel cells

Call for proposal

FP7-ENERGY-2007-1-RTD

See other projects for this call

Funding Scheme

CP-FP - Small or medium-scale focused research project

Coordinator

UNIVERSIDAD DE ZARAGOZA

Address
Calle Pedro Cerbuna 12
50009 Zaragoza
Spain

Activity type
Higher or Secondary Education Establishments

EU Contribution
€ 499 720

Website
Contact the organisation

Administrative Contact
Oscar López Lorente (Dr.)

Participants (6)
FUNDACION CIDETEC
Spain
EU Contribution
€ 343,600
Address
Paseo Miramon 196 Parque Tecnologico De Miramon
20014 San Sebastian
Activity type
Research Organisations
Website
Contact the organisation
Administrative Contact
Peio Casi Martinez (Dr.)

UNIVERSITEIT TWENTE
Netherlands
EU Contribution
€ 154,299
Address
Drienerlolaan 5
7522 Nb Enschede
Activity type
Higher or Secondary Education Establishments
Website
Contact the organisation
Administrative Contact
Zandrie Borneman (Dr.)

IDRYMA TECHNOLOGIAS KAI EREVNAS
Greece
EU Contribution
€ 296,983
Address
N Plastira Str 100
70013 Irakleio
Activity type
Research Organisations
Website
Contact the organisation
Administrative Contact
Antonia Fardis (Ms.)
<table>
<thead>
<tr>
<th>Organisation</th>
<th>Country</th>
<th>EU Contribution</th>
<th>Address</th>
<th>Activity type</th>
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<tr>
<td>CENTRO RICERCHE FIAT SCPA</td>
<td>Italy</td>
<td>€ 189 036</td>
<td>Strada Torino 50, 10043 Orbassano</td>
<td>Research Organisations</td>
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<td>SOLVIONIC</td>
<td>France</td>
<td>€ 172 114</td>
<td>195 Rte D'Espagne Site, Bioparc Sanofi, 31100 Toulouse</td>
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<td>CELAYA, EMPARANZA Y GALDOS INTERNACIONAL, S.A.</td>
<td>Spain</td>
<td>€ 261 649</td>
<td>Calle Artapadura 11, 01013 Vitoria</td>
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