Development of a low cost in-line polymer inspection system to improve the use of recycled materials in plastics processing industry

Fact Sheet

Project Information

POLYSENSE

Grant agreement ID: 262039

Project website

Project closed

Start date
1 January 2011

End date
31 March 2013

Funded under
Specific Programme "Capacities": Research for the benefit of SMEs

Total cost
€ 1 267 225,63

EU contribution
€ 924 390,00

Coordinated by
IBANEZ EXTRUSORAS, S.L.
Spain

This project is featured in...

Objective

The polymer industry, including producers, converters and machine manufacturers employ 1.6 million people and generate annual sales worth over €300 billion. Europe is the world leader in plastics recycling and the second worldwide plastic producer, but competence by emerging industrialised nations, such as China, is growing bigger and represents a major thread for European interests in mid and long term. There is recently a big concern towards the recycling of wasted materials, including plastics. Despite the growth of recycled materials in the polymer sector, there are presently two main factors that prevent a higher use of recycled materials: Uncertainty in fixing final product density and quality of the final product, which is directly affected by viscosity of the blend. Yet despite this tremendous competition, many polymer processes still rely on trial and error for their optimisation, leading to the creation of enormous tonnes of scrap during adjusting periods. Current methods, which enable only indirect measurements such as temperature, screw torque and pressure, prove completely insufficient for characterising such complex behaviour. The industry needs rapid, reliable, non-invasive and cost effective analytical methods for process control in order to ensure desired values of density and viscosity of the polymer. This project thus proposes to develop a compact, non invasive, real-time sensor based on an ultrasonic piezoelectric transducer for in-line measurements during polymer processes. POLYSENSE will be designed for suitable insertion in a standard pressure port, which will enable the in-line measurement of density and viscosity of the polymers while circulating in a molten state inside the machine allowing the prediction of the polymer behaviour and the feedback to the process control. The proposal is highly relevant for the SME proposers who are polymer processors and will thus benefit directly as end-users from the developed POLYSENSE technology by incrementing the ratio of cheap recycled material within their products and increasing final product quality, or equipment builders and suppliers who will benefit from supplying this innovative technology to the European polymer processing industry.

Fields of science (EuroSciVoc)

engineering and technology > environmental engineering > waste management > waste treatment processes > **recycling**

natural sciences > chemical sciences > **polymer sciences**

engineering and technology > electrical engineering, electronic engineering, information engineering > electronic engineering > **sensors**

Programme(s)

FP7-SME - Specific Programme "Capacities": Research for the benefit of SMEs

Topic(s)

SME-1 - Research for SMEs

Call for proposal

FP7-SME-2010-1
See other projects for this call

Funding Scheme

BSG-SME - Research for SMEs

Coordinator

IBANEZ EXTRUSORAS, S.L.

EU contribution

€ 230 454,61

Total cost

No data

Address

CALLE DOCTOR FLEMING 8
46930 QUART DE POBLET
Spain

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Participants (7)

RHOSONICS ANALYTICAL BV

Netherlands

EU contribution

€ 174 211,24

Address

Midden Engweg 37A
3882 TS Putten

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

A K INDUSTRIES LTD

United Kingdom

EU contribution

€ 163 019,71

Address

FOXWOOD COURT
HR2 6JQ HEREFORD

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

SALVIO BUSQUETS SA

Spain

EU contribution

€ 153 711,35

Address

CALLE LES CORTS 10
08349 CABRERA DE MAR BARCELONA

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

MULTIPLAST KUNSTSTOFFVERARBEITUNG GMBH

Germany

EU contribution

€ 173 453,71

Address

INDUSTRIESTRASSE 6
94513 SCHONBERG

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

NTRAM GENERAL S.A.

Spain

EU contribution

€ 9 786,30

Address

CALLE VICTOR PRADERA 45
08940 Cornella De Llobregat Barcelona

Region

Este > Cataluña > Barcelona

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

UNIVERSITY OF BRADFORD

United Kingdom

EU contribution

€ 12 944,70

Address

RICHMOND ROAD
BD7 1DP Bradford

Region

Yorkshire and the Humber > West Yorkshire > Bradford

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

KAUNO TECHNOLOGIJOS UNIVERSITETAS

Lithuania

EU contribution

€ 6 808,38

Address

K DONELAICIO 73
LT-44029 Kaunas

Region

Lietuva > Vidurio ir vakarų Lietuvos regionas > Kauno apskritis

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Total cost

No data

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