Synthesis and Formulation of Nanoparticles for pinning in YBCO coated conductors

Fact Sheet

Project Information

SynFoNY
Grant agreement ID: 722071

Funded under H2020-EU.1.3.1.

Overall budget € 499 776,48

Project website

Status
Ongoing project

Coordinated by UNIVERSITEIT GENT Belgium

Start date 1 January 2017
End date 31 December 2020

EU contribution € 499 776,72

Objective

The main research objective is the formulation of new types of multimetaloxide nanocrystals for incorporation as artificial pinning centers in nanocomposite thin films processed using chemical solution deposition. Superconducting coated conductors are chosen as the proof of concept. Innovative chemical deposition methods and the incorporation of preformed and inert multimetaloxide nanocrystals as pinning centres into the superconducting nanocomposite thin film are the innovative aspects compared to ongoing research. A successful realisation of the objectives of this EID proposal will need training of ESRs on different aspects ranging from chemical precursor design, stabilisation of nanocrystals in precursor solutions, continuous deposition of superconducting nanocomposite coatings and optimisation of the superconducting properties in alternating magnetic fields.

The main objective of this programme is, in line with the EID scope, to enhance the career perspectives of early stage researchers (ESRs) by providing the unique opportunity to be exposed to research and training in both an academic as well as an
opportunity to be exposed to research and training in both an academic as well as an industrial environment. This will be facilitated through the partnership between Ghent University and the industrial partner Deutsche Nanoschicht GmbH, bringing together two widely respected research partners, active in the field of inorganic nanomaterials synthesis and coating development for improved superconducting wires for energy applications. The involved partner organisations entered the project for specific added value in terms of industrial scaled synthesis of nanocomposite precursors (hte GmbH: high throughput designs; BASF SE: new formulations and flow chemistry) and Univ. of Turku (physical characterisation).

Field of science

/ engineering and technology/materials engineering/coating and films
/ humanities/arts/modern and contemporary art/film
/ engineering and technology/nanotechnology/nano-materials/nanocrystal
/ natural sciences/physical sciences/electromagnetism and electronics/electrical conductivity/superconductor
/ engineering and technology/nanotechnology/nano-materials

Programme(s)

Topic(s)

Call for proposal

H2020-MSCA-ITN-2016

Funding Scheme

MSCA-ITN-EID - European Industrial Doctorates

Coordinator

UNIVERSITEIT GENT

Address
Sint Pietersnieuwstraat 25
9000 Gent
Belgium

Website

Activity type
Higher or Secondary Education Establishments

EU contribution
€ 499 776,48

Contact the organisation
## Participants (1)

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## Partners (3)

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Record number: 207411

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