Bioinspired-polyamidoamine/nanoparticle coatings as high-performing flame retardants for cellulosic fabrics

Fact Sheet

Project Information

PANACEA
Grant agreement ID: 891055

DOI
10.3030/891055

Funded under
EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost
€ 171 473,28

EU contribution
€ 171 473,28

Project terminated on 19 November 2022

Start date
1 March 2021

End date
28 February 2023

Coordinated by
UNIVERSITA DEGLI STUDI DI MILANO
Italy

Project description

Eco-friendly, high-performance flame retardant for cellulosic fabrics

The EU-funded PANACEA project deals with the design of bioinspired-polyamidoamine/nanoparticle coatings as high-performing flame retardants (FRs) for cellulosic fabrics. The main purpose is to synthesise environmentally friendly, non-toxic FRs with performances comparable to those of the traditional FRs currently used for cellulosic textiles. The objective is to study novel coatings based on polyamidoamines (PAAs), a family of synthetic water-soluble biocompatible and biodegradable polymers, that are efficient FRs for cotton. PAA preparation is
considered green and scalable when carried out in water, at room temperature and without catalysts. Furthermore, the synergism between PAAs and some nanoparticles will be studied for suppressing cotton combustion in the most drastic fire scenarios, guaranteeing a low emission of toxic products.

**Fields of science**

- engineering and technology > nanotechnology > nano-materials > two-dimensional nanostructures > graphene
- natural sciences > chemical sciences > electrochemistry > electrolysis
- natural sciences > chemical sciences > inorganic chemistry > transition metals
- engineering and technology > materials engineering > textiles
- engineering and technology > materials engineering > coating and films

**Keywords**

Polymer combustion, Flame retardancy, Polyamidoamines, Cotton

**Programme(s)**

- H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions
- H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

**Topic(s)**

MSCA-IF-2019 - Individual Fellowships

**Call for proposal**

H2020-MSCA-IF-2019

See other projects for this call

**Funding Scheme**

MSCA-IF - Marie Skłodowska-Curie Individual Fellowships (IF)
Coordinator

UNIVERSITA DEGLI STUDI DI MILANO

Net EU contribution
€ 171 473,28

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Nord-Ovest > Lombardia > Milano

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

Other funding
€ 0,00

EC signature date 1 April 2020
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Permalink: https://cordis.europa.eu/project/id/891055

European Union, 2023