



UNIVERSITY OF
THESSALY



Institut für
Textiltechnik und
Lehrstuhl für
Textilmaschinenbau



AgriTexSil

Development of a textile with silica coating for environmental friendly control of insects in agricultural production

Aim of AgriTexSil is to develop an agricultural net which is eco friendly and non toxic and can actively protect plants against all kinds of insects that enter the greenhouse through the insect screen.

AgriTexSil approach includes the development of nets with bigger mesh sizes to overcome the disadvantages of using low porosity screens.

A plasma coating process will be developed to cover different types of screens with nano silica particles. To produce the screens, a melt spinning process will be developed with regard to particle processing, to the build-up of a coating and to the coated yarn and textile.

The screens that will be developed will be tested in pilot greenhouse conditions to study the effect on the microclimate and on harmful insects in field trials.

Project partners

Laboratory of Agricultural Constructions and Environmental Control of University of Thessaly (UTH)

The Laboratory of Agricultural Constructions & Environmental Control (LACEC) of the Department of Agriculture Crop Production and Rural Environment of UTH is active in the field of Agricultural Constructions with special emphasis in greenhouses. The research of LACEC is focused on the environmental friendly production by means of optimal greenhouse climate control that leads to reduction of inputs in energy, water, nutrients, fertilizers and pesticides and production footprint.

lacec.agr.uth.gr www.uth.gr mail: nkatsoul@uth.gr tel: +30 242 109 3249

Thrace Nonwovens & Geosynthetics S.A. (Thrace NG)

Thrace Nonwovens & Geosynthetics S.A. (Thrace NG) was established in 2010, assuming all the Technical Fabrics` activities of Thrace Plastics, which was originally founded in 1979.

Thrace NG is among the top producers of Technical Fabrics in the world. Thrace is exporting yarns/fibres and textiles with applications in geosynthetics, agri & horticulture, building construction, industrial fabrics, packaging, furniture & bedding, filtration, disposables, medical and workwear.

www.thracegroup.com/fr/en/companies/thrace-ng mail: kmystikos@thraceplastics.gr tel: +30 25410 45 610

Institut für Textiltechnik (ITA) of RWTH Aachen University

The Institut für Textiltechnik (ITA) is one of the TOP5-institutes at the RWTH Aachen University, which was awarded by the German Federal Excellence-Initiative.

The main focus of the institute lies on the: • department Mechanical Engineering • textile processing • polymer technology • high performance fiber materials • textile preforming • composites, • medicine technology • smart textiles and joining

www.ita.rwth-aachen.de mail: martin.pelzer@ita.rwth-aachen.de tel: +49 (0) 241 80 23468

Powder and Surface GmbH (P&S)

For more than a decade P&S is dealing with the development, production and sales of powder pumps to convey difficult to handle powders as for example powders with non-flowing properties.

www.powderandsurface.de mail: info@powderandsurface.de tel: +49 02948 9497183



HELLENIC REPUBLIC
Ministry of Education,
Research and Religious Affairs



GERT
GENERAL SECRETARIAT FOR
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EPANeK 2014-2020
OPERATIONAL PROGRAMME
COMPETITIVENESS
ENTREPRENEURSHIP
INNOVATION

HELLENIC REPUBLIC
MINISTRY OF
ECONOMY & DEVELOPMENT
SPECIAL SECRETARY FOR ERDF & CF
MANAGING AUTHORITY OF EPANeK

ΕΣΠΑ
2014-2020
ανάπτυξη - εργασία - αλληλεγγύη
Partnership Agreement
2014 - 2020

Implementation – Work Packages

WP1: Management

Objectives: To successfully coordinate the project management and coordination

WP2: Melt spinning of fibres for agrotextiles

Objectives: Development of coated fibres

WP3: Coating of fibres

Objectives: Development of a reproducible stable coating process inline the fibre production

WP4: Textile prototyping

Objectives: Production of woven fabric

WP5: Development of a Textile coating process

Objectives: Coating process of textiles

WP6: Large scale fabrication of coated textiles

Objectives: In-line coating of non-woven textiles

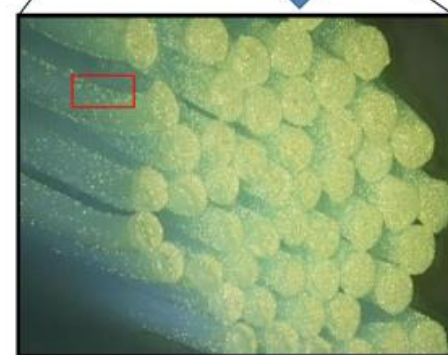
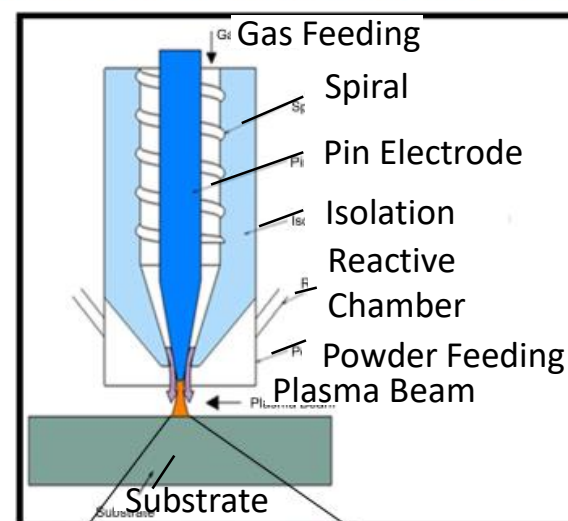
WP7: Textile evaluation

Objectives: To evaluate the aerodynamic and optical properties of the produced screen materials and the performance of the produced screen materials in the field

WP8: Dissemination

Objectives: To broadly disseminate the results of the project

Plasma functionalization of the net surface



Diamant particles on fiber surface (application: polishing rag)



Mesh characteristics

- Porosity
- Mesh size
- Thread dimension
- Texture (web, knitting)
- Resistance to airflow
- Light transmission/reflection
- Color

