Proiect PHYSFORTEL, contr. 44 PCCDI/2018

Etapa 2/2019

REZUMATUL ETAPEI

In cadrul etapei 2/2019 s-au realizat cercetari privind : i) realizarea materialelor textile si din piele cu proprietati antimicrobiene/de autocuratare/conductive folosind materiale compozite bazate pe nanostructuri oxidice, nanoparticule de Ag si polimeri conductori sau nanotuburi de carbon functionalizate. S-au evaluat caracteristicile morfologice, structurale si compozitionale ale straturilor depuse pe textile si piele ; ii) functionalizarea ecologica a materialelor textile si de piele pentru articole medicale, protectia muncii, sport si alte aplicatii ; iii) evaluarea caracteristicilor de confort, rezistenta si auto-curatare la actiunea unor poluanti de referinta ale materialelor/produselor textile si din piele cu acoperiri fotocatalitice de compozite grafene/nanoparticule TiO2, SiO2, tratate cu plasma rece in atmosfera deschisa ; iv) obţinerea şi caracterizarea materialelor hibride cu nanoparticule de ZnO tip „flower- like” pentru modificarea proprietăţilor de umectabilitate a materialelor textile şi din piele.

REZULTATE

Lista lucrari publicate

Nr. Crt.	Titlu articol	An aparitie	Revista	Autori	Status
1	Photoluminescence and structural properties of the nitrogen doped TiO2 and the influence of SiO2 and Ag nanoparticles	2019	JOURNAL OF PHYSICS-CONDENSED MATTER	- Nila Andreea - Baibarac Mihaela - Matea UDRESCU Adelina - Ion Smaranda - Mateescu Alice-Ortansa - Mereuta Paul - Negrila Constantin Catalin	Publicat
2	Properties of cotton and leather materials treated with new hybrid SiO2/TiO2/poly(2,2' bithiophene) nanocomposites	2019	Revista Industria de Textile	- Chirila Laura - Gaidau Carmen - Baibarac Mihaela - Stroe (Scocioreanu) Malvina - Popescu Alina - Stanca Maria - Radulescu Laura - Radulescu Denisa Maria - Radulescu Diana Elena - Alexe Cosmin-Andrei	Publicat
3	Facile synthesis of octyl-modified nanostructured silica coatings with tunable water repellence properties	2019	Coatings	- Miclaus Teodora - Scomoroscenco Cristina - Ghiurea Marius - Petcu Cristian - Balan Adriana - Tanase Maria - Cinteza Ludmila-Otilia	In Evaluare
4	A new route to obtain silver doped TiO2 nanoparticles with photocatalytic and antimicrobial activity	2019	REVUE ROUMAINE DE CHIMIE	- Suciu RC - Popa A - Socaci Crina - Rosu Marcela-Corina - Cosma Dragos - Urda Alexandra - Vodnar DC	In Evaluare
5	Antibacterial activity of TiO2 nanoparticles decorated with silver and copper under different LED irradiation	2019	REVUE ROUMAINE DE CHIMIE	- Suciu M - Porav Alin-Sebastian - Socaci Crina - Rosu Marcela-Corina - Coros Maria - Lazar D - Turza Alexandru - Radu T - Macavei S	In Evaluare
6	TiO2-SiO2 nanocomposite-coated cotton fabrics with UV protection and photocatalytic activity	2019	REVUE ROUMAINE DE CHIMIE	- Rosu Marcela-Corina - Suciu RC - Coros Maria - Socaci Crina - Turza Alexandru - Cosma Dragos - Urda Alexandra - Chirila Laura - Timpu Ilie Daniel	In Evaluare
7	Physical chemical investigations of gamma irradiated goat parchment	2019	RADIATION PHYSICS AND CHEMISTRY	- Lungu Ion Bogdan	In Evaluare
8	Ag/chitosan functionalization and gamma irradiation treatment of cotton textile materials	2019	RADIATION PHYSICS AND CHEMISTRY	- Capraru Ovidiu Alexandru	In Evaluare

Comunicari

Nr. Crt.	Titlu	An	Tip	Publicatie
1	ANALIZA PRIN DIFRACTOMETRIE WAXD A UNOR NANOCOMPOZITE CU TiO2, SiO2, GO, GR, Ag, PENTRU APLICA_II ÎN INDUSTRIA MATERIALELOR TEXTILE	2019	Prezentare Orala	
2	Surface coatings of TiO2-Ag and TiO2-Ag/graphene oxide onto cotton fabrics by atmospheric plasma treatment	2019	Poster	
3	New plasma applicator design for the improved activation of large surfaces	2019	Prezentare Orala	
4	Study of modified nano-composites for applications in textile materials industry	2019	Prezentare Orala	
5	Cotton fabrics treated with TiO2/SiO2, TiO2/SiO2/reduced graphene oxide nanocomposites	2019	Poster	
6	Photocatalytic self-cleaning ability of Ag/TiO2-coated flax fabrics	2019	Poster	
7	Surface functionalization of textile materials via combined ultrasound/gamma irradiation	2019	Poster	
8	Cotton fabrics with improved fire retardant protection	2019	Poster	
9	Surface characterization of treated cotton fibers by atmospheric pressure plasma	2019	Poster	
10	UV protective characteristics of TiO2/SiO2/graphene oxide-coated leather samples	2019	Poster	
11	Functionalizaon of sheepskin surface using graphene oxide-TiO2-Ag and graphene oxide-TiO2-Cu nanocomposites	2019	Poster	Conference Proceedings Volume 19, Nano, Bio, Green and Space: Technologies for Sustainable Future, Issue:6.1
12	Design of Mulfunctional Leather By Finishing With Multi-Walled Carbon Nanotube Composites	2019	Prezentare Orala	
13	Piei inteligente realizate cu ajutorul nanomaterialelor	2019	Prezentare Orala	
14	Proprietatile functionale ale materialelor textile tratate cu nanoparticule de TiO2:N si SiO2	2019	Poster	
15	Functional properties of cotton fabrics treated with colloidal dispersions based on TiO2:N and SiO2 nanoparticles	2019	Poster	Conference Proceedings of the 19th Internaonal Muldisciplinary Scienfic GeoConference SGEM 2019
16	Textile materials treatment with mixture of the TiO2 :N and SiO2 nanoparticles for improvent of their self-cleaning properties	2019	Poster	
17	Composites based on poly(2, 2'-bithiophene) and TiO2 nanoparticles : from chemical synthesis to optical properties and their applications in the leather and textile materials field	2019	Poster	
18	Facile Synthesis of Robust Superamphiphobic Coatings for Multifunctional Textiles	2019	Prezentare Orala	
19	Eco-friendly synthesis of novel multifunctional coatings with silver decorated zinc oxide nanoparticles	2019	Prezentare Orala	
20	Fabrication and characterization of novel hybrid coatings for hydrophobization of textiles based on zinc oxide and silica modified nanoparticles	2019	Poster	
21	Multifunctional coatings based on metallic and metal oxide nanoparticles	2019	Poster	
22	Preparation and characterization of Ag decorated ZnO nanoparticles for multifunctional protective coatings on paper and textiles	2019	Poster	
23	Novel coatings for superhydrophobic / superamphiphobic surfaces with tunable morphology of nanoparticles	2019	Poster	
24	Synergistic effects in nanoparticle-based protective coatings for paper and textiles	2019	Poster	
25	Facile synthesis of superamphiphobic coatings for textiles with special wettability	2019	Poster	
26	Gamma irradiation and nanoparticles treatments for the functionalization of leather materials	2019	Poster	

27	Structural and microbiological characterization of gamma irradiated leather	2019	Poster	
28	Investigation of leather materials functionalized by chemical and gamma radiation treatments	2019	Poster	
29	FUNCTIONALIZATION OF COTTON TEXTILE MATERIALS WITH AG+ AND ZnO NANOPARTICLES AND GAMMA IRRADIATION	2019	Poster	
30	FUNCTIONALIZATION TREATMENTS WITH GAMMA RADIATION AND NANOPARTICLES OF LEATHER MATERIALS	2019	Poster	
31	TRATAMENTE DE FUNCȚIONALIZARE CU RADIAȚII GAMMA ȘI NANOPARTICULE A MATERIALELOR DIN PIELE	2019	Prezentare Orala	

Cereri de brevet

Nr. crt.	Tip brevet	Titlu brevet	Autoritate emitenta	Numar brevet	Stare
1	National	Procedee de imbunatatire a aderentei straturilor subtiri, depuse pe materiale textile din dispersii coloidale de nanomateriale semiconductoare, metalice sau nemetalice, pentru functionalizarea acestora	OSIM	A 2019 00738	Cerere depusa
2	International	Method of leather treatment and leather preserved by gamma radiation	EPO	EPO EP19464018/ 29.10.2-19	Cerere depusa