



SURFACE ENGINEERING FOR BIOMEDICAL APPLICATIONS

Engineering with a Medical Perspective: Future Begins Today

PROGRAM
11 November 2020

BG TIME	LECTURER	PASSWORD
08:30 – 9:15	Establishing of Connection Administration & Technical Remarks	
09:15 – 09:30	Opening Remarks: <i><u>Academician Prof. Bogdan Petrunov, MD, PhD, DSc,</u></i> <i><u>Chairman of the Board of Trustees of MU-Pleven,</u></i> <i><u>Prof. Slavcho Tomov, MD, PhD, DSc, MU-Pleven and</u></i> <i><u>Prof. Petar Petrov, DSc, IE, BAS</u></i>	
I panel: BIOENGINEERING AND FUNDAMENTAL APPLICATIONS Chaired by: <u>Chief Assist. Prof. Stefan Valkov, PhD</u> <i>Institute of Electronics, BAS</i>		
	<i>Plenary lectures</i>	
09:30 – 10:00	1. <i>Femtosecond laser surface treatment for application in biomedicine</i> <i><u>Prof. Rui Vilar</u></i> <i>Technical University of Lisbon, Lisbon, Portugal</i>	
10:00 – 10:30	2. <i>Laser synthesis of the new Ti-based alloys for prosthetic application</i> <i><u>Prof. Amelia Almeida</u></i> <i>Technical University of Lisbon, Lisbon, Portugal</i>	
10:30 – 10:35	<i>5' Technical Brake</i>	
	<i>Oral presentations</i>	
10:35 – 10:45	3. <i>Influence of femtosecond laser processing parameters on surface morphology and wettability properties of polylactic acid (PLA)</i> <i><u>Assoc. Prof. Albena Daskalova, PhD</u></i> <i>Institute of Electronics, BAS</i>	
10:45 – 10:55	4. <i>A femtosecond laser-based strategy to modulate the race for the surface: micro/nanostructured ceramics surfaces to improve osteogenic differentiation and diminish</i>	



	<p><i>bacterial adhesion</i> <u>Angela Carvalho</u>^{1,2} ¹i3S - Instituto de Investigação e Inovação em Saúde, U. Porto, Portugal; ²INEB - Instituto de Engenharia Biomédica, U. Porto, Portugal</p>	
10:55 – 11:05	<p>5. <i>Impact of base pressure, post annealing and ageing on electrical properties of silver nanofilms</i> <u>Shiva Udachan</u> Rani Channamma University, Karnataka, India</p>	
11:05 – 11:15	<p>6. <i>Enhanced acetone-sensing properties of ZnO–noble metals composite nanostructures</i> <u>Assoc. Prof. Anna Dikovska, PhD</u> Institute of Electronics, BAS</p>	
11:15 – 11:20	5' Technical Brake	
11:20 – 11:30	<p>7. <i>Effect of interfacial compatibilization on PLA/Mg biocomposites for bioresorbable implants</i> <u>Meriam Ben Abdeljawad</u> Laboratory of Polymeric and Composite Materials (SMPC), Center of Innovation and Research in Materials and Polymers (CIRMAP), University of Mons, Belgium</p>	
11:30 – 11:40	<p>8. <i>Atmospheric plasma: a simple way to improve the interface between polysaccharides and polyesters</i> <u>Xavier Carette</u> Laboratory of Polymeric and Composite Materials (LPCM), University of Mons, Belgium</p>	
11:40 – 11:50	<p>9. <i>Ultra-short laser modification of chitosan/ silver nanoparticles (AgNPs) thin films for potential antimicrobial applications</i> <u>Assoc. Prof. Ekaterina Iordanova, PhD</u> Institute of Solid State Physics, BAS</p>	
11:50 – 13:00	Lunch Break	
II panel: NEW MATERIALS AND TECHNIQUES FOR BIOMEDICAL APPLICATIONS Chaired by: <u>Assoc. Prof. Albena Daskalova, PhD</u> Institute of Electronics, BAS		
	Plenary lectures	
13:00 – 13:30	<p>10. <i>Hybrid functionalized biomaterials for tissue engineering</i> <u>Prof. Endzhe Matykina</u> Departamento de Ingeniería Química y de Materiales, Facultad de Ciencias Químicas, Universidad Complutense, 28040 Madrid, Spain</p>	



13:30-14:00	<p>11. Grafene potential for optoelectronic and biomedical application <u>Prof. Vera Marinova</u> Institute of Optical Materials and Technologies (IOMT-BAS), Sofia 1113, Bulgaria</p>	
14:00 – 14:05	5' Technical Brake	
	Oral presentations	
14:05 – 14:15	<p>12. Structure and biocompatibility of PVD deposited TiN/TiO₂ coatings on electron beam treated Ti6Al4V alloy <u>Assoc. Prof. Maria Nikolova, PhD</u> Dept. of Material Science and Technology, University of Ruse "A. Kanchev", Ruse, Bulgaria</p>	
14:15 – 14:25	<p>13. The altered behavior of mesenchymal stem cells on 2D collagen matrices in oxidative environment <u>Svetoslava Stoycheva</u> Department of Biochemistry, Medical University-Pleven, Bulgaria</p>	
14:25 – 14:35	<p>14. Electron-beam surface alloying of Ti substrate with Ta films <u>Chief Assist. Prof. Stefan Valkov, PhD</u> Institute of Electronics, BAS</p>	
14:35 – 14:45	<p>15. Roughness and mechanical properties of electron beam surface modified and TiN/TiO₂ coated Ti6Al4V alloy for biomedical application <u>Assoc. Prof. Maria Nikolova, PhD</u> Dept. of Material Science and Technology, University of Ruse "A. Kanchev", Ruse, Bulgaria</p>	
14:45 – 14:55	<p>16. Surface modification of Co-Cr-Mo alloys by electron beam treatment <u>Chief Assist. Prof. Stefan Valkov, PhD</u> Institute of Electronics, BAS</p>	
14:55-15:05	<p>17. Biogenic ferroxides for application in electronics, biomedicine and biotechnology derived from leptothrix bacteria <u>Ralitsa Angelova, PhD</u> Institute of Electronics, BAS</p>	
15:05 – 15:10	5' Technical Brake	



III panel: APPLICATION OF MODERN ENGINEERING TECHNOLOGIES IN THE MEDICINE

Chaired by: Assoc. Prof. Nadia Veleva, PhD
Medical University - Plevén

	<i>Plenary lectures</i>	
15:10 – 15:40	<p>18. <i>Haemo-compatibility of plasma-treated vascular implants</i> <u>Prof. Miran Mozetič</u> Department of Surface Engineering, Jozef Stefan Institute, Ljubljana, Slovenia</p>	
15:40 – 16:10	<p>19. <i>How robotics has changed modern surgery</i> <u>Prof. Slavcho Tomov, MD, PhD, DSc</u> Medical University – Plevén, Bulgaria</p>	
16:10 – 16:40	<p>20. <i>Comparative analysis of robot-assisted and abdominal radical hysterectomy for patients with cervical cancer</i> <u>Prof. Grigor Gorchev, MD, PhD, DSc, Corresponding member of Bulgarian AS</u></p>	
16:40 – 16:45	<i>5 ' Technical Brake</i>	
	<i>Oral presentations</i>	
16:45 – 16:55	<p>21. <i>Investigation of the deviation during the information transfer from the prosthetic field to the laboratory scanners</i> <u>Hristina Galeva</u> Faculty of Dental medicine, Medical University, Sofia, Bulgaria</p>	
16:55 – 17:05	<p>22. <i>Effect of deposition parameters on the structural and mechanical stability of Ta-based coatings deposited on polymers for biomedical applications</i> <u>Assoc. Prof. Nikolai Donkov, PhD</u> Institute of Electronics, BAS</p>	
17:05 – 17:15	<p>23. <i>The digital axiograph – a novel tool in bruxism prevention</i> <u>Iva Taneva</u> Faculty of Dental medicine, Medical University, Sofia, Bulgaria</p>	
17:15 – 17:25	<p>24. <i>All-optically controlled density of alkali atom vapors for biomagnetic sensing applications</i> <u>Chief Assist. Prof. Stoyan Tsvetkov, PhD</u> Institute of Electronics, BAS</p>	



17:25 – 17:35	<p>25. Genetic landscape of primary lung adenocarcinoma - single institution experience <u>Assoc. Prof. Nataliya Chilingirova, MD, PhD</u> Science and Research Institute, Medical University – Pleven, Bulgaria</p>	
17:35 – 17:40	5 ‘ Technical Brake	
17:40 – 17:50	<p>26. Atmospheric particulate matter pollution over residential urban areas during COVID-19 Quarantine <u>Prof. Ivan Nedkov, DSc</u> Institute of Electronics, BAS</p>	
17:50 – 18:00	<p>27. 3D bioprinting of vascularised bone tissue: current advances and challenges <u>Vladislav Nankov, University Scientific Research Laboratory, Medical University – Pleven, Bulgaria</u></p>	
18:00 – 18:10	<p>28. Stereotactic vacuum aspiration biopsy of the breast – current indications and technical challenges <u>Prof. Dobromir Dimitrov, MD, PhD</u> Medical University – Pleven, Bulgaria</p>	
18:10 – 18:20	<p>29. Clinical application of Next generation sequencing technology <u>Prof. Katia Kovacheva, MD, PhD</u> Medical University – Pleven, Bulgaria</p>	
18:20	Closing Remarks	