Ninth International Conference

"Modern Trends in Science"

FMNS-2021

15 - 19.09.2021, Blagoevgrad, BULGARIA

BOOK OF ABSTRACTS

Patronized by
Prof. Borislav Yurukov
Rector of the South-West University

http://www.fmns.swu.bg

Ninth International Conference

"Modern Trends in Science"

FMNS-2021

BOOK OF ABSTRACTS

Published by

"Neofit Rilski" University Press

Blagoevgrad, September 2021

ORGANIZING COMMITTEE:

Chairman: Prof. Mario Mitov, South-West University "Neofit Rilski", Bulgaria

Deputy Chairman:

Assoc. Prof. Elena Karashtranova, South-West University "Neofit Rilski", Bulgaria
Assoc. Prof. Lidia Sakelarieva, South-West University "Neofit Rilski", Bulgaria

Members:

Krassimir Stoyanov, South-West University "Neofit Rilski", Bulgaria
Ralitsa Stanoeva, South-West University "Neofit Rilski", Bulgaria
Ilinka Dimitrova, South-West University "Neofit Rilski", Bulgaria
Elitsa Chorbadzhiyska, South-West University "Neofit Rilski", Bulgaria
Nadezhda Borisova, South-West University "Neofit Rilski", Bulgaria
Vladimir Karadzhov, South-West University "Neofit Rilski", Bulgaria
Vesselina Dalgacheva, South-West University "Neofit Rilski", Bulgaria
Ivan Nedyalkov, South-West University "Neofit Rilski", Bulgaria

Technical Support:

Boyana Garkova, South-West University "Neofit Rilski", Bulgaria
Metodi Traikov, South-West University "Neofit Rilski", Bulgaria
Hristina Kovacheva, South-West University "Neofit Rilski", Bulgaria

Conference Program

Registration (15.09.2021)
13:00 – 18:30

Opening Ceremony (16.09.2021)
10:00 – 10:30
Chairman: Prof. Mario Mitov, DSc, PhD

Plenary Lectures (16.09.2021)

10:30 – 11:15
Prof. Tony Spassov - Sofia University "St. Kliment Ohridski"
"Porous metallic structures by de-alloying amorphous and nanocrystalline materials"

11:15-12:00
Prof. Carlo Santoro – University of Manchester, UK
"Oxygen Reduction Reaction in neutral media: advancements and limitations"

Plenary Lectures (17.09.2021)

10:30 – 11:15
Dr. Manfred Schütze - Otto-von-Guericke University Magdeburg, Germany
"Models or reality - what is more useful? And how computer simulation can assist in this?"

11:15-12:00
Prof. German Perlovich - Russian Academy of Sciences
"Development of bioavailable drugs on basis of adamantine and memantine derivatives"

Cancelled

Section Sessions: 16 and 17.09.2021
13:30 - 18:20

Special session:
"Low-carbon energy for transport and household"
16.09.2021
13:30 - 18:20

Poster session: 16.09.2021
18:00 – 19:30

Social program
18.09.2021

Section: Physics

Thursday, September 16th	
Chairman: ***Assoc. Prof. Svetoslav Kolev***	
13:30-13:45	**O-P-1** Photodynamic Treatment of Gastrointestinal Tumour Model Using Different Photosensitizers *Lidia Zaharieva, Biliana Nikolova, Ivan Iliev, Vanya Mantareva, Ivan Angelov, Gennady Meerovich, Alexander Khorovodov, Oxana Semyachkina – Glushkovskaya, Ekaterina Borisova*
13:45-14:00	**O-P-2** Near-Infrared Spectroscopy of Ex Vivo Cutaneous Melanin-Pigmented Neoplasia *Victoria Mircheva, Petranka Troyanova, Ivan Terziev, Yulia Khristoforova, Ivan Bratchenko, Lyudmila Bratchenko, Ekaterina Borisova*
14:00-14:15	**O-P-3** Polarimetric Studies of Cutaneous Degenerative Conditions Ex Vivo in Visible Spectral Range *Stoyan Ilyov, Tsanislava Genova, Deyan Ivanov, Boyko Kolev, Tatiana Novikova, Petranka Troyanova, Ivan Terziev, KM Sindhoora, Nirmal Mazumder, Ekaterina Borisova*
14:15-14:30	**O-P-4** Endogenous and Exogenous Fluorescent Diagnostics of Gastrointestinal Tumours - Advances and Challenges *Ekaterina Borisova, Tsanislava Genova, Boyko Kolev, Alexander Khorovodov, Ilana Agranovich, Oxana Semyachkina-Glushkovskaya, Vanya Mantareva, Ivan Angelov, Hristo Valkov, Borislav Vladimirov*
14:30-14:45	**O-P-5** Impact of physical and chemical modification on the immobilization of β-galactosidase in poly-lactic acid multilayer structures *Aleksandar Grigorov, Asya Viraneva, Temenujka Yovcheva, Ilia Iliev, Ivanka Vlaeva*
14:45-15:00	**O-P-6** Milk protein-based formulations as controlled delivery systems for Tolfenamic acid *Sofia Milenkova, Bissera Pilicheva, Nikolay Zahariev, Temenuzhka Yovcheva, Maria Marudova*
Coffee break	
Chairman: ***Assoc. Prof. Ralitsa Stanoeva***	
15:30-15:45	**O-P-7** Influence of humidity on surface potential decay of gamma irradiated polypropylene and poly(ethylene terephthalate) electrets *Asya Viraneva, Ivanka Vlaeva, Temenuzhka Yovcheva*
15:45-16:00	**O-P-8** Optical quartz fibers as non-linear media *Lyuben Mihov, Todor Cholakov*
16:00-16:15	**O-P-9** Non-invasive study of changes in venous oxygen saturation **Cancelled** *Sergey Mamilov, Sergey Yesman, Dmitry Velyhotsky, Alexander Gisbrecht*
16:15-16:30	**O-P-10** Investigation of hydrodynamic phenomena during an electric discharge in a liquid *Mitko Stoev, Nurgul Shuyushbayeva, Nazgul Tanasheva, Gulsinay Altayeva, Alyia Kaliyeva*
16:30-16:45	**O-P-11** Opportunities of ecologization physics course *Nurgul Shuyushbayeva, Aliya Kaliyeva, Nazgul Tanasheva, Gulsinay Altayeva, Moldir Talpakova*
16:45-17:00	**O-P-12** On matrixes of coefficients of thermoelastic and electromagnetic waves propagating in anisotropic media *Nurlybek Ispulov, Almar Zhumabekov, Kairat Dossumbekov, Anara Bektazinova*

On matrixes of coefficients of thermoelastic and electromagnetic waves propagating in anisotropic media

Nurlybek A. Ispulov, Almar Zh. Zhumabekov, Kairat R. Dossumbekov, Anara K. Bektazinova

Toraighyrov University, Pavlodar 140008, Kazakhstan

nurlybek_79@mail.ru

Abstract: Thermoelasticity describes a wide range of phenomena and generalizes the classical theory of elasticity and the theory of heat conductivity. Thermoelastic and electromagnetic waves propagation in anisotropic media is of the most interest, at present. Within the bounds of this area, based on use of physical-mechanical properties of anisotropic mediums, bound heat and mechanical fields are being studied.

The article is devoted to study of thermoelastic wave propagation in anisotropic mediums of hexagonal system in the case of the second order axis symmetry and heterogeneity along X - axis. In the article, by means of analytical matricant method, set of motion equations of thermoelastic medium are reduced to equivalent set of the first order differential equations.

The structures of the matrixes of the coefficients of the constitutive equations and the structure of the matrix for waves of an acoustic and electromagnetic coupled field in thermoelastic, piezoelectric, piezomagnetic and magnetoelectric anisotropic media are presented.

Keywords: Anisotropic medium, thermoelastic and electromagnetic waves, matricant.