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BOOK OF ABSTRACT PROCEEDING

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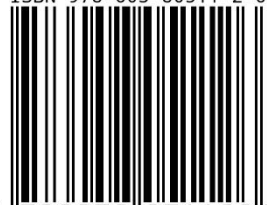
EDITORS

Mohammed Al-Hashimi, Ph.D. FRSC

Nadia Nebbache, Ph.D.

Niyazi Bulut, Ph.D.

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**Book of Abstracts of the International Conference
on New Trends in Science and Applications
(NTSA)**

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(ORAL)**

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Mohammed Al-Hashimi, Ph.D. FRSC

Nadia Nebbache, Ph.D.

Niyazi Bulut, Ph.D.

Published, October 2021

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Welcome to NTSA 2021

Dear Colleagues,

The NTSA is an international conference for sharing knowledge and results in theory, methodology, experimental, and new trends and research results in any fields of Science and Technologies. The conference will bring together researchers and practitioners from both academia as well as industry to meet and share cutting-edge development in the field. The Conference welcomes significant contributions in all areas of Science and Technology in theoretical and practical aspects.

Authors are encouraged to participate in the conference by submitting abstracts/articles illustrating research results, projects, surveying works, and industrial experiences that explain important achievements in the related areas.

Yours sincerely,

Mohammed Al-Hashimi, Ph.D. FRSC

Nadia Nebbache, Ph.D.

Niyazi Bulut, Ph.D.

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KS: Keynote Speakers, **IS:** Invited Speakers, **OP:** Oral Presentation

SCIENTIFIC PROGRAM

(A Virtual conference: 01.45 pm-6.00 pm GMT+00.00 times)

KS: Keynote Speaker, IL: Invited Lecture, OP: Oral Presentation)

Opening Remarks 1.50 PM -2.0 PM (GMT+00.00 time) <i>N. Bulut & M. Al-Hashimi</i>			
<p>Day-1 Time: Oct 12, 2021 01:45 PM Zoom link: https://zoom.us/j/93477003345?pwd=aUdvQXI1ZnVqcTZiSXFmeU9sbEdOZz09 Meeting ID: 934 7700 3345 Passcode: ntsa2021</p>		<p>Day-2 Time: Oct 13, 2021 01:00 PM Zoom link: https://zoom.us/j/95674124561?pwd=cDFSMUQrYVEzdEQ1RnVjYkNlMTJwQT09 Meeting ID: 956 7412 4561 Passcode: ntsa2021</p>	
<p>Chair <i>Prof. Mohammed Al-Hashimi</i></p>		<p>Chair <i>Prof. Sultan Erkan</i></p>	
2.00 PM-2.35 PM	<p>KS-1 Prof. Bob C. Schroeder Title: How to Develop Air-Stable N-Type Organic Conductors</p>	1.00 PM-1.45 PM	<p>Poster Presentations (2 minutes for each)PP16-PP45</p>
2.35 PM-3.00 PM	<p>IL-1 Prof. Tayebbeh Ameri Title: Printed Photovoltaics Towards the Ultimate Goal of Commercialization</p>		

3.00 PM-3.35 PM	KS-2 Prof. Ioannis G. Economou Title: Prediction of Physical Properties of Complex Chemical Systems Using Multiscale Simulation Methods	Chair Prof. Mohammed Al-Hashimi	
		2.00 PM-2.35 PM	KS-3 Prof. Sarbajit Banerjee Title: Designing Electrode Architectures across Length Scales: Some Lessons Learned from Li-ion and "Beyond Li" Chemistries
6.05 PM		2.35 PM-3.00 PM	IL-5 Prof. Ferdi Karadaş Title: Water Oxidation with Prussian Blue Analogues
		3.00 PM-3.35 PM	KS-4 Prof. Rocio Ponce Ortiz Title: Analyzing Charge Transport Processes in Organic Field Effect Transistors
Break (3.35 PM to 3.45 PM)			
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4.10 PM-4.35 PM	IL-3 Prof. Panče Naumov Title: Smart Organic Crystalline Materials	4.10 PM-4.35 PM	IL-7 Prof. Savaş Kaya Title: Maximum Composite Hardness Rule
4.35 PM-5.00 PM	IL-4 Prof. Murat Ateş Title: Electroactive Materials for Supercapacitor Applications	4.35 PM-5.00 PM	IL-8 Prof. Renjith Thomas Title: Implicit and Explicit Solvation Models in Quantum Mechanical Calculations
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5.15 PM-5.20 PM	OP-2: Amin Naifar Title: Computational Study of Core/Shell QDs Coated with Various Dielectric Environments (E.M.A. and Compact-Density-Matrix modeling)	5.15 PM-5.20 PM	OP-13: Melek Gökbülüt Title: Analytical Solutions of γ-Unstable Structure with Yukawa Potential
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		6.10 PM-6.15 PM	OP-33: Serhat Keser Title: Antioxidant, Antimicrobial Activities and Bioactive Compounds of <i>Celtis tournefortii</i> Lam
	Chair Prof. Sultan Erkan	6.10 PM-6.15 PM	OP-34: Mehmet Yaşar Title: The Variation of the Total Collision Numbers of the 'O+ + O₂ → O₂+ + O' Reaction during the Solar Eclipse
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PP-2	Anticancer Properties of <i>Centaurea kurdica</i> Reichardt	Serhat Keser
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PP-5	Study of a Material Based on Synthetic Polymer, Biopolymer, Organophilic Clay and Compatibilizing Agent	Dalila Smail
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PP-19	Study of the Vibratory Behavior of FGM Beams Resting on Variable Foundations	Bennai Riadh
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PP-21	Inventory of the Reasons for Seizure of The Liver in Cattle at the Boufarik Slaughterhouse (Blida)	Amina Saidi
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PP-23	DFT/TDDFT Investigation on Cationic IR (III) and RH (III) Complexes with Cyclometalated Ligands	Imane Seghir
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PP-27	First Principle Study Of Structural, Electronic And Magnetic Properties Of Half Heusler Antiferromagnetic Materials ZrCoSb	Mohammed Alaa Bousahla
PP-28	Mechanical Behavior of Three High Entropy Alloys (HEA) for Possible Use as Biomaterials	Santiago José Brito García
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OP-13**Microhardness and Flexural Strength Behavior of TiMoZrxSi Biomaterial Focused on HIP Prosthesis**

C. Jiménez-Marcos, A.D. Rico-Cano, N.R. Florido-Suárez,  J.C. Mirza-Rosca, P. Vizureanu*

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Introduction: Nowadays, due to the great weight borne by the hip and the problems caused by the current biomaterials used, new alloys with a low modulus of elasticity and low cytotoxicity are being researched and developed. It has therefore been decided to further investigate the possible biomedical applications of T1 (73% Ti, 20% Mo, 7% Zr, 0% Si) and T2 (72% Ti, 20% Mo, 7% Zr, 1% Si) samples.

Experimental: To perform the three-point bending and microhardness tests, the specimens are embedded in an epoxy resin cylinder, then cut into sheets for re-embedding and polished with silicon carbide emery papers and 0.1 micrometer of alumina suspension [1]. Three-point bending test to find the value of the modulus of elasticity of each specimen and the microhardness test with at least 5 indentations to calculate and express as Vickers hardness (HV) were performed [2].

Results: Once the techniques have been applied, it can be observed in the three-point bending test that the value obtained for the modulus of elasticity of one of the three specimens tested in sample T1 is much higher than that of the others, and the same occurs in sample T2, where the values of the two specimens tested are very different from each other. Furthermore, the graphs of Vickers hardness versus scan length for both samples show widely dispersed maxima and minima, as the surfaces of the samples show soft and hard areas and it is confirmed that the hardness increases the higher the applied load and the higher the percentage of silicon.

Conclusions: Therefore, the values of the modulus of elasticity found for each sample are very different from each other, making the results inconclusive. However, in the case of microhardness, both samples perform well under the different loads applied, although sample T2 has a higher resistance to deformation.

References

- [1] Jiménez Marcos, C., Rico Cano, A. D., Florido Suárez, N. R., Mirza Rosca, J. C. & Vizureanu, P. Microstructure and Corrosion Behavior of TiMoZrXS_i Biomaterial Focused on Hip Prosthesis. *IGSCONG'21. PROCEEDINGS BOOK*, 599-600 (2021). ISBN:978-605-68187-0-7
- [2] López Ríos, M., Socorro Perdomo, P. P., Voiculescu, I., Geanta, V., Crăciun, V., Boerasu, I. & Mirza Rosca, J.C. Effects of nickel content on the microstructure, microhardness and corrosion behavior of high-entropy AlCoCrFeNi_x alloys. *Sci Rep* **10**, 21119 (2020).