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BILINGUAL REPORT - DVOJEZIČNI IZVJEŠTAJ

**COMMITTEE FOR PREPARATION OF PROPOSALS FOR APPOINTMENT  
INTO ACADEMIC TITLE FOR SCIENTIFIC FIELD OF "MECHANICAL ENGINEERING"**

**INTERNATIONAL UNIVERSITY OF SARAJEVO  
Faculty of Engineering and Natural Sciences**

Pursuant to Article 107, paragraph (3) of the Law on Higher Education ("Official Gazette of Sarajevo Canton" 33/2017) and based on the Decision of the Council of the Faculty of Engineering and Natural Sciences, number: IUS-FENS 06-2061/2018 dated August 24, 2018, acting in accordance with the submitted Confirmation Certificate by Administrative Service No. IUS-FENS 06-2020/2018 (attached to this Report), the Committee for preparation of proposals for the appointment to academic titles composed of:

1. **Prof. Dr. Hazim Basic**, full professor at Faculty of Mechanical Engineering of the University of Sarajevo, appointed for scientific field of Processing by plastic deformation and for the course Basics of measurement and processing of data (chairman),
2. **Prof. Dr. Sencer Yeralan**, full professor at the Faculty of Engineering and Natural Sciences – field: Industrial Engineering (member)
3. **Assoc. Prof. Dr. Muhamed Hadziabdic**, associate professor at the Faculty of Engineering and Natural Sciences – field: Mechanical Engineering (member).

Evaluated application of Dr. Mustafa Erkovan for the appointment into position of Associate Professor in the field of Mechanical Engineering upon public vacancy announcement published in newspaper "Nezavisne novine" and web page on August 8, 2018, and submits the following

**REPORT  
(detailed)**

**Applicant's name: MUSTAFA ERKOVAN per his application for appointment into academic title of Associate Professor**

Dr. Mustafa Erkovan was born in Uskudar, Turkey in 1976. Dr. Erkovan graduated from Kocaeli University – Department of Physics in 2000. He continued education at postgraduate program in Physics at Yildiz Technical University, which he successfully completed in 2004. Dr. Erkovan received a PhD degree in Physics at Gebze Technical University in 2010.

Dr. Erkovan has been working as Assistant Professor from September 2013 until March 2016 at Sakarya University. Currently, he holds position of Associate Professor at the same university since March 2016.

**KOMISIJA ZA PRIPREMANJE PRIJEDLOGA ZA IZBOR U AKADEMSKO NASTAVNO ZVANJE ZA  
NAUČNU OBLAST „MAŠINSTVO“**

**VIJEĆU FAKULTETA PRIRODNIH I TEHNIČKIH NAUKA**

Na osnovu člana 107., stav (3) Zakona o visokom obrazovanju („Službene novine Kantona Sarajevo“ 33/17), postupajući na osnovu Odluke Vijeća Fakulteta prirodnih i tehničkih nauka, broj: IUS-FENS 06-2061/2018 od 24.08.2018. godine i Potvrde Stručne službe broj IUS-FENS 06-2020/2018, Komisija za pripremanje prijedloga za izbor u akademska zvanja za naučnu oblast „Mašinstvo“, u sastavu:

1. **Red. Prof. Dr. Hazim Bašić**, izabran na naučnoj oblasti: Obrada plastičnom deformacijom i predmet Osnovi mjerenja i obrade podataka na Mašinskom fakultetu Univerziteta u Sarajevu (predsjednik);
2. **Red. Prof. Dr. Sencer Yeralan**, izabran na naučnoj oblasti: Industrijski inženjering na Fakultetu prirodnih i tehničkih nauka Internacionalnog univerziteta u Sarajevu (član), i
3. **Van. Prof. Dr. Muhamed Hadžiabdić**, izabran na naučnoj oblasti: Mašinstvo na Fakultetu prirodnih i tehničkih nauka Internacionalnog univerziteta u Sarajevu (član).

Nakon izvršene analize prijave za zvanje vanredni profesor, podnesene po javnom konkursu od 08.08.2018. godine u dnevnim novinama „Nezavisne novine“ i internet stranici Internacionalnog univerziteta u Sarajevu, od strane aplikanta Dr. Mustafa Erkovana, Komisija podnosi sljedeći:

**IZVJEŠTAJ**  
(s detaljima)

**Kandidat: DR. MUSTAFA ERKOVAN, postupajući po prijavi za zvanje VANREDNOG PROFESORA**

Dr. Mustafa Erkovan rođen je 1976. godine u Uskudaru u Turskoj. Dr. Erkovan je 2000. godine diplomirao na Odsjeku za fiziku Univerziteta Kocaeli u Turskoj. Obrazovanje je nastavio na postdiplomskom studiju iz fizike na Tehničkom univerzitetu Yildiz u Turskoj, koji je uspješno okončao 2004. godine. Dr. Erkovan stekao je doktorat iz fizike 2010. godine na Tehničkom univerzitetu Gebze u Turskoj 2010. godine.

Dr. Erkovan je radio u zvanju docenta na Univerzitetu Sakarya u Turskoj od septembra 2013. godine do marta 2016. godine. Trenutno je u zvanju vanrednog profesora na istom univerzitetu od marta 2016. godine.

A. EDUCATION/OBRAZOVANJE

PhD	PhD studies in Physics Gebze Technical University, Turkey	2010
Master of Science	Master studies in Physics Yildiz Technical University, Turkey	2004
Bachelor of Science	Bachelor studies in Physics Kocaeli University, Turkey	2000

B. ACADEMIC APPOINTMENT RECORDS / IZBORI U ZVANJA

March 2016 -	Associate Professor at Sakarya University in Turkey/ Vanredni profesor na Univerzitetu Sakarya u Turskoj
Sept. 2013 – March 2016	Assistant Professor at Sakarya University in Turkey/ Docent na Univerzitetu Sakarya u Turskoj
Sept. 2016 – June 2011	Research Assistant at Gebze Technical University in Turkey/ Asitent istraživač na Tehničkom univerzitetu Gebze u Turskoj

C. LIST OF SCIENTIFIC AND OTHIS PUBLICATIONS PUBLISHED AFTER THE APPOINTMENT TO ACADEMIC TITLE OF ASSISTANT PROFESSOR / PREGLED NAUČNIH I DRUGIH RADOVA OBJAVLJENIH NAKON IZBORA U ZVANJE DOCENTA

C. 1. JOURNAL PUBLICATIONS SUBMITTED WITH APPLICATION TO VACANCY / NAUČNI RADOVI OBJAVLJENI U NAUČNIM ČASOPISIMA DOSTAVLJENI UZ PRIJAVU NA KONKURS

1. N Aslan, M M Koç, A Dere, B Arif, M Erkovan, AG Al-Sehemi, A A Al-Ghamdi, F Yakuphanoglu, Ti doped amorphous carbon (Al/Ti-a: C/p-Si/Al) photodiodes for optoelectronic applications, Journal of Molecular Structure, 1155, 813-818, 2018.
2. U. Parlak, M. E.Aköz, S. Tokdemir Öztürk, M. Erkovan Thickness Dependent magnetic Properties of Polycrystalline Nickel Thin Films Acta Physica Polonica A, 127,4, (2015).
3. M.Erkovan, M. E. Aköz, U. Parlak, O. Öztürk The Study of Exchange Bias of PtxCo1-x/CoO Bilayers, Journal of Superconductivity and Novel Magnetism, 30,10, 2909-2913, 2017.
4. Y. A. Shokr, M. Erkovan, C. Bin Wu, B. Zhang O. Sanding, W. Kuch Temperature-Induced Sign Change of the Magnetic Interlayer Coupling in Ni/Ni25Mn75/Ni Trilayers on Cu3Au(001) Journal of Applied Physics,117, 175302, (2015).
5. E. Demirci, M. Öztürk, U. Ulucan, N. Akdoğan, E. Sınır, O. Öztürk, M. Erkovan Temperature – Dependent Exchange Bias Properties of PtxCo1-x/CoO Bilayers Thin Solid Films, 550, 595-601 (2014).

6. Ö. Tamer, Y. Atalay, D. Avcı, Y. Zorlu, B. Çoşut, Y. Yerli, M. Erkovan Synthesis, Crystal Structure, Spectroscopic Characterization and Nonlinear Optical Properties of Manganese (II) Complex of Picolinate: A Combined Experimental and Computational Study, *Journal of Molecular Structure*, 1106, 2016.
7. A Djabri, M Mahdi, R Boukhalifa, M Erkovan Structural, Magnetic, and Magneto-Optical Properties of Fe/Cu Superlattices *Journal of Superconductivity and Novel Magnetism*, , 30, 11, 3207-3214, 2017.
8. E. Sennik, S. Urdem, M. Erkovan, N. Kılınċ Sputtered Platinum Thin Films for Resistive Hydrogen Sensor Application *Materials Letters*, 177, 104-107, 2016.
9. Örnek, ZA Kösemen, S Öztürk, B Canıṁkubey, Ş Fındık, M. Erkovan Performance enhancement of inverted type organic solar cells by using Eu doped TiO<sub>2</sub> thin films, *Surfaces and Interfaces*, 9, 64-69, 2017.
10. M. E. Aköz, U. Parlak, Y. Şahin, D. Tavşan, O. Öztürk, M. Erkovan Manipulation of Exchange Coupling in Py/Co/Cr Multilayer Thin Films *Acta Physica Polonica A*, 127, 4, (2015).
11. C. Deđer, M. E. Aköz, M. Erkovan, F. Yıldız Investigation on Magnetic Properties of Soft/Hard Magnetic Bilayers at Different Temperatures: A Monte-Carlo Study *Acta Physica Polonica A*, 129, 4, 869-871, 2016.
12. A Djabri, M Mahdi, R Boukhalifa, M Erkovan, F Chemam Investigation of the electronic and magnetic properties of Mn doped ZnO using the FP-LAPW method, *Chinese Journal Of Physics*, 55, 1432-1440, 2017.
13. N. Akdoğ̇an, A. Yağmur, M. Öztürk, E. Demirci, O. Öztürk, M. Erkovan Interface Induced Manipulation of Perpendicular Exchange Bias in Pt/Co/(Pt, Cr)/CoO Thin Films *Journal of Magnetism and Magnetic Materials*, 373, 120-123 (2015).
14. M. Erkovan, Y. A. Shokr, D. Schiestl, C. Bin Wu, W Kuch Influence of NixMn1-x thickness and composition on the Curie temperature of Ni in NixMn1-x/Ni bilayers on Cu<sub>3</sub>Au(001) *Journal of Magnetism and Magnetic Materials*, 373, 151-154 (2015).
15. A Kösemen, ZA Kösemen, B Can\_ṁkubey, M Erkovan, F Başar\_r, SE San, ... Fe doped TiO<sub>2</sub> thin film as electron selective layer for inverted solar cells *Solar Energy* 132, 511-517
16. Y. Şahin, S. Öztürk, A. Kösemen, N. Kılınċ, M. Erkovan, Z. Z. Öztürk Electrical Conduction and NO<sub>2</sub> Gas Sensing Properties of ZnO Nanorods *Applied Surface Science*, 330, 90-96 (2014).
17. U. Parlak, M. E. Aköz, M Erkovan Coexistence of Perpendicular and Parallel Exchange Bias Effects on Ni/CoO Bilayer *Journal of Superconductivity and Novel Magnetism*, 29, 7, 1851-1854, 2016.
18. M. Öztürk, E. Demirci, M. Erkovan, O. Öztürk, N. Akdoğ̇an Coexistence of Perpendicular and

In-plane Exchange Bias Using a Single Ferromagnetic Layer in Pt/Co/Cr/CoO Thin Film  
European Physics Letter, 114,1, 2016.

19. E. Şentürk, M. Erkovan, M. Okutan, A. Kosmen, S. Öztürk Y. Şahin, S. Öztürk, Cobalt-titanium multilayer thin films: Effect of thickness of titanium spacer layer on impedance properties Materials Science in Semiconductor Processing, 30, (2015).
20. M. Erkovan, M. E. Aköz, M. Öztürk, E. Demirci, U. Parlak, N. Akdoğan, O. Öztürk Probing Exchange Bias Properties of Pt<sub>x</sub>Co<sub>1-x</sub>/CoO Bilayers Journal of Superconductivity and Novel Magnetism, vol 29, 2016.

#### C. 4. BOOKS / KNJIGE

The candidate for appointment to academic title of associate professor does not have published book. Yet, he has published numerous scientific articles therefore a requirement of published book for position of associate professor may be replaced with three additional scientific papers, over the legal requirement and in accordance with the Law and Statute. / Kandidat za izbor u zvanje vanrednog profesora nema objavljenu knjigu. Ipak, objavio je veći broj naučnih radova te se stoga uslov objavljene knjige za zvanje vanrednog profesora može zamijeniti sa tri dodatna načna rada koja su objavljena preko zakonskom minimuma za izbor u zvanje vanrednog profesora, te u skladu sa Zakonom i Statutom.

#### D. PROJECTS / PROJEKTI

Grant: The Scientific and Technological Research Council of Turkey. March 2016- March 2017, Title: Exchange bias effect on FePt/Pt/CoO/Pt multilayer films, Contribution: As a project coordinator. Preparation of ultra thin FePt/Pt/CoO/Pt films by magnetron sputtering. Magnetic characterization of the films with VSM and MOKE.

Grant: Helmholtz Centrum BESSY, Berlin Cyclotron Beam Time, 10 Jan 2016- 17 Jan 2016, Title: Investigation of Magnetic Properties and Exchange Coupling Properties of FeRh/Co Bilayer films, Contribution: As a project researcher Preparation of ultrathin films FeRh/Co films by magnetron sputtering and X- PEEM and XMCD experiment in BESSY.

Grant: COST, December 2014- December 2016 Title: Fabrication and characterization of nanostructured Pt and Pt alloys, and investigation of their hydrogen gas sensing properties, Contribution: As a researcher, Pt and Pt alloys preparation in magnetron sputtering deposition technique and chemical characterization.

Grant: Helmholtz Centrum BESSY, Berlin Cyclotron Beam Time, 14 July - 21 July 2014 Title: Revealing the difference of single- and polycrystalline Fe<sub>x</sub>Gd<sub>1-x</sub>, Contribution: As project proposed with AG Kuch group and, preparation of ultrathin films Fe<sub>x</sub>Gd<sub>1-x</sub> films by magnetron sputtering and X- PEEM and XMCD experiments

Grant: The Scientific and Technological Research Council of Turkey. April 2014-March 2015, Title: Observation of Perpendicular magnetization and exchange bias effect Ni/CoO films Contribution: As a project coordinator, Preparation of ultra thin Ni/CoO films by magnetron sputtering. Magnetic characterization of the films with VSM and MOKE.

Grant: Sakarya University Scientific Research Project (April 2014- April 2015.) Title: Magnetic properties of polycrystalline  $\text{Fe}_x\text{Gd}_{1-x}$  films Contribution: As a project coordinator, Preparation of ultrathin films  $\text{Fe}_x\text{Gd}_{1-x}$  films by magnetron sputtering technique and magnetic characterization of the films with MOKE and VSM.

Grant: The Scientific and Technological Research Council of Turkey. March 2013- February 2014, Title: Investigation of exchange bias effect on  $\text{Pt}_x\text{Co}_{1-x}/\text{CoO}$  ultrathin films Contribution: As a project coordinator, Preparation of ultra thin  $\text{Pt}_x\text{Co}_{1-x}/\text{CoO}$  films by magnetron sputtering Magnetic characterization of the films with MOKE and VSM.

#### **E. MENTORSHIPS / MENTORSTVA**

##### **SUCCESSFUL MENTORSHIP OF MASTER CANDIDATES / USPJEŠNA MENTORSTVA KANDIDATA DRUGOG CIKLUSA STUDIJA (MASTER)**

1. Observation of exchange bias effect on Ni/CoO thin films, Umut Parlak, Gebze Technical University, 2014.
2. Exchange bias investigation of  $\text{Pt}_x\text{Co}_{1-x}/\text{CoO}$  ultra thin films, M Emre Aköz, Gebze Technical University, 2015.
3. Fabrication and characterization of nanostructured Pt and Pt-Ag alloys, and investigation of their hydrogen gas sensing properties, Şeyma Ürdem, Sakarya University, 2016.
4. Application of photoemission spectroscopy in surface characterization of chromium oxide to define oxide phases growing by reactive magnetron sputtering deposition, Ismet Gelen, Gebze Technical University, 2016.

#### **F. INTRODUCTORY LECTURE**

Dr. Mustafa Erkovan does not need to deliver introductory lecture since he actively participated in the realization of the lecturing process at higher education institutions

Dr. Mustafa Erkovan ne treba održati pristupno predavanje jer već posjeduje iskustvo predavača na visokoškolskim ustanovama.

#### **G - PROPOSAL AND RATIONALE**

Based on the scientific work, in accordance with the Law on Higher Education of Sarajevo Canton ("Official Gazette of Sarajevo Canton" No: 33/17), we are pleased to propose to the Council of the Faculty of Engineering and Natural Sciences to appoint Dr. Mustafa Erkovan to the academic title of ASSOCIATE PROFESSOR in the scientific field of "Mechanical Engineering", at the Faculty of Engineering and Natural Sciences of the International University of Sarajevo.

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Na osnovu naučnog rada, u skladu sa odredbama Zakona o visokom obrazovanju Kantona Sarajevo ("Službene novine Kantona Sarajevo" br: 33/17), sa zadovoljstvom predlažemo Vijeću Fakulteta prirodnih i tehničkih nauka Internacionalnog univerziteta u Sarajevu da se dr. Mustafa Erkovan izabere za nastavnika u naučno-nastavnom zvanju VANREDNOG PROFESORA na naučnoj oblasti "Mašinstvo", na Fakultetu prirodnih i tehničkih nauka Internacionalnog univerziteta u Sarajevu.

COMMITTEE / KOMISIJA

1. Prof. Dr. Hazim Bašić (chairman/predsjednik)



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2. Prof. Dr. Sencer Yeralan (member/član)



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3. Vanr. Prof. Dr. Muhamed Hadžiabdić (member/član)



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