

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

Date: 01.11.2017.

Number: IUS-FENS-06-3022/2017

**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 06-2836/17 dated October 5, 2017, acting in accordance with the submitted Confirmation Certificate by Administrative Service No. IUS-FENS 06-2781-1/17 (attached to this Report), the Committee for preparation of proposals for the appointment to academic titles composed of:

1. Prof. Dr. Asif Šabanović, professor emeritus at the Faculty of Engineering and Natural Sciences of the International University of Sarajevo – appointed at Department of Automation and Electronics at Faculty of Electrical Engineering of the University of Sarajevo (chairman),
2. Prof. Dr. Mirza Kušljagić, professor at the Faculty of Electrical Engineering of the University of Tuzla - appointed for the scientific field of Power Grids and Systems (member)
3. Prof. Dr. Hamid Zildžo, professor at the Faculty of Electrical Engineering of the University of Sarajevo - appointed for the scientific field of Power Systems (member).

Evaluated application of Dr. Izudin Džafić for the appointment into position of Full Professor in the field of Electrical Engineering as the only application received to the public vacancy announcement published in newspaper Nezavisne novine on September 21, 2017, and submits the following

**REPORT
(detailed)**

Applicant's name: IZUDIN DŽAFIĆ per his application for appointment into academic title of Full Professor

Dr. Izudin Džafić was born in Rinci Donji, Kalesija in 1971. Dr. Džafić graduated from Faculty of Electrical and Mechanical Engineering of the University of Tuzla in 1996, where he also obtained a degree of Master of Science in 1999. He received his PhD degree at the Faculty of Electrical Engineering and Computing, the University of Zagreb in Croatia in 2002. Dr. Izudin Džafić's first academic appointment was in 1996 to the rank of Teaching Assistant at Faculty of Electrical and Mechanical Engineering of the University of Tuzla and from 1999 until 2003

as Senior Teaching Assistant at the same institution. Dr. Džafić continued his academic career in Bosnia as Assistant Professor at Sarajevo School of Science and Technology in 2009, parallel with his work in the industry (Siemens AG, Germany).

Dr. Izudin Džafić was appointed to the rank of Associate Professor for the scientific field of Electrical Engineering at the Faculty of Engineering and Natural Sciences of the International University of Sarajevo in 2013.

Dr. Džafić has published over 70 scientific publications in prestigious journals and conference proceedings and 4 books. He is an owner of 8 internationally recognized patents in the area of power engineering. He has successfully mentored PhD and MA students and he was involved in work of a number of projects either as project leader or as project participant, as stated in this report. He is member of various professional and scientific panels and committees and he speaks and writes in English and German fluently.

A. EDUCATION

PhD	University Zagreb Faculty of Electrical Engineering and Computing	2002
Master of Science	University of Tuzla Faculty of Electrical and Mechanical Engineering, Department of Technical Informatics	1999
Bachelor of Science	University of Tuzla Faculty of Electrical and Mechanical Engineering, Department of Power Engineering	1996

B. ACADEMIC APPOINTMENT RECORDS

February 2013 – present	Associate Professor at Electrical and Electronics Engineering Program International University of Sarajevo, Faculty of Engineering and Natural Sciences, Sarajevo, Bosnia and Herzegovina
2009 – 2013	Assistant Professor of Electrical Engineering Sarajevo School of Science and Technology, Sarajevo, Bosnia and Herzegovina

1999–2003	Senior Teaching Assistant, University of Tuzla, Tuzla, Bosnia and Herzegovina
1996–1999	Teaching Assistant, University of Tuzla, Tuzla, Bosnia and Herzegovina

C. LIST OF SCIENTIFIC AND OTHIS PUBLICATIONS – AFTER APPOINTMENT TO ASSOCIATE PROFESSOR

C. 1. BOOKS

1. Džafić, M. Hodžić, and I. Huseinagić, Distribution System State Estimation with examples in MATLAB, AMPL and C++. International University of Sarajevo, (textbook IUS), 2015. ISBN 978-9958-896-19-4

Reviewers:

Prof. Dr. Asif Sabanovic, Sabanci University, Turkey

Assoc. Prof. Dr. Igor Kuzle, University of Zagreb, Croatia

Asst. Prof. Dr. Smajo Bisanovic, University of Sarajevo, Bosnia and Herzegovina

2. M. Hodžić, I. Džafić, and S. Selman, Introduction to optimization theory with applications in power and control. International University of Sarajevo, (textbook IUS), 2015. ISBN 978-9958-896-18-7

Reviewers:

Prof. Dr. Asif Sabanovic, Sabanci University, Turkey

Prof. Dr. Nijaz Hadzimejlic, University of Sarajevo, Bosnia and Herzegovina

C. 2. JOURNAL PUBLICATIONS

1. Džafić and R. A. Jabr, "Real time multiphase state estimation in weakly meshed distribution networks with distributed generation," IEEE Transactions on Power Systems, vol. PP, no. 99, pp. 1–1, 2017.
2. Džafić, R. A. Jabr, I. Huseinagić, and B. C. Pal, "Multi-phase state estimation featuring industrial-grade distribution network models," IEEE Transactions on Smart Grid, vol. 8, no. 2, pp. 609–618, March 2017.
3. R. A. Jabr, I. Džafić, and I. Huseinagić, "Real time optimal reconfiguration of multiphase active distribution networks," IEEE Transactions on Smart Grid, vol. PP, no. 99, pp. 1–1, 2017.
4. R. A. Jabr and I. Džafić, "Solution of DC railway traction power flow systems including limited network receptivity," IEEE Transactions on Power Systems, vol. PP, no. 99, pp. 1–1, 2017.
5. R. A. Jabr, I. Džafić, and S. Karaki, "Tracking transformer tap position in real-time distribution network power flow applications," IEEE Transactions on Smart Grid, vol. PP, no. 99, pp. 1–9, 2016.
6. Džafić, R. Jabr, S. Henselmeyer, and T. Donlagic, "Fault location in distribution networks through graph marking," IEEE Transactions on Smart Grid, vol. PP, no. 99, pp. 1–10, 2016.
7. R. A. Jabr and I. Džafić, "Sensitivity-based discrete coordinate-descent for Volt/VAr control in distribution networks," IEEE Trans. Power Syst., vol. 31, no. 6, pp. 4670–4678, Nov 2016.
8. R. A. Jabr and I. Džafić, "A compensation-based conic OPF for weakly meshed networks," IEEE Trans. Power Syst., vol. 31, no. 5, pp. 4167–4168, Sept 2016.
9. M. Kantardžić, H. Gavranović, N. Gavranović, I. Džafić, and H. Hanqing, "Improved short term energy load forecasting using Web-based social networks," Social Networking, vol. 4, pp. 119–131, Oct 2015.

10. R. A. Jabr and I. Džafić, "A Fortescue approach for real-time short circuit computation in multiphase distribution networks," *IEEE Trans. Power Syst.*, vol. 30, no. 6, pp. 3276–3285, Nov 2015.
11. Gómez-Expósito, C. Gómez-Quiles, and I. Džafić, "State estimation in two time scales for smart distribution systems," *IEEE Trans. Smart Grid*, vol. 6, no. 1, pp. 421–430, Jan 2015.
12. R. A. Jabr, I. Džafić, and B. C. Pal, "Robust optimization of storage investment on transmission networks," *IEEE Trans. Power Syst.*, vol. 30, no. 1, pp. 531–539, Jan 2015.
13. Džafić, R. A. Jabr, and H. T. Neisius, "Transformer modeling for three-phase distribution network analysis," *IEEE Trans. Power Syst.*, vol. 30, no. 5, pp. 2604–2611, Sept 2015.
14. Gómez-Expósito, C. Gómez-Quiles, and I. Džafić, "Hybrid real–complex current injection– based load flow formulation," *Electric Power Systems Research*, vol. 119, pp. 237–246, Feb 2015.
15. Džafić, I. Huseinagić, and S. Henselmeyer, "Real time distribution system state estimation based on interior point method," *Southeast Europe Journal of Soft Computing*, vol. 3, no. 1, pp. 32–38, Mar. 2014.
16. Džafić, R. A. Jabr, E. Halilović, and B. C. Pal, "A sensitivity approach to model local voltage controllers in distribution networks," *IEEE Trans. Power Syst.*, vol. 29, no. 3, pp. 1419–1428, May 2014.
17. Džafić, B. C. Pal, M. Gilles, and S. Henselmeyer, "Generalized π Fortescue equivalent admittance matrix approach to power flow solution," *IEEE Trans. Power Syst.*, vol. 29, no. 1, pp. 193–202, Jan. 2014.
18. Džafić, M. Gilles, R. A. Jabr, B. C. Pal, and S. Henselmeyer, "Real time estimation of loads in radial and unsymmetrical three-phase distribution networks," *IEEE Trans. Power Syst.*, vol. 28, no. 4, pp. 4839–4848, Nov. 2013.
19. Džafić, H. T. Neisius, M. Gilles, S. Henselmeyer, and V. Landerberger, "Three-phase power flow in distribution networks using Fortescue transformation," *IEEE Trans. Power Syst.*, vol. 28, no. 2, pp. 1027–1034, May 2013.

C. 3. CONFERENCE PAPERS

1. I. Huseinagic, I. Džafić, and R. A. Jabr, "A compensation technique for unsymmetrical three-phase power flow," in *XI International Symposium on Industrial Electronics - INDEL 2016*, Nov 2016, pp. 1–6.
2. A. Gómez-Expósito, C. Gómez-Quiles, and I. Džafić, "State estimation in two time scales for smart distribution systems," in *2015 IEEE Power Energy Society General Meeting*, July 2015, pp. 1–1.
3. D. Ablaković, I. Džafić, R. A. Jabr, and B. C. Pal, "Experience in distribution state estimation preparation and operation in complex radial distribution networks," in *2014 IEEE PES General Meeting*, July 2014, pp. 1–5.
4. Džafić, I., H. E., R. A. Jabr, P. B. C., and D. Ablaković, "Influence of distribution line asymmetry on power flow results," in *2014 IEEE Power Energy Society General Meeting*, July 2014, pp. 1–5.
5. Džafić, B. C. Pal, M. Gilles, and S. Henselmeyer, "Generalized π Fortescue equivalent admittance," in *2014 IEEE Power Energy Society General Meeting*, July 2014, pp. 1–1.

6. Džafić, I. Huseinagić, M. Musić, and E. Halilović, "Software package for power system analysis," in 2014 IEEE International Energy Conference (ENERGYCON), May 2014, pp. 610–615.
7. Džafić, I. Muhić, M. Musić, I. Rustempašić, and N. Leček, "Fault location in distribution network using cumulative approach," in 2013 IEEE EUROCON, Jul. 2013, pp. 1352–1356.
8. N. Leček, I. Džafić, and M. Musić, "Operationally constrained, closed loop voltage VAR control for smart distribution grids," in 2013 IEEE EUROCON, Jul. 2013, pp. 1344–1351.
9. I. Džafić, J. Sofo, E. Halilović, N. Leček, and M. Musić, "Object-oriented database and user interface design," in 2013 IEEE EUROCON, Jul. 2013, pp. 558–563.

D. PROJECTS – AFTER APPOINTMENT TO ASSOCIATE PROFESSOR

- 2017– Fault Location using Transient Data for Distribution Networks - In Preparation, Siemens AG, Germany, 100.000 EUR
- 2016–2017 Fault Location using Transient Data, Siemens AG, Germany, 100.000 EUR
- 2015–2017 Smart Grid Laboratory, Siemens AG, Germany, 150.000 EUR
- 2015–2015 Consulting for Industrial Project - Iberdrola, Siemens AG, Germany, 70 EUR/h
- 2014–2015 Industrial Grade Distribution System State Estimation, Siemens AG, Germany, 50.000 EUR

E. PATENTS – AFTER APPOINTMENT TO ASSOCIATE PROFESSOR

1. I. Džafić, "Method of estimating a system value," Patent WO 2016/050 309 A1, Apr 7, 2016.
2. I. Džafić, "Method and device for producing a state signal," Patent US 9 261 864 B2, Feb 16, 2016.
3. I. Džafić, "Energy distribution system and method for operating same," Patent US 2015/0 380 933 A1, Dec 31, 2015.
4. I. Džafić, "Method and system for calculating fault indicator indicating a fault in a distribution network," Patent WO 2015/124 177 A1, Aug 27, 2015.
5. I. Džafić, "Energy distribution network," Patent US 2014/0 371 930 A1, Dec 18, 2014.
6. I. Džafić, "Method and system for controlling reactive power in an electric distribution network," Patent EP 3 024 105 A1, Nov 11, 2014.

F. MENTORSHIPS – AFTER APPOINTMENT TO ASSOCIATE PROFESSOR

F.1. MENTORSHIP OF DOCTORAL STUDENT

1. Indira Huseinagić, " VVC for Closed Loop Smart Grid Operating Mode", 2016

F.2. MENTORSHIP OF MASTER STUDENTS

1. Naida Fetić, "Power System Fault Detection, Classification and Location ", 2017

2. Šejla Džakmić, "Application of wavelets to the fault classification and location", 2017
3. Tarik Hrnjić, "Real Time State Estimation for Three Phase Unsymmetrical Distribution Networks", 2016
4. Benjamin Šahović, "Real time data acquisition for power system analysis", 2016
5. Azra Mehić, "Multiphase Signal Generator Using Sound Card (for Power Systems LAB)", 2015

G. INTRODUCTORY LECTURE

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

H - PROPOSAL AND RATIONALE

Based on the scientific work (publications, patents, books and projects) and work in advising graduate students, in accordance with the Law on Higher Education of Sarajevo Canton ("Official Gazette of Sarajevo Canton" No: 33/2017), we are pleased to propose to the Council of the Faculty of Engineering and Natural Sciences to appoint Dr. Izudin Džafić to the academic title of FULL PROFESSOR in the scientific field of "Electrical Engineering", at the Faculty of Engineering and Natural Sciences of the International University of Sarajevo.

COMMITTEE

1. Prof. Dr. Asif Šabanovic (chairman)
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2. Prof. Dr. Mirza Kušljugić (member)
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3. Prof. Dr. Hamid Zildžo (member)
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