Curriculum vitae Europass

Personal information

First name(s) / Surname(s) **BECHET PAUL**

Address(es)

Web of Science Research ID

E-mail

Nationality

Date of birth

Gender

Relevant expertise

- Project management skills. Projects topics included: electromagnetic spectrum monitoring; design, implementation and testing of communication systems dedicated to military applications; acquisition and analysis of signals under low signal to noise ratio conditions; implementation of wireless communication solutions based on Cognitive Radio and Software Defined Radio (SDR) technologies; providing electromagnetic compatibility in environments with high user density; providing data transfer rate in wireless communications depending on the characteristics of the transmission channel.
- Design, implementation and testing of sensors based on SDR technology for monitoring the electromagnetic spectrum (sensor capabilities included: real-time acquisition according to the characteristics of the signal of interest, analysis and classification of the acquired signals, implementation of the monitoring system using Commercial Off The Shelf (COTS) components leading to a low cost). Solutions of such sensors have been presented in high impact journals (Web of Science Q1 or Q2).
- Skills in digital signal processing (robustness and accuracy of algorithms in highly disruptive environments; higher order statistical analysis of signal characteristics);
- Modeling, simulation and analysis of the functionality and performance of deployable information communication modules (platforms) in highly disruptive environments;
- To the implementation of interoperability and compatibility requirements specific to systems operating in complex applications in NATO specific integrated communication environments;
- To implement automatic measurement and data processing systems for accurate measurement of the electromagnetic field in accordance with the statistics of the measured signal.

Professional Experience

ROBETECH EMC S.R.L.

Dates 2023-present

Position Coordinator of research projects

Technical University of Cluj-Napoca

Dates 2017-present

Position PhD Supervisor, Electrical Enginnering Doctoral School

“Nicolae Balcescu” Land Forces Academy of Sibiu

Higher education / university

Dates	a. 2015-2024 b. 2007-2015 c. 2003-2007 d. 2001-2003 e. 1995-2001 f. 1989-1995
Position	a. Full professor b. associate professor c. chief of educational department d. lecturer e. assistant professor f. assistant professor
Main activities and responsibilities	Courses & laboratory activities: wireless communications, digital communications, electromagnetic compatibility Research: digital signal processing; electromagnetic compatibility and software defined radio systems
Name and address of employer	a. “Nicolae Balcescu” Land Forces Academy – Sibiu (and „Lucian Blaga” University of Sibiu, Faculty of Engineering) b. “Decebal” Information and Military Communication School - Sibiu c. “Nicolae Balcescu” Land Forces Academy - Sibiu d. “Nicolae Balcescu” Land Forces Academy - Sibiu e. “Decebal” Military Institute for Communications – Sibiu
Type of business or Sector	a. education in military communications & electromagnetic compatibility b. education in spectrum management & electromagnetic compatibility c. education in military communications d. education in military communications e. education in military communications

Education and training

Dates	a. 1996-2001 b. 1984-1989
Title of qualification awarded	a. Ph.D. in Electrical Engineering b. B.Sc. in Communications
Principal subjects/occupational skills covered	a. competencies in frequency stability & frequency synthesizers & electromagnetic compatibility b. competencies in military communications
Name and type of organisation providing education and training	a. Technical University of Cluj Napoca, Romania - Faculty of Electrical Engineering b. Military Technical Academy, Bucharest Romania - Faculty of Electrical and Communications Engineering
Level in national or international classification	a. level code 6 b. level code 5

Personal skills and competences

Mother tongue(s)	**Romanian**									
Other language(s)										
Self-assessment	**Understanding**				**Speaking**				**Writing**	
European level (*)	Listening		Reading		Spoken interaction		Spoken production			
English	C1	independent	C1	independent	B2	independent	B2	independent	B2	independent
French	A2	elementary	A2	elementary	A1	elementary	A1	elementary	A2	elementary

Social skills and competences	– Team spirit; – Capacity to adapt to multicultural environments, gained through experience of collaboration including abroad; – Good communication skills gained through teaching experience.
Organisational skills and competences	– Leadership / leader – chief of educational department and project director/responsible in research projects; – Sense of organization - experience in organizing scientific meetings; – Good experience of project management and team coordination.
Technical skills and competences	– Knowledge of procedures for measuring high frequency electromagnetic field; – Knowledge of phenomena and processes in the electromagnetic compatibility, spectrum management and software defined radio systems; – Good knowledge of processes and phenomena of digital processing in radio communications networks.
Computer skills and competences	– experienced user of MatLaB, Python, GnuRadio

Additional information

MEMBERSHIPS AND REPRESENTATIVITY:

– IEEE member, EMC Society;
– member of Romanian Association of Electromagnetic Compatibility (ACERO), since 2005;
– principal organizer or organizer of more than 20 workshops and conferences.

DISTINCTIONS AND AWARDS:

- "Gheorghe Cartianu" Romanian Academy Prize, 2010 year, for the Book "Electromagnetic Compatibility in wireless communications environments"
- 2nd Prize for Scientific Research awarded by the National Research Agency of Romania for the Year 2007, at Section "Research Projects in Partnership", for Project "Interaction of Microwaves with Molecular and Biomolecular Systems" - Coordinated by National Institute For Research & Development for Isotopic And Molecular Technologies, Cluj Napoca, Romania – I was coordinator at one of the institutional partners.

Representative contributions

PUBLICATIONS:

1. P. Bechet, S. Miclaus, A.C. Bechet, Improving the Accuracy of Exposure Assessment to Stochastic-like Radiofrequency Signals, IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY Volume: 54 Issue: 5 Pages: 1169-1177 DOI: 10.1109/TEMC.2012.2191290 Published: OCT 2012.
2. P. Bechet, R. Mitran, M. Munteanu, A non-contact method based on multiple signal classification algorithm to reduce the measurement time for accurately heart rate detection, Review of Scientific Instruments 84, 084707 (2013).
3. P. Bechet, S. Miclaus, An improved procedure to accurately assess the variability of exposure to electromagnetic radiation emitted by GSM base station antennas, MEASUREMENT SCIENCE & TECHNOLOGY Volume: 24 Issue: 1 Article Number: 015003 DOI: 10.1088/0957-0233/24/1/015003 Published: JAN 2013.
4. Şorecău, Mirela, Emil Șorecău, Annamaria Sârbu, and Paul Bechet, Real-Time Statistical Measurement of Wideband Signals Based on Software Defined Radio Technology, 2023, Electronics 12, no. 13: 2920, https://doi.org/10.3390/electronics12132920.
5. Sârbu, A.; Migliore, M.D.; Șorecău, E.; Șorecău, M.; Miclăuș, S.; Bechet, P., SDR-Enabled Multichannel Real-Time Measurement System for In Situ EMF Exposure Evaluation, Electronics 2022, 11, 2670, https://doi.org/10.3390/electronics11172670.
6. P. Bechet, S. Miclaus, A.C. Bechet, An analysis of the dependence of the electromagnetic exposure level in indoor environment on traffic direction, instantaneous data rate and position of the devices in a WLAN network. Measurement, 67, 34-41.
7. Şorecău, Mirela, Emil Şorecău, Annamaria Sârbu, and Paul Bechet, Spectral analysis and digital signal processing in engineering using software defined radios and gnu radio software, In International Conference on Remote Engineering and Virtual Instrumentation, pp. 1005-1017. Cham: Springer Nature Switzerland, 2023.
8. R. Mitran, P. Bechet, HF radio channels evaluation using passive sounding in the Black Sea area, Journal Of Electromagnetic Waves And Applications, doi: 10.1080/09205071.2017.1297256, Volume 31, Issue 5, 2017.
9. R. Helbet, P. Bechet, V. Monda, S. Miclaus, I Bouleanu, Low-Cost Sensor Based on SDR Platforms for TETRA Signals Monitoring. Sensors, 21(9), 3160.
10. Şorecău, M., E. Şorecău, Annamaria Sârbu, and P. Bechet, Remote Spectrum Monitoring Based on SDR-GNU Radio Sensors: IQ Streaming and FFT Streaming, In 2023 6th Experiment@ International Conference (exp. at'23), pp. 116-121. IEEE, 2023.
11. S. Miclaus, P. Bechet, M. Gheorghevici, Long-term exposure to mobile communication radiation: an analysis of time-variability of electric field level in GSM900 Downlink channels, RADIATION PROTECTION DOSIMETRY Vol: 154 Issue: 2 Pages: 164-173, DOI:10.1093/rpd/ncs169 Published: APR 2013.
12. S. Miclaus, P. Bechet, C. Iftode, The application of a channel-individualized method for assessing long-term, realistic exposure to radiofrequency radiation emitted by mobile communication base station antennas, MEASUREMENT Volume: 46 Issue: 3 Pages: 1355-1362 DOI: 10.1016/j.measurement.2012.11.040 Published: APR 2013.
13. R. Mitran, P. Bechet, Measurement settings influence upon energy detection of TETRA signals, ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING Volume: 10 Issue: 3 Pages: 92-95 DOI: 10.4316/AECE.2010.03015 Published: 2010.
14. Sârbu, A., Bechet, A., Bălan, T., Robu, D., Bechet, P., Miclăuș, S., Using CCDF statistics for characterizing the radiated power dynamics in the near field of a mobile phone operating in 3G+ and 4G+ communication standards, In Measurement 2019, Vol. 134, pp. 874–887), https://doi.org/10.1016/j.measurement.2018.12.018.
15. S. Miclaus, P. Bechet, I. Bouleanu, R. Helbet R., Radiofrequency field distribution assessment in indoor areas covered by Wireless Local Area Networks, ADVANCES IN ELECTRICAL AND COMPUTER ENGINEERING Volume: 9 Issue: 1 Pages: 52-55 DOI: 10.4316/aece.2009.01009 Published: 2009.
16. S. Miclaus, P. Bechet, Estimated and measured values of the radiofrequency radiation power density around cellular base stations, ROMANIAN JOURNAL OF PHYSICS Volume: 52 Issue: 3-4 Pages: 429-440 Published: 2007.
17. S. Miclaus, P. Bechet, D. Stratakis, Exposure levels due to WLAN devices in indoor environments corrected by a time–amplitude factor of distribution of the quasi-stochastic signals. Radiation protection dosimetry, 162(4), 536-543.
18. S. Miclaus, P. Bechet, Electromagnetic field strength in proximity of WLAN devices during data and video file transmission. Electronics Letters, 50(19), 1397-1399.
19. Sorecau, Emil, Mirela Sorecau, and Paul Bechet, Adaptive HF radio channels based on signal-to-noise ratio using SDR technology, In 2023 10th International Conference on Modern Power Systems (MPS), pp. 1-5. IEEE, 2023.
20. A. Sârbu, Miclăuș, A. Digulescu, P. Bechet, Comparative Analysis of User Exposure to the Electromagnetic Radiation Emitted by the Fourth and Fifth Generations of Wi-Fi Communication Devices. International Journal of Environmental Research and Public Health, 17(23), 8837.
21. S. Miclaus, P. Bechet, Non-stationary statistics with amplitude probability density function for exposure and energy density reporting near a mobile phone running 4g applications. Progress in Electromagnetics Research M. 2020;89:151-9.
22. A. Paljanos, S. Miclăuș, P. Bechet, C. Munteanu, Assessment of mobile phone user exposure to UMTS and LTE signals: comparative near-field radiated power levels for various data and voice application services. Journal of ElEctromagnEtic WavEs and applications, 30(9), 1101-1115.