CURRICULUM VITAE

Dr. Jasmin Smajic

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PERSONAL DETAILS

Date of birth:	August 23, 1971
Citizenship:	Switzerland and Bosnia-Herzegovina
Languages:	German: fluent, spoken and written
	English: fluent, spoken and written
	Bosnian / Croatian / Serbian: native speaker

PRESENT POSITION

Senior Scientist

Swiss Federal Institute of Technology (ETH)

Institute of Electromagnetic Fields (IEF)

Gloriastrasse 35, ETZ K91

CH-8092 Zurich, Switzerland

TEACHING SUBJECTS

1. Physical Modeling and Simulation,
2. Multiphysics Simulations for Power Systems,
3. Optimization Methods for Engineers,
4. Seminar in Electromagnetics for CSE.

POSITIONS AND EXPERIENCE

2020-present **Senior Scientist,** ETH Zurich, Institute of Electromagnetic Fields (IEF), Zurich, Switzerland.

2007-present **Lecturer**, ETH Zurich, Institute of Electromagnetic Fields, Zurich, Switzerland.

2011-2020 **Professor of Electrical Engineering**, University of Applied Sciences of Eastern Switzerland – HSR, Rapperswil, Switzerland.

2010-2015 **Steering Committee Member of SEREC –** Swiss Electromagnetic Research & Engineering Centre (centre for consolidation of research and development in electromagnetics across different domains (academia, government and industry)), ETH Zurich, Switzerland.

2008-2011 **Principal Scientist / Project Leader**, ABB Switzerland Ltd., Corporate Research, Baden-Dättwil, Switzerland.

Research field: electric energy generation, transmission and conversion, electrical machines, transformers, electromagnetic fields and waves, simulation software design, large scale 3D simulations, optimization.

2004-2008 **Scientist / Project Leader**, ABB Switzerland Ltd., Corporate Research, Baden-Dättwil, Switzerland.

Research field: electric energy generation, transmission and conversion, electrical machines, transformers, electromagnetic fields and waves, simulation software design, large scale 3D simulations, optimization.

2002-2004 **Postdoctoral Research Fellow**, Laboratory for Electromagnetic Fields, Zürich, Switzerland.

Research field: physical modeling, numerical fields simulation and optimization.

1999-2002 **PhD Student**, Department of Electrical Engineering Fundamentals and Measurements, Faculty of Electrical Engineering and Computing, Zagreb, Croatia.

Research field: electrical machines, generators, and transformers, electromagnetic fields, and design optimization.

1996-1999 **Master Student**, Department of Electrical Engineering Fundamentals and Measurements, Faculty of Electrical Engineering and Computing, Zagreb, Croatia.

Research field: electrical machines, generators, and transformers, numerical computation of electromagnetic fields, and design optimization.

UNIVERSITY EDUCATION

2002-2004 Postdoctoral Research Fellow, Laboratory for Electromagnetic Fields and Microwave Electronics, Zürich, Switzerland.

Research field: physical modeling, electromagnetic fields simulation and optimization.

1999-2002 Postgraduate doctoral study at the Faculty of Electrical Engineering, University of Zagreb , Croatia

Received a Ph.D. degree in Electrical Engineering.

PhD thesis: “Numerical Calculation of Electromagnetic Fields and Design Optimization of Double-Cage Induction Machine”.

1996-1999 Postgraduate master study on Faculty of Electrical Engineering, University of Zagreb, Croatia.

Received a M.Sc. in Electrical Engineering.

Master thesis: “Numerical Computation of Leakage Magnetic Flux of Small Power Transformers”.

1991-1996 Undergraduate study, Faculty of Electrical Engineering, University of Tuzla, Bosnia-Herzegovina.

Received a Graduate Diploma in Electrical Engineering.

Diploma thesis: “Application of Numerical Solution of Helmholtz Equation to the System of Shielded Generator Busbars”.

AWARDS

2021 **IEEE PES Chapter Outstanding Engineer Award**

For his theoretical and practical contributions to power engineering in developing numerical methods for electromagnetic simulations and innovative new industrial technologies.

2017 **Technology Transfer Innovation Award** for the best project in 2017 “HSR Eddy Current Solver” from FUTUR Foundation for supporting technology transfer projects at the HSR, Rapperswil, Switzerland.

2014 **Technology Transfer Innovation Award** for the best project in 2014 from FUTUR – Foundation for supporting technology transfer projects at the HSR, Rapperswil, Switzerland.

2013 **Technology Transfer Innovation Award** for the best project in 2013 from FUTUR – Foundation for supporting technology transfer projects at the HSR, Rapperswil, Switzerland.

2012 **Technology Transfer Innovation Award** for the best project in 2012 from FUTUR – Foundation for supporting technology transfer projects at the HSR, Rapperswil, Switzerland.

1993/1994 The Open Society Institute & Soros Foundation Network (400 West 59th Street, New York, NY 10019, U.S.A.) awarded Jasmin Smajic a student grant for one year for his excellent results in his studies.

1994/1995 The Open Society Institute & Soros Foundation Network (400 West 59th Street, New York, NY 10019, U.S.A.) awarded Jasmin Smajic a second student grant for one year for his excellent results in his studies.

RESEARCH INTERESTS

- Electromagnetic fields and waves
    - Photonics (surface plasmon waveguides, photonic crystals, high density integrated optics, etc.)
    - Microwave and optical resonators, waveguides and antennas
    - Electromagnetic analysis of electrical machines and transformers
    - Multiphysics simulations
    - Electromagnetic compatibility (EMC)
    - Electromagnetic shielding

    - Metamaterials for shielding applications
    - Very fast transients (1MHz – 300MHz) in ultra-high-voltage devices
- Computational electromagnetics
    - Multiple Multipole Program (MMP)
    - Finite Element Method (FEM)
    - Boundary Element Method (BEM) and FEM-BEM coupling
    - Fast BEM Techniques, matrix compression and preconditioning using H-matrices/ACA, and Fast Multipoles
    - Finite Difference Time Domain (FDTD)
    - Large scale 3D simulations and parallel computing
    - Multiphysics simulations
- Design optimization
    - Fitness evaluation based on electromagnetic simulations
    - Deterministic optimization
    - Stochastic optimization (genetic algorithm, evolution strategies, random hill-climbing, etc.)
    - Multi-objective optimization
    - Surrogate models
    - Neural networks

MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

- Senior Member of IEEE (the Institute of Electrical and Electronics Engineers)
- Member of the International Compumag Society
- Member of SEREC (Swiss Electromagnetic Research & Engineering Centre)
- Member of CIGRE (the International Council on Large Electric Systems)

EDITORIAL AND REVIEWING ACTIVITIES

- Permanent reviewer for the IEEE Transactions on Industrial Electronics
- Permanent reviewer for the IEEE Transactions on Microwave Theory and Techniques
- Permanent reviewer for the IEEE Transactions on Magnetics

- Editorial board member of the Asia-Pacific Symposium on Electromagnetic Compatibility
- Editorial board member of the IEEE Compumag Conference (Conference on the Computation of Electromagnetic Fields)
- Editorial board member of the IEEE CEFC Conference (Biennial IEEE Conference on Electromagnetic Field Computation)

SPECIAL TRAININGS

- "Winterschool on Hierarchical Matrices", Max-Planck-Institute for Mathematics in the Sciences, Leipzig, Germany (February 7-11, 2005).
- "Dedicated ABAQUS Course for Industrial Applications", held by ABAQUS Deutschland GmbH, ABB Corporate Research, Baden-Dättwil, Switzerland, (November 8-9, 2005).
- "PowerSpeech Course on Effective and Convincing Presentations", held by GAF (Gesellschaft zur Ausbildung von Führungskräften) Zürich, Switzerland (November 28-30, 2005).
- "Leadership Challenge Programme", held by ABB Weiterbildung&Entwicklung, Baden, Switzerland (January 31 – February 2, 2006).
- "Introduction to Pro/ENGINEER Wildfire 2.0", held by Parameter Technology Corporation (PTC), Brüttisellen - Zürich, Switzerland (March 6-10, 2006).
- "Basic Training for ANSYS-Workbench and ANSYS-Classic", held by CADFEM GmbH, Gesellschaft für computerunterstützte Konstruktion und Berechnung mbH, ABB Corporate Research, Baden-Dättwil, Switzerland, (May 29-30, 2006).
- "Basic Training for ANSYS/EMAG (ANSYS Electromagnetics)", held by CADFEM GmbH, Gesellschaft für computerunterstützte Konstruktion und Berechnung mbH, ABB Corporate Research, Baden-Dättwil, Switzerland, (June 12-13, 2006).
- "Basic Project Management Training", held by ABB Corporate Research Sweden (SECRC), Vesteras, Sweden, (September 5-7, 2006).
- "Introduction to Solid Works and COSMOS Works", held by Solid Solutions AG, at ABB Corporate Research, Baden-Dättwil, Switzerland, (May 8-9, 2007).
- "Basic Training for EASA Software (Data Management)", held by EASA Ltd., at ABB Corporate Research, Krakow, Poland, (October 15-16, 2007).
- "Basic Training for modeFRONTIER 4.0 Optimization Software", held by ESTECO Ltd., at ABB Corporate Research, Dättwil, Switzerland, (March 12-13 and 26–27, 2008).
- "Project Leadership, Management and Communication", held by School of Business of the George Washington University at ABB University Switzerland, Baden, Switzerland, (November 10-12, 2008).

- “Basic Course for Altair Hyper Mesh 9.0”, held by Altair Corporate Germany, Baden-Dättwil, Switzerland, (January 29-30, 2009).