

Thomas E. Winkler

Curriculum Vitae

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Education

- 08/2011– **Ph.D. in Bioengineering**, *University of Maryland*, College Park, USA.
02/2017 Fullbright Foreign Fellow & Future Faculty Fellow; GPA 4.0
Thesis *Microsystems Integration Towards Point-of-Care Monitoring of Clozapine Treatment for Adherence, Efficacy and Safety*
Advisor *Prof. Reza Ghodssi (ghodssi@umd.edu)*
- 10/2005– »**Diplomingenieur**« (B.S./M.S.) in **Biophysics**, *Johannes Kepler Universität*, Linz, Austria.
01/2011 Nanoscience & -technology Focus; Diploma Exams Passed with Distinction
One-semester ERASMUS exchange program at *Københavens Universitet*, Copenhagen, Denmark
Thesis *Dilute Magnetic Semiconductors: Manipulation of the Carrier Concentration in Ga-Mn-Pnictides*
Advisor *Prof. Alberta Bonanni (alberta.bonanni@jku.at)*

Research Experience

- since **Micro- and Nanosystems**, *KTH Royal Institute of Technology*, Stockholm, Sweden.
- 03/2017 **NEUROVU: REAL-TIME SENSING IN MICROFLUIDIC MODELS OF THE NEUROVASCULAR UNIT**
Developing Organ-on-a-Chip models of the neurovascular unit with real-time sensing capabilities employing both standard and non-traditional fabrication and microsystems integration strategies
Advisor *Prof. Anna Herland (aherland@kth.se)*
- 04/2012– **MEMS Sensors and Actuators Laboratory**, *University of Maryland*, College Park, USA.
03/2017 **MICROSYSTEMS DEVELOPMENT FOR NEUROPSYCHIATRIC DISORDERS (MiND)**
Developed a BioMEMS device to assist in schizophrenia treatment planning and monitoring, specifically related to the second-line drug clozapine, incorporating biomaterial-enhanced electrochemical sensing of clozapine and impedance cytometry for white blood cell counts
Collaborated on projects relating to studies of biofilm growth and treatment in micro-environments, as well as on label-free immunoassays leveraging *Tobacco Moosaic* virus and impedimetric sensing
Advisor *Prof. Reza Ghodssi (ghodssi@umd.edu)*
- 03/2010– **n-core group**, *Johannes Kepler Universität*, Linz, Austria.
07/2011 **LOW-TEMPERATURE FERROMAGNETISM IN $\text{Ga}_{1-x}\text{Mn}_x\text{N}$**
Recommissioned a magneto-transport system, manufactured $\text{Ga}_{1-x}\text{Mn}_x\text{N}$ samples by metalorganic vapor phase epitaxy, developed an appropriate contact protocol, and studied the effects of donor-codoping on their structural and electrical properties
Advisor *Prof. Alberta Bonanni (alberta.bonanni@jku.at)*
- 09/2009– **Advanced Semiconductor Research group**, *University of California & Lawrence Berkeley National Laboratory*, Berkeley, USA.
01/2010 **THE INTERPLAY BETWEEN MAGNETISM AND VACANCIES IN $\text{Ga}_{1-x}\text{Mn}_x\text{P}$**
Manufactured $\text{Ga}_{1-x}\text{Mn}_x\text{P}$ samples by ion implantation and pulsed-laser melting, and studied the change of their magnetic and electrical properties with the introduction of compensating defects through irradiation with Ar ions
Advisor *Prof. Oscar Dubon (oddubon@berkeley.edu)*
- 07/2008– **Molecular Bioelectronics group**, *Forschungszentrum Jülich*, Jülich, Germany.
08/2008 **CONTRIBUTED TO RESEARCH INTO GRAPHENE-BASED BIOSENSORS**
Supervisor *Dr. Dirk Mayer (dirk.mayer@fz-juelich.de)*
- 07/2007– **ATLAS MDT group**, *Max Planck Institut für Physik*, Munich, Germany.
08/2007 **CONTRIBUTED TO R&D ON THE ATLAS UPGRADE FOR CERN'S SUPER LHC PROJECT**
Supervisor *Dr. Oliver Kortner (kortner@mppmu.mpg.de)*

Scholarships & Awards

- 2018 Marie Skłodowska-Curie Individual Research Fellowship, *European Commission*.
- 2016 Russell & Sigurd Varian Award, *American Vacuum Society*.
Dean's Doctoral Research Award, *Clark School of Engineering, University of Maryland*.
Ann G. Wylie Dissertation Fellowship, *Graduate School, University of Maryland*.
Best Poster Runner-Up, *Mid-Atlantic Micro/Nano Alliance Spring 2016 Workshop*.
- 2015 Future Faculty Fellowship, *Clark School of Engineering, University of Maryland*.
3-Minute Thesis Competition Runner-Up, *Graduate School, University of Maryland*.
watch the video at youtu.be/7guLm0pFG5k
First Place for Research in Bioengineering, *Bioscience Day, University of Maryland*.
Best Poster Award, *Mid-Atlantic Micro/Nano Alliance Spring 2015 Workshop*.
- 2014 Outstanding Graduate Assistant Award, *Graduate School, University of Maryland*.
- 2011 Fulbright Foreign Student Scholarship, *Austrian American Educational Commission*.
Distinguished Graduate Fellowship, *Clark School of Engineering, University of Maryland*.
Wilhelm Macke Mobility Scholarship, *Department of Physics, Johannes Kepler Universität*.
Foreign Exchange Scholarship, *Julius Raab Foundation*.
- 2011 Wilhelm Macke Thesis Recognition Prize, *Department of Physics, Johannes Kepler Universität*.
Study Grant, *Faculty of Engineering & Natural Science, Johannes Kepler Universität*.
- 2009 Marshall Plan Scholarship, *Austrian Marshall Plan Foundation*.
Wilhelm Macke Mobility Scholarship, *Department of Physics, Johannes Kepler Universität*.
- 2008 ERASMUS Mobility Grant, *European Union*.
Mobility Grant, *State of Lower Austria*.
Achievement Award, *State of Lower Austria*.
Merit Scholarship, *Faculty of Engineering & Natural Science, Johannes Kepler Universität*.
- 2007 Merit Scholarship, *Faculty of Engineering & Natural Science, Johannes Kepler Universität*.

Journal Publications (asterisks* for equal contributions; preprints available upon request)

- 03/2018 T.E. Winkler, F.O. Stevenson, E. Kim, M. Kang, G.F. Payne, D.L. Kelly, and R. Ghodssi. The Role of Microsystems Integration Towards Point-of-Care Clozapine Treatment Monitoring in Schizophrenia. *IEEE Sensors Letters* 2, 5500304. **Featured on Front Cover**.
- 01/2018 S. Chu, T.E. Winkler, A.D. Brown, J.N. Culver, and R. Ghodssi. Localized 3-D Functionalization of Bionanoreceptors on High-Density Micropillar Arrays via Electrowetting. *Langmuir* 34, 1725–1732.
- 08/2017 S. Subramanian, E.I. Tolstaya, T.E. Winkler, W.E. Bentley, and R. Ghodssi. An Integrated Microsystem for Real-Time Detection and Threshold-Activated Treatment of Bacterial Biofilms. *ACS Applied Materials and Interfaces* 9, 31362–31371.
- 08/2017 G.E. Banis, T.E. Winkler, P. Barton, S.E. Chocron, E. Kim, D.L. Kelly, G.F. Payne, H. Ben-Yoav, and R. Ghodssi. The Binding Effect of Proteins on Medications and Its Impact on Electrochemical Sensing: Antipsychotic Clozapine as a Case Study. *Pharmaceuticals* 10, 69.
- 05/2017 T.E. Winkler, S.L. Lederer, E. Kim, H. Ben-Yoav, D.L. Kelly, R. Ghodssi, and G.F. Payne. Molecular Processes in an Electrochemical Clozapine Sensor. *Biointerphases* 12, 02B401.
- 04/2017 T.E. Winkler*, R. Dietrich*, E. Kim, H. Ben-Yoav, D.L. Kelly, G.F. Payne and R. Ghodssi. The Interplay of Electrode- and Bio-materials in a Redox-cycling-based Clozapine Sensor. *Electrochemistry Communications* 79, 33–36.
- 04/2017 M. Kang, E. Kim, T.E. Winkler, G.E. Banis, Y. Liu, C. Kitchen, D.L. Kelly, G.F. Payne and R. Ghodssi. Reliable Clinical Serum Analysis with Reusable Electrochemical Sensor: Toward Point-of-Care Measurement of the Antipsychotic Medication Clozapine. *Biosensors and Bioelectronics* 95, 55–59.
- 12/2016 E. Kim, T.E. Winkler, C. Kitchen, M. Kang, G.E. Banis, W.E. Bentley, D.L. Kelly, R. Ghodssi, and G.F. Payne. Redox Probing for Chemical Information of Oxidative Stress. *Analytical Chemistry* 89, 1583–1592.

- 09/2016 **T.E. Winkler**, H. Ben-Yoav, and R. Ghodssi. Hydrodynamic Focusing for Microfluidic Impedance Cytometry: A System Integration Study. *Microfluidics & Nanofluidics* 20, 134.
- 09/2016 E. Kim*, Y. Liu*, H. Ben-Yoav, **T.E. Winkler**, K. Yan, X. Shi, J. Shen, D.L. Kelly, R. Ghodssi, W.E. Bentley, and G.F. Payne. Fusing Sensor Paradigms to Acquire Chemical Information: An Integrative Role for Smart Biopolymeric Hydrogels. *Advanced Healthcare Materials* 5, 2595–2616.
- 07/2015 D.L. Kelly*, H. Ben-Yoav*, G.F. Payne, **T.E. Winkler**, S.E. Chocron, E. Kim, V. Stock, G. Vyas, R.C. Love, H.J. Wehring, K.M. Sullivan, S. Feldman, F. Liu, R.P. McMahon, R. Ghodssi. Blood Draw Barriers for Treatment with Clozapine and Development of Point-of-Care Monitoring Device. *Clinical Schizophrenia & Related Psychoses* 12, 23–30.
- 03/2015 S.E. Chocron, B.M. Weisberger, H. Ben-Yoav, **T.E. Winkler**, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. Multidimensional Mapping Method using an Arrayed Sensing System for Cross-Reactivity Screening. *PLoS ONE* 10, e0116310.
- 02/2015 E. Kim*, S.E. Chocron*, H. Ben-Yoav, **T.E. Winkler**, Y. Liu, M. Glassman, C. Wolfram, D.L. Kelly, R. Ghodssi, and G.F. Payne. Programmable “Semismart” Sensor: Relevance to Monitoring Antipsychotics. *Advanced Functional Materials* 25, 2156–2165.
- 02/2015 H. Ben-Yoav, S.E. Chocron, **T.E. Winkler**, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. An Electrochemical Micro-System for Clozapine Antipsychotic Treatment Monitoring. *Electrochimica Acta* 163, 260–270.
- 11/2014 **T.E. Winkler***, H. Ben-Yoav*, S.E. Chocron, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. Electrochemical Study of the Catechol-Modified Chitosan System for Clozapine Treatment Monitoring. *Langmuir* 30, 14686–14693.
- 03/2014 H. Ben-Yoav*, **T.E. Winkler***, S.E. Chocron, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. Redox cycling-based amplifying electrochemical sensor for in situ clozapine antipsychotic treatment monitoring. *Electrochimica Acta* 130, 497–503.
- 07/2011 A. Bonanni, M. Sawicki, T. Devillers, W. Stefanowicz, B. Faina, Tian Li, **T.E. Winkler**, D. Sztenkiel, A. Navarro-Quezada, M. Rovezzi, R. Jakiela, A. Grois, M. Wegscheider, W. Jantsch, J. Suffczynski, F. D’Acapito, A. Meingast, G. Kothleitner, and T. Dietl. Experimental Probing of Exchange Interactions Between Localized Spins in the Dilute Magnetic Insulator (Ga,Mn)N. *Physical Review B* 84, 035206.
- 01/2011 **T. E. Winkler**, P.R. Stone, T. Li, K.M. Yu, A. Bonanni, and O.D. Dubon. Compensation-dependence of magnetic and electrical properties in $\text{Ga}_{1-x}\text{Mn}_x\text{P}$. *Applied Physics Letters* 98, 012103.

Conference Presentations (asterisks* if not presented by first author)

- 10/2017 **T.E. Winkler**, E. Kim, M. Kang, G.F. Payne, D.L. Kelly, and R. Ghodssi. *International Conference on Miniaturized Systems for Chemistry and Life Sciences (μ TAS)*, Savannah, Georgia. *Oral presentation.*
- 08/2017 R.C. Huiszoon, S. Preza, P.R. Rajasekaran, **T.E. Winkler**, W.E. Bentley, and R. Ghodssi. *BMES/FDA Frontiers in Medical Devices Conference*, Washington, District of Columbia. *Oral presentation.*
- 06/2017 A. Herland, **T.E. Winkler***, D. Voulgaris, B.M. Maoz, K.K. Parker, and D.E. Ingber. *Joint European Medical and Biological Engineering Conference (EMBEC) and Nordic-Baltic Conference on Biomedical Engineering and Medical Physics (NBC)*, Tampere, Finland. *Oral presentation.*
- 05/2017 R.C. Huiszoon, S. Subramanian, **T.E. Winkler**, S. Preza, and R. Ghodssi. *American Chemical Society (ACS) National Meeting*, Washington, District of Columbia. *Oral presentation.*
- 01/2017 S. Chu, B. Hurwitz, **T.E. Winkler**, A.D. Brown, J.N. Culver, and R. Ghodssi. *IEEE International Conference on Micro Electro Mechanical Systems (MEMS)*, Las Vegas, Nevada. *Proceedings published. Oral presentation.*
- 12/2016 D.L. Kelly, E. Kim, **T.E. Winkler**, C. Kitchen, M. Kang, G.E. Banis, W.E. Bentley, R. Ghodssi, and G.F. Payne. *American College of Neuropsychopharmacology (ACNP) Annual Meeting*, Hollywood, Florida. *Poster Presentation.*

- 11/2016 **T.E. Winkler**, S.L. Brady, E. Kim, H. Ben-Yoav, D.L. Kelly, G.F. Payne, and R. Ghodssi. *American Vacuum Society (AVS) International Symposium*, Nashville, Tennessee. *Oral Presentation*.
- 11/2016 R. Huiszoon, S. Subramanian, **T.E. Winkler**, H.O. Sintim, W.E. Bentley, and R. Ghodssi. *American Vacuum Society (AVS) International Symposium*, Nashville, Tennessee. *Oral presentation*.
- 10/2016 **T.E. Winkler**, F. Zang, F.O. Stevenson, J.N. Culver, and R. Ghodssi. *International Conference on Miniaturized Systems for Chemistry and Life Sciences (μ TAS)*, Dublin, Ireland. *Poster presentation*.
- 03/2016 G.E. Banis, P. Barton, **T.E. Winkler**, S.E. Chocron, E. Kim, H. Ben-Yoav, D. Kelly, G.F. Payne, and R. Ghodssi. *Materials Research Society (MRS) Spring Meeting*, Phoenix, Arizona. *Oral presentation*.
- 06/2015 **T.E. Winkler**, H. Ben-Yoav, D.L. Kelly, and R. Ghodssi. *International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers)*, Anchorage, Alaska. *Proceedings published. Oral presentation*.
- 05/2015 **T.E. Winkler**, H. Ben-Yoav, D.L. Kelly, and R. Ghodssi. *BMES/FDA Frontiers in Medical Devices Conference*, College Park, Maryland. *Poster presentation*.
- 11/2014 **T.E. Winkler**, H. Ben-Yoav, S.E. Chocron, E. Kim, G.F. Payne, D.L. Kelly, and R. Ghodssi. *IEEE EMBS BRAIN Grand Challenges Conference*, Washington, District of Columbia. *Poster presentation*.
- 11/2014 R. Dietrich, **T.E. Winkler**, H. Ben-Yoav, S.E. Chocron, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. *American Vacuum Society (AVS) International Symposium*, Baltimore, Maryland. *Oral presentation*.
- 06/2014 **T.E. Winkler**, H. Ben-Yoav, D.L. Kelly, and R. Ghodssi. *Solid-State Sensors, Actuators and Microsystems Workshop*, Hilton Head, South Carolina. *Proceedings published. Poster presentation*.
- 04/2014 D.L. Kelly, H. Ben-Yoav, V. Stock, **T.E. Winkler**, G.F. Payne, S.E. Chocron, E. Kim, G. Vyas, R.C. Love, H.J. Wehring, K.M. Sullivan, S. Feldman, F. Liu, R.P. McMahon, R. Ghodssi. *College of Psychiatric and Neurologic Pharmacists (CPNP) Annual Meeting*, Phoenix, Arizona. *Poster presentation*.
- 12/2013 D.L. Kelly, H. Ben-Yoav, V. Stock, **T.E. Winkler**, G.F. Payne, S.E. Chocron, E. Kim, G. Vyas, R.C. Love, H.J. Wehring, K.M. Sullivan, S. Feldman, F. Liu, R.P. McMahon, R. Ghodssi. *American College of Neuropsychopharmacology (ACNP) Annual Meeting*, Hollywood, Florida. *Poster presentation*.
- 11/2013 H. Ben-Yoav, S.E. Chocron*, **T.E. Winkler**, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. *IEEE Sensors Conference*, Baltimore, Maryland. *Proceedings published. Oral presentation*.
- 10/2013 **T.E. Winkler**, H. Ben-Yoav, S.E. Chocron, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. *Electrochemical Society (ECS) Meeting*, San Francisco, California. *Oral presentation*.
- 10/2013 H. Ben-Yoav, **T.E. Winkler**, S.E. Chocron, G.R. Costa, S.M. Restaino, N. Woolsey, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. *International Conference on Miniaturized Systems for Chemistry and Life Sciences (μ TAS)*, Freiburg, Germany. *Proceedings published. Poster presentation*.
- 06/2013 H. Ben-Yoav, **T.E. Winkler**, S.E. Chocron, S.M. Restaino, G.R. Costa, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. *International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers & Euroensors)*, Barcelona, Spain. *Proceedings published. Poster presentation*.
- 04/2013 H. Ben-Yoav, **T.E. Winkler***, E. Kim, D.L. Kelly, G.F. Payne, and R. Ghodssi. *Materials Research Society (MRS) Spring Meeting*, San Francisco, California. *Proceedings published. Oral presentation*.
- 04/2011 **T.E. Winkler**, P.R. Stone, T. Li, R. Jakiela, K.M. Yu, A. Bonanni, and O.D. Dubon. *IEEE International Magnetism Conference (Intermag)*, Taipei, Taiwan. *Oral presentation*.

Patents & Applications

- 2017 H. Ben-Yoav, R. Ghodssi, G.F. Payne, D.L. Kelly, E. Kim, and **T.E. Winkler**. Analytical Micro-devices for Mental Health Treatment Monitoring. *United States Patent 9581536*.
- 2017 E. Kim, G.F. Payne, M. Kang, W.E. Bentley, R. Ghodssi, **T.E. Winkler**, and G.E. Banis. Redox Probing for Chemical Information of Oxidative Stress. *United States Provisional Patent Application 62/429,610*.
- 2017 G.F. Payne, M. Kang, E. Kim, Y. Liu, R. Ghodssi, **T.E. Winkler**, and G.E. Banis. Electrodeposited Graphene-Chitosan Composite Film for Therapeutic Drug Monitoring. *United States Provisional Patent Application 62/475,445*.

- 2016 **T.E. Winkler**, H. Ben-Yoav, and R. Ghodssi. Integrated and Standalone Label and Reagent-free Microfluidic Devices and Microsystems for Differential White Blood Cell Counts. *United States Patent Application* 2016/0274020.

Research Proposal Experience (as lead (‡) or contributing author)

- 2017 **NeuroVU: Real-time Sensing in Microfluidic Models of the Neurovascular Unit.**
European Commission Marie Skłodowska-Curie Actions – Individual Fellowships
Status selected for funding
Advisor *Anna Herland*
- 2016 **Rapid Therapeutic Clozapine Monitoring in Schizophrenia.**
National Institutes of Health
Status not selected for funding
PIs *Deanna L. Kelly & Gregory F. Payne*
- ‡2015 **Microsystem Development for Point-of-Care Clozapine Treatment Monitoring in Schizophrenia.**
University of Maryland Research and Innovation Seed Grant Program
Status not selected for funding
PIs *Reza Ghodssi & Deanna L. Kelly*
- ‡2014 **Microsystem Development for Clozapine Monitoring in Schizophrenia.**
National Institutes of Health
Status funded as R56MH105571
PIs *Deanna L. Kelly & Reza Ghodssi*
- 2014 **An Integrated Lab-on-a-chip for Schizophrenia Treatment Monitoring.**
National Science Foundation
Status not selected for funding
PIs *Reza Ghodssi, Hadar Ben-Yoav, & Deanna L. Kelly*
- 2013 **Development of a Biosensor Device for Clozapine Treatment in Schizophrenia.**
National Institutes of Health
Status scored; not selected for funding
PIs *Deanna L. Kelly & Reza Ghodssi*
- 2013 **Biosensor Device for Clozapine Treatment Monitoring in Schizophrenia.**
Maryland Innovation Initiative
Status funded as STMD0613008
PIs *Reza Ghodssi, Deanna L. Kelly, Gregory F. Payne & Hadar Ben-Yoav*

Teaching & Mentoring Experience

- Spring 2013–** **MEMS Sensors and Actuators Laboratory**, *University of Maryland*, College Park, USA.
Spring 2017 Mentored eight undergraduate research assistants and two junior graduate research assistants
Undergraduate Robert Dietrich (Spring 2013–Winter 2015/16), Sarah Brady (Summer 2013), Delaney Jordan (Spring 2015), Ashlyn Lee (Summer 2015), Sukriti Ghosh (Summer 2015), Stephen Semick (Summer 2015–Winter 2015/16), Florence Stevenson (Fall 2015–Spring 2016), Eugene Froimchuk (Spring 2016)
Graduate Sheryl E. Chocron (M.S. in Bioengineering, January 2014), George E. Banis (Ph.D. in Bioengineering, Class of 2014)
- Fall 2014 &** **Project Facilitator**, *University of Maryland*, College Park, USA.
Fall 2016 EnEE 605 – Design and Fabrication of Micro-electromechanical Systems
Instructor *Prof. Reza Ghodssi (ghodssi@umd.edu)*
- Spring 2015–** **Future Faculty Fellow**, *University of Maryland*, College Park, USA.
Spring 2016 Competitive three-semester program encompassing seminars focused on skills for effective teaching as well as for developing and funding a successful faculty research program.

- Spring 2016** **Co-Instructor**, *University of Maryland*, College Park, USA.
 BioE 431/631 – Biosensor Techniques, Instrumentation, and Applications
 Instructor *Prof. Ian White (ianwhite@umd.edu)*
- Spring 2013** **Teaching Assistant**, *University of Maryland*, College Park, USA.
 BioE 232 – Thermodynamics for Bioengineers
 Instructor *Prof. Keith Herold (herold@umd.edu)*
- Fall 2012** **Teaching Assistant**, *University of Maryland*, College Park, USA.
 BioE 120 – Biology for Engineers
 Instructor *Prof. Adam Hsieh (hsieh@umd.edu)*

Expertise & Skills

- Analysis** electroanalytical methods, impedimetric sensing, fluorescence microscopy, scanning electron microscopy, magneto-transport, atomic force microscopy, profilometry, flow cytometry, magnetometry, ellipsometry, Raman spectroscopy, absorption spectroscopy, X-ray diffraction, gel electrophoresis
- Processing** photolithography, soft lithography, microfluidic packaging, bacterial cell culture, physical vapor deposition, plasma-enhanced chemical vapor deposition, reactive ion etching, metalorganic vapor phase epitaxy, ion implantation and pulsed-laser melting, nanoimprint lithography
- Software** Origin, LabVIEW, COMSOL, MATLAB, Mathematica, AutoCAD, Inventor
- Languages** German (native), English (C2+), Swedish (A2/B1), Chinese (A1), Danish (A1), Spanish (A1)

Society Membership & Service

- Member** American Vacuum Society (AVS), Biomedical Engineering Society (BMES), Electrochemical Society (ECS), Institute of Electrical and Electronics Engineers (IEEE), Materials Research Society (MRS)
- Reviewer** Biomedical Microdevices; Sensors; Journal of Micro/Nanolithography, MEMS, and MOEMS (JM³); PLoS ONE; Small
- 2004–** **Alumni Academiae Aestatis.**
- 2014** Alumni society of the Lower Austrian Summer Academies (over 240 members)
 Member of Managing Board and Webmaster
- 10/2004–** **Alternative Civilian Service**, *Apartmenthaus Fortuna*, Vienna, Austria.
- 09/2005** Helped in nursing home