CURRICULUM VITAE

NAME:	Joanna KOWALSKA
DATE AND PLACE OF BIRTH:	30/06/1983 Dubna, Russia
NATIONALITY:	Polish
ADDRESS:	Max Planck Institute for Chemical Energy Conversion Department of Inorganic Spectroscopy Stiftstrasse 34 - 36 45-470 Mülheim an der Ruhr, Germany
MOBILE:	+49 (0) 176 259 24341 +48 (0) 502 679 098
E–MAIL:	jkkowalska@gmail.com joanna.kowalska@cec.mpg.de

EDUCATION & WORK EXPERIENCE

02/2018 – present	Rheinisch-Westfälische Technische Hochschule Aachen (RWTH Aachen), Aachen, Germany, Scientist
01/2018 – present	Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany, Guest scientist & Research Coordinator
04/2014-12/2017	Max Planck Institute for Chemical Energy Conversion, Department of Inorganic Spectroscopy (previously: Department of Molecular Theory and Spectroscopy), Mülheim an der Ruhr, Germany – Scientist
05/2013-03/2014	Max Planck Institute for Chemical Energy Conversion, Department of Molecular Theory and Spectroscopy (DeBeer group: X-ray Spectroscopy), Mülheim an der Ruhr, Germany – PostDoc
07/2012-03/2013	The H. Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences, Under: Leading National Research Centre: The Marian Smoluchowski Scientific Consortium "Energy–Matter–Future" Kraków, Poland – Postdoctoral Fellow
10/2007-12/2012	The H. Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences, International PhD Studies, Department of Experimental Physics of Complex Systems (previous: Department of Applied Spectroscopy), Kraków, Poland – PhD Student
02/2013	PhD degree in physics given by The Scientific Council of the Institute of Nuclear Physics Polish Academy of Sciences in Kraków, on 11th February 2013 Ph.D. Thesis Title: *Imaging of Complex Systems by Means of Selected Spectroscopic Methods* under the supervision of prof. Wojciech M. Kwiatek (in Polish)

June 2007	M.Sc. in Physics (Summa Cum Laude) M. Sc. Thesis Title: *Application of Proton Microprobe and Synchrotron Radiation to Research on Biological Systems* (supervisor prof. Wojciech M. Kwiatek)
10/2002-06/2007	The Faculty of Physics, Astronomy and Applied Computer Science, Institute of Physics, Jagiellonian University, Kraków, Poland (medical physics specialization)
1999-2002	School No. 5 of the Musical Society in Kraków, Poland
1998-2002	Jan III Sobieski High School No 2 in Kraków, Poland

CURRENT RESEARCH INTEREST AND EXPERIENCE

X-ray Absorption Spectroscopy (XAS), X-ray Emission Spectroscopy (XES), X-ray Magnetic Circular Dichroism (XMCD), Fourier Transform Infrared Spectroscopy (FTIR), Proton Induced X-ray Emission Spectroscopy (PIXE), Synchrotron Radiation

I'm an experimental physicist with a Ph.D. degree with a broad experience in spectroscopic methods applied to biological, biomedical and chemical systems. This experience is further supported by experience in sophisticated data analysis including multivariate statistical analysis. I gained my experience through numerous scientific visits at research facilities around the world.
I've also worked as an statistical analysis in interdisciplinary research consultant for the STATSOFT Polska company.
Additionally, since this year I'm holding a position as a Central Research Coordinator at both RWTH Aachen and MPI Chemical Energy Conversion.

LANGUAGES

- Polish: native
- English: good working knowledge
- German: good working knowledge

AWARDS AND HONOURS

- 2015 - selected as participant for the 65th Lindau Nobel Prize Laureates Meeting: Interdisciplinary (Nominated by Prof. Wolfgang Lubitz, Fellow of the Max Planck Society)
- 01/2013 and 01/2014 European XFEL travel grant towards the contribution in the European XFEL and Photon Science Users' Meeting in Hamburg, Germany
- *2013-2014* – Max Planck Society Scholarship
- *2013* – selected as participant for the 1st Forum of Young Scientists, meeting with Nobel Prize Laureate Prof. Robert Huber, Warszawa, Poland
- *2007-2012* – General Director of The Institute of Nuclear Physics PAN Scholarship for best PhD Students'
- *2009* – Lesser Poland doctoral scholarship (funded by the European Social Fund 2008 – 2013)
- *10/2004*-09/2007 – Academic Scholarship for the best students at the Institute of Physics, Jagiellonian University
- *05/2005* –prize for the best poster presentation during the Annual Students Poster Session at Institute of Physics, Jagiellonian University

MEMBERSHIPS

- *2002-2007* Jagiellonian University, Institute of Physics, Physics' Students Scientific Society
- *2008-present* Polish Synchrotron Radiation Society
- *2009-present* Science Popularization Society (LOGOS)

- *2008-2011* Diagnostic Application of Synchrotron Infrared Microspectroscopy (DASIM)
- *2013-present* Expert in Polish Women's Network of Science, Project of the Foundation Women
- *2014-2015* Association for PhD Candidates and PhD Career Development (PolDoc)
- *2015-present* Polish Physical Society

SCIENTIFIC VISITS AND EXPERIMENTAL EXPERIENCE

- 08/2017 – Beamline ID4-C (XMCD), Advanced Photon Source, Chicago, USA (18 shifts)
- 11/2016, 05/2017 - Beamline BL12XU-B2 (XAS, RIXS), Spring8, Japan (12 shifts, respectively)
- 05/2017; 10/2017 – Beamline 10ID-1 (STXM), CLS, Saskatoon, Canada (12 shifts, respectively)
- *04/2016* – Beamline ID03-D (NRVS), Advanced Photon Source, Chicago, USA (15 shifts)
- *08/2015* – Beamline P01 (NRVS), PETRA III, Hamburg, Germany (15 shifts)
- *07/2015* – University of Utrecht (XMCD Data Analysis – Multiplet Approach), Utrecht, Netherlands (2 days)
- *07/2015* – Beamline ID26 (S XES installing new setup and test measurements), European Synchrotron Radiation Facility (ESRF), Grenoble, France (18 shifts)
- *06/2015* - Beamline C1 (XAS/XES), CHESS, Ithaca, USA (21 shifts)
- *08/2014*, *04/2015* – Beamline ID12 (XMCD), European Synchrotron Radiation Facility (ESRF), Grenoble, France (9 shifts, 18 shifts, respectively)
- *05/2014* – Beamline SEXTANTS (soft-XAS), SOLEIL, Gif-sur-Yvette, France (15 shifts)
- *05/2014* – Beamline BACH (XMCD), ELETTRA, Trieste, France (12 shifts)
- *04/2014*, *06/2015*; *10/2016* – Beamline DEIMOS (XMCD), SOLEIL, Gif-sur-Yvette, France (12 shifts and 18 shifts respectively)
- *03/2014* **–** Beamline ISISS (soft-XAS, XPS), BESSY II, Berlin, Germany (21 shifts)
- *11/2013*; *07/2014* – Beamline ID26 (XAS, XES, RIXS), European Synchrotron Radiation Facility (ESRF), Grenoble, France (both 18 shifts)
- *12/2010* – Beamline IR2 (μFTIR), ANKA, Karlsruhe, Germany (18 shifts)
- *12/2010* – Beamline FLUO (μXRF), ANKA, Karlsruhe, Germany (21 shifts)
- *05/2010*; *06/2011* – Beamline SMIS (μFTIR), SOLEIL, Gif-sur-Yvette, France (both 15 shifts)
- *09/2009*; *07/2010*; *07/2011* **–** Beamline L (μXRF), HASYLAB, DESY, Hamburg, Germany (15, 15, 18 shifts respectively)
- *11/2006* – Beamline E4 (EXAFS), HASYLAB, DESY, Hamburg, Germany (12 shifts)
- *09/2006; 03/2007; 07/2007; 10/2008; 05/2009; 03/2010; 05/2010; 04/2011; 01/2012; 06/2012* -Van de Graff accelerator at the Institute of Nuclear Physics, Kraków, Poland: Proton Beam (PIXE), Proton Micro Beam (μPIXE), Single Hit Ion Facility and X-ray Micro Tomography (μCT)

PROJECTS

CONDUCTED BASED ON SYNCHROTRON RADIATION

- *Fe and Mo L-edge X-ray Magnetic Circular Dichroism Studies of the FeMo cofactor of Nitrogenase*, APS, Chicago, USA (no. GUP-49491, 05/2017-03/2018) - **project leader**
- *Unraveling the synergic effect between nickel and manganese in Ni_6MnO_8 and $NiMn_2O_4$ catalysts during the in-situ water oxidation reaction*, CLS, Saskatoon, Canada (no. 25-8009; 15/01/2017-30/06/2018)
- *Operando studies of the water oxidation reaction of Ni- and Mn- based oxides by Ni 1s2p RIXS*, Spring8, Japan (no. 2016B4263, 06/2016-06/2018)

- *Determination of Fe electron spin state distribution in FeMo and FeV cofactors of Nitrogenase using X-ray Magnetic Circular Dichroism* SOLEIL, Gif-sur-Yvette, France (no. 20160536; 09/2016–03/2017) – **project leader**
- *Selectively identifying Fe-N vibrations: NRVS studies on ammonia synthesis and ammonia decomposition catalysts – APS, Chicago, USA* (no. 41664; 03/2015 – 09/2016)
- *Selectively identifying Fe-N vibrations: NRVS studies on ammonia synthesis and ammonia decomposition catalysts* – PETRA III, Hamburg, Germany (no. 20140479; 07/2015–12/2015)
- *Fe X-ray Magnetic Circular Dichroism of FeMo and FeV Cofactors of Nitrogenase* – SOLEIL, Gif-sur-Yvette, France (no. 20141248; 01/2015–06/2015) – **project leader**
- *Valence-to-Core Detected EXAFS: A Site-Selective Probe of Geometric Structure* – SOLEIL, Gif-sur-Yvette, France (no. 20141248; 01/2015–06/2015) – **co-author**
- *Mo X-ray Magnetic Circular Dichroism Studies of FeMoco of Nitrogenase* – European Synchrotron Radiation Facility (ESRF), Grenoble, France (no. CH-4332; 02/2015–07/2015) – **project leader**
- *Mo X-ray Magnetic Circular Dichroism Studies of FeMo Cofactor of Nitrogenase* – European Synchrotron Radiation Facility (ESRF), Grenoble, France (no. CH-4172; 08/2014–12/2014) – **project leader**
- *Lighting up the Role of the Redox-Active Metal Mn in Nature's Mn_4O_5Ca Oxygen-Evolving Complex* – BESSY II, Berlin, Germany (no. 4100235-ST; 03/2014–09/2014)
- *X-ray Spectroscopic Studies to Elucidate the Charge of the Iron Molybdenum Cofactor in Nitrogenase* – European Synchrotron Radiation Facility (ESRF), Grenoble, France (no. CH-4047; 03/2014-06/2014) – **co-author**
- *Soft X-ray Emission Spectroscopy as a Direct Probe of Protonation States in Oxo-Bridged Mn^{IV} Dimers Relevant to Redox-Active Metalloproteins* – SOLEIL, Gif-sur-Yvette, France (no. 20131373; 02/2014-07/2014) – **co-author**
- *Fe X-ray Magnetic Circular Dichroism of FeMo Cofactor of Nitrogenase* – Synchrotron SOLEIL, Gif-sur-Yvette, France (no. 20131003; 02/2014–07/2014) – **project leader**
- *Defining the Intermediates in Biological Hydrogen Conversion* – European Synchrotron Radiation Facility (ESRF), Grenoble, France (no. CH-4046; 03/2014-06/2014) – **co-author**
- *Fe X-ray Magnetic Circular Dichroism Studies of FeMo Cofactor of Nitrogenase* – Synchrotron ELETTRA, Trieste, Italy (no. 20135130; 01/2014–06/2014) – **project leader**
- *X-ray Emission Studies on Redox Active Calcium Models with Relevance to Photosynthetic Water Oxidation* Synchrotron SOLEIL, Gif -sur-Yvette, France (no. 20140396; 07/2014–01/2015) – **co-author**
- *Characterization of the Intermediates in Biological Methane to Methanol Conversion* – European Synchrotron Radiation Facility (ESRF), Grenoble, France (no. CH-3908; 07/2013 – 12/2013)
- *Application of Synchrotron Radiation Based FTIR Spectroscopy to Characteristics of DNA Damages Induced by Protons and X-ray Microbeam in Single Cells* – Synchrotron SOLEIL, Gif -sur-Yvette, France (no. 20110351; 09/2011-03/2012) – **co-author**
- *The Effect of Dietary and Pharmacological Treatments on Distribution of Selected Elements and Oxidation State of Iron in Atherosclerotic Plaques of ApoE/LDLR-Double Knockout Mice* – HASYLAB/DESY, Hamburg, Germany (no. II-20100089EC; 06/2010-06/2012) – **co-author**
- *Imaging of Atherosclerotic Plaques in ApoE – Knockout Mice by Different Spectroscopic Techniques and Histological Stainings* – ANKA/KIT, Karlsruhe, Germany (OTH-75; 09/2010-03/2011) – **project leader**
- *FTIR Imaging of Atherosclerotic Plaques of ApoE/LDLR – Double Knockout Mice Subjected to Endothelial Cell Function Affecting Drugs* – Synchrotron SOLEIL, Gif-sur-Yvette Cedex, France (no. 20100901; 03/2011-09/2011) – **co-author**
- *Distribution of Selected Elements and Oxidation State of Iron in Atherosclerotic Plaques of ApoE/LDLR-Double Knockout Mice Subjected to Pharmacological and Dietary Treatments* – HASYLAB/DESY, Hamburg, Germany (no. I-20090125; 09/2009-03/2010)

- *FTIR Imaging of Atherosclerotic Plaques of ApoE/LDLR-Double Knockout Mice Subjected to Pharmacological and Dietary Treatments* – Synchrotron SOLEIL, Gif-sur-Yvette Cedex, France (no. 20090626; 03/2010-09/2010) – **co-author**
- *μ -XANES and EXAFS on Cancer Tissues* – HASYLAB/DESY, Hamburg, Germany (no. II-20042079EC; 01/2007-12/2007)

OTHERS

- *Determination of Zinc Content in Samples of A549 and CHO Cells Exposed to Various Concentrations and Forms of Nanometric Zinc Oxide by Means of PIXE Method* Central Institute of Labor Protection – National Research Institute, Warsaw, Poland (03/2012-09/2012)
- *Trace elements and Methyl Mercury in Scallop (IAEA-452) IAEA-MEL Intercomparison Exercise* – International Atomic Energy Agency, Vienna, Austria (2009)
- *The Study of Selected Indicators of Antioxidation System in Competent and Incompetent Parts of Veins, and Blood Samples of Patients with Chronic Venous Disease of Lower Limbs* – Department of Radioligand, Pharmacy Faculty, Medical College, Jagiellonian University, Kraków, Poland (UJ WL/425/P/F; 2008-2009)
- *Trace Elements in Standard Reference Material INCT-CF-3 (Corn flour) and INCT-SBF-4 (Soya flour) Intercomparison Exercise* – Institute of Nuclear Chemistry and Technology, Warsaw, Poland (2008)
- *Trace Elements in Standard Reference Material 1646a (Estuarine Sediment) Intercomparison Exercise* – National Institute of Standards and Technology, Gaithersburg, MD, USA (2007)
- *Trace Elements in Standard Reference Material 2702 (Inorganics in Marine Sediment) Intercomparison Exercise* – National Institute of Standards and Technology, Gaithersburg, MD, USA (2007)
- *Effect of Vanadium Complexes Supplementation on V, Fe, Cu, Zn, Mn, Ca and K Concentration in STZ Diabetic Rats' Tissues* – Department of Food Chemistry and Nutrition, Medical College Jagiellonian University, Kraków, Poland (UJ WL\259\P\F 2006-2007)
- *Trace Elements and Methyl Mercury in Sediment (IAEA-158) IAEA-MEL Intercomparison Exercise* – International Atomic Energy Agency, Vienna, Austria (2006)

ORAL PRESENTATIONS

INVITED

- 11/2017 X-ray spectroscopic studies of FeMo and FeV cofactor of Nitrogenase enzyme
- 11/2017 Spectroscopic methods supported by statistical analysis in studying atherosclerotic plaques – *seminar STATSOFT Poland, Warsaw, Poland*
- *11/2016* X-ray spectroscopic studies of the biological dinitrogen reduction – towards the electronic structure of nitrogenase enzyme – *seminar of the Polish synchrotron radiation facility SOLARIS, Kraków, Poland*
- *11/2016* In search of Nature-inspired catalytic-systems: lessons from X-ray spectroscopic studies - *seminar of The Henryk Niewodniczanski Institute of Nuclear Physics Polish Academy of Sciences, Kraków, Poland*
- *09/2015* The role of synchrotron radiation in studying the electronic structure of nitrogenase enzyme – *XLIII General Meeting of the Polish Physical Society, Kielce, Poland*
- *04/2013* Effect of AVE 0991 Treatment on Elemental and (Bio)molecular Content in Atherosclerotic Plaques of ApoE-Knockout Mice – Microspectroscopic Studies – *seminar of Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*
- *01/2013* The Use of Spectroscopic Methods in the Study of Biological Systems – Atherosclerotic Case Study *seminar of the Department of Structural Research, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*
- *12/2012* The Application of μ-XRF and μ-FTIR Imaging to Atherosclerotic Plaques – Technical and Data Analysis Approach *The Influence of Young Scientists on the Achievements of Polish Science, Kraków, Poland (in Polish)*

CONFERENCE TALKS

- *07/2017* Insights into the Magnetic Coupling of Molecular Iron Complexes with Relevance to FeMoco and FeVco Actice Sites of Nitrogenase, *Gordon Research Seminar and Conference "X-ray Science", Easton (Boston), USA*
- *06/2016* Fe X-ray Absorption and Magnetic Circular Dichroism Studies on FeMo cofactor of Nitrogenase and Related Models *The 13th International School and Symposium on Synchrotron Radiation in Natural Science, Ustron, Poland*
- *08/2015* Insights into the electronic structure of iron atoms in FeMo cofactor of nitrogenase and related models – *16th International Conference on X-ray Absorption Fine Structure, Karlsruhe, Germany*
- *06/2014* Spectroscopic Insights into Nitrogenase Structure *The 12th International School and Symposium on Synchrotron Radiation in Natural Science, Warszawa, Poland*
- *05/2012* The Effect of AVE 0991-Angiotensin-(1-7) Receptor Agonist Supplementation on the Elemental and Chemical composition of atherosclerotic plaques in apoE-knockout mice *The 11th International School and Symposium on Synchrotron Radiation in Natural Science, Kraków-Tyniec, Poland*
- *05/2011* The Investigation of ApoE/LDLR-Double Knockout Mice Plaques by Means of μ-FTIR Spectroscopy *XLVI Zakopane School of Physics, Breaking Frontiers: Submicron Structures in Physics and Biology, Zakopane, Poland*

SEMINARS

- *02/2016* L-edge X-ray Absorption Spectroscopy and X-ray Magnetic Circular Dichroim Studies on Fe-S Model Complexes of Nitrogenase – - *seminar of Department of Molecular Theory and Spectroscopy, Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*
- *01/2015* X-ray Spectroscopy as a Tool to Study the Electronic Structure of Nitrogenase – Past, Present, Future - *seminar of Department of Molecular Theory and Spectroscopy, Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*
- *01/2014* Towards Electronic Structure of Nitrogenase – an Experimental Approach - *seminar of Department of Molecular Theory and Spectroscopy, Max Planck Institute for Chemical Energy Conversion, Mülheim an der Ruhr, Germany*
- *10/2012* Spectroscopic Methods in the Study of Complex Systems *seminar of the Division of Applied Physics and Interdisciplinary Studies, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*
- *01/2012* The Effect of AVE 0991-Angiotensin-(1-7) Receptor Agonist on the Content and Structure of Proteins and Lipids in Atherosclerotic Mice *joint seminar of the Department of Applied Physics and Department of Material Science, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*
- *03/2011* The Use of FTIR Microspetroscopy to Study the Chemical Composition of Atherosclerotic Plaques in ApoE-LDLR Mice Model *joint seminar of the Department of Applied Spectroscopy and Department of Material Science, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*
- *03/2010* Trace Elements Analysis in Atherosclerotic Plaques by Means of Synchrotron Radiation Induced X-ray Microspectroscopy *joint seminar of the Department of Applied Spectroscopy and Department of Material Science, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*
- *03/2010* How Physicists See a Tissue – the Elemental Composition of Atherosclerotic Plaques in ApoE-LDLR Mice Model *seminar of the Division of Applied Physics and Interdisciplinary Studies, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*
- *11/2008* Infrared Spectroscopy as a Non-Invasive Method for Tissue Analysis *joint seminar of the Department of Applied Spectroscopy and Department of Material Science, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*
- *05/2007* Trace Elements Analysis in Diabetic Rats' Tissues by Means of Proton Induced X-ray Emission *seminar of the Department of Applied Spectroscopy, Institute of Nuclear Physics PAN, Kraków, Poland (in Polish)*

POSTER PRESENTATIONS

- *01/2018* Insights into Magnetic Coupling of Iron and Heterometals of FeMo and FeV Cofactors of Nitrogenase Enzyme *European XFEL Users' Meeting 2018 DESY Photon Science Users' Meeting 2017, Hamburg, Germany*
- 07/2017 Insights into Magnetic Coupling of Iron and Heterometals of Molecular Model Complexes Related to FeMo and FeV Cofactors of Nitrogenase Enzyme *Gordon Research Conference "X-ray Science", Easton (Boston), USA*
- 01/2017 X-ray Spectroscopic Studies of Iron-Sulfur Complexes Related to Nitrogenase Enzyme *European XFEL Users' Meeting 2017 DESY Photon Science Users' Meeting 2017, Hamburg, Germany*
- *01/2016* Iron Oxidation State Distribution in Structural Models of Nitrogenase Enzyme - XAS and XMCD studies *European XFEL Users' Meeting 2016 DESY Photon Science Users' Meeting 2016, Hamburg, Germany*
- *01/2016* X-ray Spectroscopic Studies on [2Fe-2S] Clusters - Relevance to the Electronic Structure of Nitrogenase Enzyme *European XFEL Users' Meeting 2015 DESY Photon Science Users' Meeting 2015, Hamburg, Germany*
- *01/2016* Fe X-ray Spectroscopic Studies of FeMo Cofactor of Nitrogenase and Related Models *SOLEIL Users' Meeting 2016, Palaiseau, France*
- *10/2015* Investigation of the electronic structure of iron atoms in nitrogenase enzyme by means of x-ray spectroscopy *19th International Congress on Nitrogen Fixation, Pacific Grove, California, USA*
- *09/2015* Insights into the electronic structure of iron atoms in FeMo cofactor in Nitrogenase *via* X-ray Spectroscopy *Summer School: "Methods in Molecular Energy Research: Theory and Spectroscopy", Gelsenkirchen, Germany*
- 01/2015 X-ray Absorption & X-ray Magnetic Circular Dichroism Studies on FeMo Cofactor in Nitrogenase and Related Models *European XFEL Users' Meeting 2015 DESY Photon Science Users' Meeting 2015, Hamburg, Germany*
- 01/2015 A close look at dose: towards L-edge XAS spectral uniformity, dose quantification and prediction of metal ion photoreduction *European XFEL Users' Meeting 2015DESY Photon Science Users' Meeting 2015, Hamburg, Germany*
- 01/2015 Recent Spectroscopic Insights into the Electronic Structure of FeMo Cofactor in Nitrogenase *"From PICO to FEMTO" Workshop, Berlin, Germany*
- 12/2014 A close look at dose: towards L-edge XAS spectral uniformity, dose quantification and prediction of metal ion photoreduction *"Tender X-ray" Workshop, Berlin, Germany*
- 12/2014 Recent Spectroscopic Insights into the Electronic Structure of Iron Atoms in the Nitrogenase Enzyme *"Tender X-ray" Workshop, Berlin, Germany*
- 09/2014 Fe X-ray Absorption Spectroscopy of FeMo cofactor of Nitrogenase *Summer School: "Methods in Molecular Energy Research: Theory and Spectroscopy", Gelsenkirchen, Germany*
- 01/2014 X-ray Spectroscopy of Nitrogen Reducing Enzymes *DESY Photon Science Users' Meeting & XFEL Users' Meeting 2014, DESY, Hamburg, Germany*
- 01/2013 Elemental and Chemical Composition of Atherosclerotic Plaques of Mice Subjected to Low Carbohydrate High Protein Diet, Analyzed by Microspectroscopic Methods *DESY Photon Science Users' Meeting & XFEL Users' Meeting 2013, DESY, Hamburg, Germany*
- *05/2012* First Approach to Studying the Effect of Ionizing Radiation in Single Cells using FTIR Microspectroscopy *The 11th International School and Symposium on Synchrotron Radiation in Natural Science, Kraków-Tyniec, Poland*
- *01/2012* Trace Elements and Chemical Composition of Atherosclerotic Plaques of ApoE/LDLR-Double Knockout Mice by Means of Synchrotron Radiation Based Spectroscopic Methods *European XFEL and HASYLAB Users' Meeting 2012 – Research with Synchrotron Radiation and FELs, DESY, Hamburg, Germany*
- *10/2011* μ-FTIR and μ-XRF Synchrotron-Based Spectroscopic Studies of Atherosclerotic Plaques of ApoE-Knockout Mice *Workshop on FT-IR Spectroscopy in Microbiological and Medical Diagnostic – FTIR biannual meeting, RKI, Berlin, Germany*

- *10/2011* Effect of Linoleic Acid Isomers from Vegetable Oils on Elemental Distribution in Atherosclerotic Plaques of ApoE/LDLR-Double Knockout Mice *The 3rd ANKA/KNMF Joint Users' Meeting, KIT, Karlsruhe, Germany*
- *01/2011* Atherosclerotic Plaques Imaging by Micro-XRF Spectroscopy and Histological Staining *European XFEL and HASYLAB Users' Meeting 2011 – Research with Synchrotron Radiation and FELs, DESY, Hamburg, Germany*
- *06/2010* Distribution of Selected Elements in Atherosclerotic Plaques of ApoE/LDLR-Double Knockout Mice Subjected to Dietary and Pharmacological Treatments *10th International School and Symposium on Synchrotron Radiation in Natural Science, Szklarska Poręba, Poland*
- *05/2010* Cells Irradiation Complementary Lines at IFJ PAN *COST MP0601 Meeting: Short Wavelength Laboratory Sources, Kraków, Poland*
- *03/2010* The X-ray Microbeam Facility in Kraków – Computed Microtomography and Cells Irradiation *Bioimaging workshop on PETRA III, DESY, Hamburg, Germany*
- *01/2010* Distribution of Selected Elements in Atherosclerotic Plaques of ApoE/LDLR-Double Knockout Mice Subjected to Pharmacological and Dietary Treatments *European XFEL and HASYLAB Users' Meeting 2010, DESY, Hamburg, Germany*
- *10/2009* Preliminary FTIR Analysis of Cancerous Cells *Workshop on FT-IR Spectroscopy in Microbiological and Medical Diagnostic – FTIR biannual meeting, RKI, Berlin, Germany*
- *05/2009* Analysis of Zn and Cu Concentration in Chronic Venous Disease by PIXE Method *XLIV Zakopane School of Physics, International Symposium, Breaking Frontiers: Submicron Structures in Physics and Biology, Zakopane, Poland*
- *05/2008* Investigation of Trace Element Concentration in Diabetic Rats' Tissues *XLII Zakopane School of Physics, International Symposium, Breaking Frontiers: Submicron Structures in Physics and Biology, Zakopane, Poland*

CONFERENCE CONTRIBUTIONS

- *01/2017* Advanced X-ray Spectroscopic Studies of Nitrogenase, S.DeBeer, J. Kowalska *Metals in Biology, Gordon Research Conference, Ventura, CA, USA*
- *06/2016* X-ray spectroscopic studies of biological dinitrogen reduction, S.DeBeer, R. Bjornsson, J. Kowalska, J.A. Rees, B. Van Kuiken, A. Hahn, *Metallocofactors, Gordon Research Conference, Easton, MA, USA*
- *08/2015* X-ray emission spectroscopic studies of biological catalysis S. DeBeer, J. Kowalska, R. Bjornsson, J.A. Rees, *16th International Conference on X-ray Absorption Fine Structure, Karlsruhe, Germany*
- *07/2015* X-ray spectroscopic studies of biological dinitrogen reduction in molybdenum and vanadium nitrogenases S. DeBeer, R. Bjornsson, J. Kowalska, J. A. Rees, *17th International Conference on Biological Inorganic Chemistry (ICBIC), Beijing, China*
- *01/2012* Imaging of Cells and Tissues by Microscopy Combined with SR-XRF, XANES and FTIR Techniques W. M. Kwiatek, J. Kowalska, E. Lipiec, J. Czapla *New Frontiers in Structural Biology Poznań, Poland*
- *09/2011* Cellular Membrane and DNA Damage Induced by Proton Radiation in Single PC-3 Cells E. Lipiec, J. Kowalska, D. Moss, A. Wiecheć, and W. M. Kwiatek *14th International Congress of Radiation Research Warszawa, Poland – poster*
- *05/2011* Iron Content (PIXE) in Competent and Incompetent Perforating Veins is Related to the Vein Wall Morphology and Tissue Antioxidant Enzyme W. Krzyściak, J. Kowalska, M. Kózka, W. M. Kwiatek, J. Hartwich *XXI International Symposium on Bioelectrochemistry and Bioenergetics of the Bioelectrochemical Society BES and International Spring School BES: Novel Techniques for Nanobiological Sciences Kraków, Poland*
- *05/2011* Infrared Spectroscopy in Molecular Study of the Piezoelectric Effect in Pig Shine Bone E. Lipiec, J. Kowalska, A. Wiecheć, P. M. Zieliński, W. M. Kwiatek, M. Iwaniec *XLVI Zakopane School of Physics, Breaking Frontiers: Submicron Structures in Physics and Biology, Zakopane, Poland – poster*

- *05/2011* FTIR Microspectroscopy Studies of DNA Induced by Proton Microbeam in Single PC-3 Cells E. Lipiec, J. Kowalska, J. Lekki, A. Wiecheć, W.M. Kwiatek *XLVI Zakopane School of Physics, Breaking Frontiers: Submicron Structures in Physics and Biology, Zakopane, Poland – poster*
- *12/2010* Monitoring of Oxidative Stress in Type 2 Diabetes Mellitus W. Krzyściak, M. Krośniak, J. Kowalska *19th International Symposium "Molecular and Physiological Aspects of Regulatory Processes of the Organism", Kraków, Poland – poster*
- *03/2008* The Influence of Supplementation with Vanadium Complexes on Zinc Content in Pancreas, Spleen and Kidney in Rats with Diabetes Type 1 Model J. Kowalska, M. Krośniak, R. Gryboś, W. M. Kwiatek *9th School of cosmetology and analytical chemistry: Novel methods of sample preparation I trace elements analysis (in Polish) , Poznań, Poland – poster*
- *10/2007* Influence of Vanadium Complexes on Vanadium Distribution in Rats' Tissues M. Krośniak, J. Kowalska, E. M. Dutkiewicz, R. Gryboś, W. M. Kwiatek *International Conference on Chemistry and the Environment (in Polish), Toruń Poland – poster*

ATTENDANCE AT SELECTED CONFERENCES SCIENTIFIC SCHOOLS AND WORKSHOPS

- 08/2017 Gordon Research Seminar and Conference "X-ray Science", Easton (Boston), USA
- 01/2016 11th SOLEIL Users' Meeting, Paris, France
- 10/2015 19th Congress on Nitrogren Fixation, Pacific Grove, California, USA
- 09/2015 43rd Meeting of the Polish Physical Society, Kielce, Poland
- *08/2015* 16th International Conference on X-ray Absorption Fine Structure, Karlsruhe, Germany
- *06-07/2015* 65th Lindau Nobel Prize Laureates Meeting: Interdisciplinary, Lindau, Germany
- 06/2015 XES Workshop: Hands-on Workshop on Methods of X-ray Emission Spectroscopies, Ithaca New York, USA
- 01/2015 From Pico to Femto Workshop, Berlin, Germany
- 12/2014 Tender X-ray Workshop, Berlin, Germany
- 07/2014 Catalytic Systems for Chemical Energy Conversion Symposium, Mülheim an der Ruhr, Germany
- *06/2014* The 12th International School and Symposium on Synchrotron Radiation in Natural Science, Warszawa, Poland
- *09/2013* Methods in Molecular Energy Research: Theory and Spectroscopy – Summer School, Essen, Germany
- *01/2013*, *01/2014*, *01/2015*, *01/2016*, *01/2017* European XFEL and DESY Photon Science Users' Meeting 2013, DESY, Hamburg, Germany
- *05/2012* The 11th International School and Symposium on Synchrotron Radiation in Natural Science, Kraków-Tyniec, Poland
- *01/2012* X-ray Nano-Imaging of Biological and Chemical Systems – workshop DESY, Hamburg, Germany
- *01/2010*, *01/2011*, *01/2012* European XFEL and HASYLAB Users' Meeting 2010 Research with Synchrotron Radiation and FELs DESY, Hamburg, Germany
- *06/2010* 10th International School and Symposium on Synchrotron Radiation in Natural Science Szklarska Poręba, Poland
- *05/2010* COST MP0601 Meeting Short Wavelength Laboratory Sources Kraków, Poland
- *03/2010* Bio-imaging workshop on PETRA III DESY, Hamburg, Germany
- *09/2009* VIII National Symposium of Synchrotron Radiation Users' Podlesice, Poland
- *10/2009*, *10/2011*, *10/2013* Workshop on FT-IR Spectroscopy in Microbiological and Medical Diagnostics RKI, Berlin, Germany
- *10/2008* Workshop on X-ray absorption spectroscopy and advanced XAS techniques PSI, Villigen, Switzerland

- *08/2008* The International Conference of Physics Students AGH, Kraków, Poland
- *06/2008* DASIM Summer School on Synchrotron Infrared Microspectroscopy ANKA, Karlsruhe, Germany
- *05/2008*, *05/2009*, *05/2011* XLII, XLIV, XLVI Zakopane School of Physics, Breaking Frontiers: Submicron Structures in Physics and Biology Zakopane, Poland
- *02/2008* DASIM (Diagnostic Applications of Synchrotron Infrared Microspectroscopy) – Joint Single Cell Spectroscopy/Raman Working Group Meeting IFJ PAN, Kraków, Poland
- *01/2008* HASYLAB Users' Meeting 2008 Research with Synchrotron Radiation DESY, Hamburg, Germany
- *01/2008* Hard X-ray Micro/Nano-Probe (P06) at PETRA III – first users' workshop DESY, Hamburg, Germany
- *05/2007*; *06/2009*; *03/2010*; *10/2011*; *10/2012* Applications of statistics and data mining in research, StatSoft Workshop Kraków & Warszawa, Poland
- *10/2006* Workshop on the application of Extended X-ray Absorption Fine Structure IF PAN, Warszawa, Poland

TEACHING EXPERIENCE

- 09/2014; 09/2015, 09/2016, 09/2017 tutoring Advanced X-ray Emission and Absorption Spectroscopy during Summer School: "Methods in Molecular Energy Research: Theory and Spectroscopy" Gelsenkirchen, Germany
- 09/2014 participation in the Open House Day of MPI for Chemical Energy Conversion
- *2002-2012* private tuition of physics, mathematics and chemistry for high school and undergraduate students
- *09/2011* supervising an internship for undergraduate students of Engineering in Biomedicine
- *07-08/2008* & *07/2009* supervising an internship for undergraduate physics students from University of Science and Technology and Jagiellonian University
- *03/2008* supervising a practice for high-school student from Netherlands (Students Cracow – Sint Michielsgestel Exchange Programme)
- *2009-2012* several popular science lectures given for high school students
- *09/2008*, *09/2009*, *09/2010*, *09/2011*, *09/2012* involved in the organization and participation in the Lesser Poland Night of Researchers

COMMITTEES OF TRUST

1) Member of the Organization Committee of:

- XLII Zakopane School of Physics, International Symposium, Breaking Frontiers: Submicron Structures in Physics and Biology 2008, Zakopane, Poland;
- The International Conference of Physics Students 2008, Kraków, Poland;
- XLIV Zakopane School of Physics, International Symposium, Breaking Frontiers: Submicron Structures in Physics and Biology 2009 Zakopane, Poland;
- COST MP0601 Meeting Short Wavelength Laboratory Sources 2010, Kraków, Poland;
- Changes in legislation concerning doctoral education 2013 – chairman and initiator.

2) Representative of the PhD Students' of the International PhD Studies, Institute of Nuclear Physics Polish Academy of Sciences, Kraków, Poland (2010-2012)

3) Representative of the PhD Students' of the Polish Academy of Sciences, Poland (2009-2012)

4) Assistant to the Spokesman of the Institute of Nuclear Physics Polish Academy of Sciences, Kraków, Poland (2011-2012)

JOURNALS' REVIEWER

- Journal of Biological Inorganic Chemistry
- The Journal of Physical Chemistry
- Acta Physica Polonica A

VOLUNTARY SERVICE

- *2006-2008* private tuition for children at 1st Orphanage in Kraków, Poland
- *2005-2006* Clown Doctors – The Humour Foundation, childrens' care at The Prokocim Hospital in Kraków, Poland

REFEREES

Prof. Dr. Serena DeBeer
Max Planck Institute for Chemical Energy Conversion
Stiftstrasse 34-36
45470 Mülheim an der Ruhr
Germany
E-Mail: Serena.DeBeer@cec.mpg.de
Phone: +49 (0) 208 306 3605

Prof. Dr. Bayden R. Wood
Monash Univeristy, Centre of Biospectroscopy
1 Raunforest Walk
Calyton 3800, Victoria
Australia
E-mail: Bayden.Wood@monash.edu
Phone: +61 3 9905 5721

Dr. Matti van Schooneveld
Inorganic Chemistry and Catalysis, University of Utrecht
Universiteitsweg 99
3584 CG Utrecht
The Netherlands
E-mail: m.m.vanschooneveld@gmail.com
Phone: +31 (0) 624 466 522

Prof. Dr. hab. Andrzej Horzela
Institute of Nuclear Physics Polish Academy of Sciences
ul. Radzikowskiego 152
31342 Krakow
Poland
E-Mail. Andrzej.Horzela@ifj.edu.pl
Phone: +48 (0) 12 662 8383

Dr. Mariusz Gajda
Collegium Medicum, Jagiellonian University
Kopernika 7
31034 Krakow
Poland
E-mail: mmgajda@cyf-kr.edu.pl
Phone: +48 (0) 12 422 7027