CV

Personal details:

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Educational background:

2018	**Associate professor** AGH University of Science and Technology in Kraków, Faculty of Geology, Geophysics and Environmental Protection.
2015	**Habilitation in Earth Sciences**, discipline: geology. AGH University of Science and Technology in Kraków, Faculty of Geology, Geophysics and Environmental Protection. Title of achievement: *Synthesis, characterization and sorption properties of hybrid mineral nanomaterials derived from kaolin group minerals.*
2010	**Ph.D. in Earth Sciences**, discipline: geology. AGH University of Science and Technology in Kraków, Faculty of Geology, Geophysics and Environmental Protection. Ph.D. thesis: *Minerals from kaolin group as precursors of mineral nanotubes*. Supervisor: prof. Krzysztof Bahranowski
2008	**Postgraduate certificate** *Analytical chemistry in industry and environmental protection*. AGH University of Science and Technology in Kraków, Faculty of Materials Science and Ceramics (WIMiC).
2006	**M.Sc. title** AGH University of Science and Technology in Kraków, Faculty of Geology, Geophysics and Environmental Protection. Branch: Mining and Geology, specialization: Applied Mineralogy and Geochemistry. M.Sc. thesis: *Effciency of cadmium phosphates crystallization depending on the form of phosphates.* Supervisor: Tomasz Bajda, Ph.D.

Research interest:

- Chemical and mineralogical characterization of layered (clay minerals, LDH) and framework minerals (zeolites).
- Modification of minerals in order to obtain functional mineral materials e.g. sorbents, catalysts and polymer-composites.
- The influence of intercalation and grafting processes on the structure, textural parameters and morphology of minerals.
- Determination of sorption properties of mineral-based materials derived mainly from layered minerals and zeolites.
- Synthesis, structural and mechanical properties of clay-polymer nanocomposites.
- Pillared clays - synthesis, characterization and catalytic applications.
- Photoactive nanomaterials based on clay minerals.
- Efficiency and mechanisms of heavy metals immobilization using phosphates (in situ phosphate induced metal stabilization) as an alternative technique for soil remediation.
- Chemistry, mineralogy and thermodynamic stability of heavy metal phosphates.

Research grants

2021-2018	**Grant NCN OPUS 14 -** Hydrotalcite-like mineral composites obtained by transformation of selected minerals as hybrid sorbents for the removal of anions from multi-element aqueous solutions (**Principal Investigator**).
2020-2017	**Grant NCN/NCBR TANGO 2 -** Remediation technology of aquatic environments polluted with anionic forms of elements with the use of functionalized kaolinite sorbents (**Principal Investigator**).
2017-2018	**Innovation Incubator+** - Production and application of a filter containing functionalized sorbent for the removal of volatile organic compounds (**co-investigator**) (WPP/1/14/2017)
2018 - 2015	**Grant NCN OPUS (2014/13/B/ST10/01326) -** Photoactive hybrid nanomaterials derived from layered minerals (**Principal Investigator**).
2014 - 2011	**Grant NCN SONATA (2011/01/D/ST10/06814) -** Sorption properties of hybrid mineral nanomaterials derived from kaolin group minerals (**Principal Investigator**).
2014 - 2011	**Grant NCBiR I PBS** - The preparation and utilization of zeolite-based sorbents of petroleum compounds (**Co-investigator**) Principal Investigator: Prof. Wojciech Franus.
2014- 2011	**Grant NCN HARMONIA** - Precise determination of solubility constants in 5 - 65ºC temperature range and DH_f, DG_f, DS for apatites of Ca-Pb-P-As-OH-Cl type (**Co-investigator**) Principal Investigator: Prof. Maciej Manecki
2011 - 2010	**Grant MNiSW (IP2010 025070)** - Minerals from the kaolin group as precursors of hybrid organo-mineral materials (**Principal Investigator**)
2012 - 2009	**Grant MNiSW** (**N N307 315336) -** Layered minerals as precursors of mesoporous nanostructures (**Co-investigator**). Principal Investigator: prof. Krzysztof Bahranowski.

Scientific experience:

Conferences / lectures / workshops / seminars

2019.12.11-14	*University of Kentucky, Lexington, KY, USA,* Fulbright Visiting Scholar Enrichment Seminar "Combating Addiction".
2019.10.28	*Department of Soil and Crop Sciences, Texas A&M University* (College Station, TX, USA) Organo-functionalized kaolin group minerals: Synthesis, structure and adsorption properties (**invited lecture**).
2019.09.04	*Department of Soil and Crop Sciences, Texas A&M University* (College Station, TX, USA) Functional Mineral-based Structures: Towards Applications in Industry and Environmental Protection (**invited lecture**).
2019.08.19	*Soil Critique Meeting* (College Station, TX, USA) Mineral-based Architectures Group: Towards Materials for the Environment and Industry (**invited lecture**).
2019.08.12 – 2020.02.12	**Fulbright Senior Award** – visiting scholar at Texas A&M University (College Station, TX, USA)
2019.09.16-17	*3rd Mineral-based sorbents conference, Jerzmanowice* (*not present)* **Co-author of 2 oral presentations**: Characterization of hydrotalcite/pyroaurite-like anion adsorbents derived from magnesite and dolomite Enhanced sulphate removal by precipitation and adsorption using $Ca(OH)_2$ and synthetic layered double hydroxide: acid mine drainage case study
2019.09.11-13	*9th European Conference on Mineralogy and Spectroscopy,* Prague, Czech Republic *(not present)* **Co-author of 2 oral presentations**: The effect of M(II)/M(III) molar ratio on the LDH structure derived from chemicals and minerals: a spectroscopic study using FTIR, Raman and XPS. Halloysite-supported iron oxide particles for As(V) removal: adsorption mechanism investigation by the XPS and Mössbauer spectroscopy
2019.06.30 – 2019.07.06	*EuroClay 2019*, Paris, France. **Poster:** Halloysite-LDH heterostructured materials: performance in removal of selected anions from aqueous solutions **Co-author of 2 poster presentations**: Physico-chemical studies of Mg/Fe and Mg/Al Layered Double Hydroxides obtained via transformation of minerals Effectiveness of As(V) removal from wastewaters by layered double hydroxides impregnated with Fe oxide
2019.04.03-05	*XX International Conference of Young Geologist, Herlany, Slovakia.* **Co-author of 3 oral presentations**: Photoactive hybrid nanomaterials derived from layered minerals Mg/Al LDH formation via transformation of minerals through the $AlCl_3$ hydrolysis Enhanced removal of Pb(II) and Cd(II) by kaolin impregnated with zerovalent iron particles

2019.04.22-26	**Research stay** at the Faculty of Technology, Chemical Process Engineering Group, University of Oulu, Finland. Analyses and interpretation of results using X-ray photoelectron spectroscopy.
2018.09.17-21	*9th Mid-European Clay Conference: Zagreb, Croatia* **Oral presentation:** Removal of chromates and arsenates by halloysite-LDH composites. **Co-author of 2 oral presentations:** Mg−Fe LDH derived from magnesite and hematite and its affinity towards sulphates Application of halloysite impregnated with Fe^0 particles for acid mine drainage water treatment **Co-author of poster**: Highly ordered α-zirconium phosphate intercalate with p-aminoazobenzene: structure refinement and interaction with UV radiation revealed by molecular modelling
2018.06.11-14	*55th annual meeting The Clay Minerals Society, University of Illinois at Urbana-Champaign (Illinois, USA)* **Oral presentation:** Halloysite-based hybrid composites with synthetic LDH and their affinity to remove anions **Co-author of 2 oral presentations:** Maghemite particles supported on halloysite as magnetically responsive composites for effcient As(V) removal Monitoring the azobenzene isomerization in layered intercalation compounds using the infrared spectroscopy **Co-author of poster:** The quality of Mg−Fe layered double hydroxide derived from magnesite and hematite
2017.11.20-24	**Research stay** at the Faculty of Technology, Chemical Process Engineering Group, University of Oulu, Finland. Analyses and interpretation of results using X-ray photoelectron spectroscopy.
2017.09.18-19	*3rd Mineral-based sorbents conference, Kraków.* **Co-author of 2 oral presentations:** Efficiency of Pb(II) and Mo(VI) removal by kaolinite impregnated with zero-valent iron particles. Halloysite composites with Fe_3O_4: the effect of impregnation on Cd(II) and Pb(II) removal from aqueous solutions. **Session chairman**
2017.07.17-21	*XVI International Clay Conference, Granada, Spain.* **Poster presentation:** Insight into the structure of kaolinite and layered zirconium phosphate intercalated with photoactive molecules **Co-author of poster:** Kanemite as a precursor for the synthesis of photoactive layered materials **Co-author of 2 oral presentations:** UV triggered basal spacing shifts in smectite intercalates Layered minerals as supports for magnetite nanoparticles and their use for aqueous As(V) removal.
2017.06.2-7	*54rd Annual Meeting of the Clay Minerals Society (Living Clays), Edmonton, Canada.* **Oral presentation:** The Synthesis Approach for the Intercalation of Photoactive Molecules into Kaolinite and Layered Zirconium Phosphate **Co-author of 2 posters:**

	Monitoring and understanding the UV induced structural changes for functionalized smectites and kanemite The LDH-based magnetic nanocomposites for the removal of As(V) and Mo(VI) anionic species.
2017.03.29-2017.04.02	*XVII International Conference of Young Geologist, Dobczyce, Poland.* **Co-author of 3 oral presentations:** Efficiency of selected anions removal by kaolinite impregnated with iron-bearing nanoparticles The novel magnetic adsorbents doped with Fe_3O_4 nanoparticles for As(V) and Cr(VI) removal Photoactivity of organically modified layered minerals **Session chairman**
2017.01.27	**Invited lecture** during the meeting of Committee of Mineralogical Sciences, Kraków, Poland: Functional mineral-based materials in nanotechnology (in Polish).
2016.12.02	*Meeting of Polish Clay Group, Kraków, Poland.* **Co-author of oral presentation:** Photoactive hybrid nanomaterials based of layered minerals
2016.10.05	**Inaugural lecture** for the start of new academic year: Natural and synthetic minerals in nanotechnology (in Polish), Kraków, Poland
2016.07.4-8	*8th Mid-European Clay Conference, Koszyce, Slovakia.* **Co-author of 2 posters:** Molecular dynamics simulations of azobenzene intercalates in smectites Structural differences of kaolinite and montmorillonite co-intercalated with ammonium salts and azobenzene The effect of experimental factors on alkali activation of halloysite. **Session chairman:** Modifications and synthesis of clays.
2016.06.5-8	*53rd Annual Meeting of the Clay Minerals Society (Resurgent Clays), Atlanta, USA.* **Co-author of oral presentation:** Photoactivity of azobenzene intercalated in organo-smectites **Poster:** Kaolinite co-intercalated with benzylalkylammonium salts and azobenzene: structural features and photoswitching effect
2016.04.14-16	*XVII International Conference of Young Geologists, Svaty Jur, Slovakia.* **Co-author of 2 oral presentations:** Na-montmorillonite modified with ammonium salts and azobenzene as a photoactive nanomaterial The influence of alkali concentration and temperature on chemical activation of halloysite
2015.10.09	**Invited lecture:** Layered minerals as precursors of photoactive materials. Faculty of Physics, Warsaw University.
2015.09.21-23	*2nd Mineral-based Sorbents Conference, Kraków* **Co-author of 2 oral presentations:** A comparative study of raw, calcined and acid activated halloysite sorption capacity towards Pb(II), Cd(II), Zn(II) and As(V) Organo-kaolinite as an adsorbent of Cr(III) and Ni(II) ions **Co-author of poster presentation:** Structural characterization of smectite group minerals intercalated with hexadecyltrimethylammonium bromide **Session chairman**

2015.07.5-10	*EuroClay 2015, Edinburgh, Scotland* **Co-author of oral presentation:** Structure and photoresponse of azobenzene-smectite intercalation compounds to UV radiation **Oral presentation:** Organo-kaolinite: 50 Å intercalation compound with azobenzene **Poster:** Raw, acid activated and calcined halloysite for metals and metalloids adsorption: sorption capacity and mechanisms **Co-author of poster:** Co-remediation method of nickel contaminated soil by halloysite and Indian mustard (*Brassica juncea* L.) **Session chairman**
2015.05.7-9	*XVI International Conference of Young Geologists, Herlany, Slovakia* **Co-author of 2 oral presentations** Preparation and characterization of azobenzene-smectite photoactive mineral nanomaterials A comparative study on the removal of Pb(II), Zn(II), Cd(II) and As(V) by natural, acid activated and calcinated halloysite
2014.09.16-19	*7-Mid-European Clay Conference, Dresden, Germany* **Co-author of oral presentation:** Sorption efficiency of selected metals on kaolinites grafted with aminoalcohols **Poster:** Removal of chromate, arsenate and phosphate oxyanions by halloysite from dunino deposit, Poland
2014.05.17-21	*51th Annual Meeting of the Clay Minerals Society, College Station, Texas, USA* **Invited lecture:** Organo-functionalized kaolin group minerals - synthesis, structure and properties **Co-author of poster:** Efficiency and mechanism of heavy metals sorption on grafted kaolinites of different structural order
2014.05.8-10	*XV International Conference of Young Geologists, Międzybrodzie Żywieckie, Poland* **Co-author of 4 oral presentations:** Improved copper sorption on grafted kaolinites of different structural order The kinetics of heavy metals immobilization by modified halloysite Competitive sorption of selected anions on modified halloysite Quantitative determination of ammonium salts in organo zeolites by infrared spectroscopy
2013.10.6-10	*50th Anniversary Annual Meeting of the Clay Minerals Society, Urbana-Champaign, IL, USA* **Oral presentation:** Equilibrium and kinetic study of heavy metals sorption on grafted halloysite **Poster:** Chromate and arsenate removal by kaolinite intercalated with ammonium salts

2013.10.4-5	*Workshop on Advances Applications of Synchrotron Radiation in Clay Science, Urbana-Champaign, IL, USA.*
2013.09.16-18	*1st Mineral-based Sorbents Conference, Kraków, Poland* **Oral presentation:** Kinetics of Cr(VI) sorption on raw and modified kaolin minerals **Co-author of oral presentation:** Sorption of BTX on organo-zeolite **Co-author of 2 posters:** Intercalates of kaolinite with ammonium salts and their ability to remove chromates from aqueous solution Sorption of cadmium on modified halloysite
2013.07.7-11	*XV International Clay Conference, Rio de Janeiro, Brazil* **Oral presentation:** Sorption of arsenate and phosphate on positively charged kaolinites **Poster:** Lead sorption on halloysite grafted with aminoalcohols
2013.04.4-6	*XIV International Conference of Young Geologists*, *Svätý Jur, Slovakia* - **Co-author of 2 oral presentations:** Halloysite-based material with improved cation sorption properties Intercalates of kaolinite with ammonium salts and their interaction with aqueous Cr(VI) ions
2012.11.23	*Meeting of Polish Clay Group, Kraków, Poland* **Oral presentation:** Immobilization and reduction of Cr(VI) in the interlayer of kaolin group minerals
2012.09.24-26	*The 2nd International Conference on Contemporary Problems of Geochemistry, Kielce, Poland* **Oral presentation:** Kaolinite-based sorbent of hexavalent chromium: sorption mechanism, pH effect and desorption behavior
2012.09.4-9	*6-Mid-European Clay Conference, Pruhonice, Czech Republic* **Oral presentation:** Modified kaolinites and halloysite with anion sorption properties **Poster:** Methoxy-kaolinite: A precursor for the intercalation of methylene blue and benzoic acid
2012.07.7-11	*49th Annual Meeting of the Clay Minerals Society, Golden, Colorado, USA* **Oral presentation:** Chromate sorption by functionalized kaolin group minerals
2012.04.26-28	*XIII International Conference of Young Geologists, Herlany, Slovakia* **Oral presentation:** Organic synthesis of positively charged kaolinites
2011.11.09	*Seminar in the Institute of Geological Sciences of Polish Academy of Sciences, Kraków, Poland.* **Oral presentation:** Kaolinite intercalates with benzylalkylammonium chlorides
2011.09.24-29	*48th Annual Meeting of the Clay Minerals Society, South Lake Tahoe, Nevada, USA* **Oral presentation:** Kaolinite intercalates with benzylalkylammonium chlorides

2011.07.9-19	*EMU School: Layered materials and their applications in advanced technologies*, *Rome, Italy.*
2011.06.26-07.01	*EuroClay Conference 2011, Antalya, Turkey* **Poster:** Influence of synthesis conditions on the formation of kaolinite-methanol complex
2011.04.28-30	*XII International Conference of Young Geologists, Kamienica, Poland.* **Co-author of 2 oral presentations:** Intercalation of dodecylamine into kaolinites of high structural order Methanol complexes with kaolin minerals of low structural order-IR study
2010.08.25-29	*5-Mid-European Clay Conference, Budapest, Hungary* **Oral presentation:** Nanotubular particles derived from kaolin group minerals – structural and textural examination
2010.06.8-10	*Trilateral Meeting on Clays (SEA-CSSJ-CMS) TMC, Seville, Spain* **Oral presentation:** Nanotubular kaolinite as an additive for preparation of polylactide/clay composites
2010.06.06	*Workshop on Materials & Clay Minerals, Madrid, Spain*
2009.09.18-19	*Meeting of Polish Clay Group, Kraków, Poland* **Oral presentation:** Aluminosilicate nanotubes derived from kaolin group minerals (in Polish)
2009.04.2-4	*X International Conference of Young Geologists, Herlany, Slovakia* **Oral presentation:** Nanotubes derived from kaolinites of different structural order
2008.09-22-27	*4th Mid-European Clay Conference, Zakopane, Poland* **Poster:** Aluminosilicate nanotubes derived from kaolin group minerals
2008.09.12-13	*2nd Central-European Mineralogical Conference, Szklarska Poręba, Poland.*
2008.09.10-11	*Powder Diffraction & Rietveld Refinement Methods Workshop, Szklarska Poręba, Poland.*
2008.04.3-6	*IX International Conference of PhD Students and Young scientists, Zawoja, Poland* **Oral presentation:** Removal of aqueous cadmium by hydroxylapatite and fluoroapatite
2008.01.21-23	*School on Synchrotron X-ray and IR Methods Focussing on Environmental Sciences - Forschungszentrum Karlsruhe, Germany.*
2007.08.12-17	*Nanoscopic Approaches in Earth and Planetary Sciences - 9th EMU School organized by European Mineralogical Union and Ludwig Maximilians University, Munich, Germany* **Poster:** Immobilization of aqueous cadmium by addition of phosphates
2007.06.1-3	*Geological Conference, Miękinia, Poland* **Oral presentation:** Solubility constant of cadmium phosphate $Cd_5H_2(PO_4)_4 \cdot 4H_2O$ for 20°C
2007.03-2-4	*VIII International Conference of PhD Students and Young scientists, Herlany, Slovakia* **Oral presentation:**

	Immobilization of aqueous cadmium by addition of phosphates
2006.04.26-28	*International Forum of Young Researchers: Topical issues of rational use of natural resources, Saint Petersburg, Russian Federation* – **Oral presentation:** Synthesis and characterization of Ca, Pb, Zn, Cu and Cd chlorapatites and Pb-Cd chlorapatites solid solutions
2005.12	*Electron Backscatter Diffraction in Material Sciences - workshop, Kraków, Poland*
2005.04.7-8	*VI International Conference of PhD Students and Young scientists, Miękinia-Herlany, Poland* **Oral presentation:** Synthesis and characterization of Ca, Pb, Zn, Cu and Cd chlorapatites

Teaching experience

- **Phase and chemical analysis in environmental protection**
  In Polish: Badania fazowe i chemiczne w ochronie środowiska
  (1st degree, 3rd year, OŚ) (2014 – now)
- **Chemistry**
  In Polish: Chemia *(1st degree, 1st year, OŚ)* (2010 – now)
- **Organic chemistry**
  In Polish: Chemia organiczna *(2nd degree, 1st year, specialization Mineral engineering, IŚ)* (2015 –)
- **Environmental chemistry**
  In Polish: Chemia środowiska *(1st degree, 2nd year, IŚ)* (2014 – now)
- **Geochemistry**
  In Polish: Geochemia *(1st degree, 3rd year, GG, IŚ)* (2006 – now)
- **Mineral Engineering**
  In Polish: Inżynieria Mineralna *(2nd degree, 2nd year, IŚ, OŚ)* (2013 – now)
- **Spectroscopic methods**
  In Polish: Metody spektroskopowe (as a part of courses: Analysis methods of minerals and rock and Structural studies methods) *(1st degree, 3rd year, GG, IŚ)* (2014 – now)
- **Minerals in nanotechnology**
  In Polish: Minerały w nanotechnologiach *(2nd degree, 2nd year, specialization Mineral engineering, IŚ)* (2015 –)
- **Mineral sorbents in environmental engineering**
  In Polish: Sorbenty mineralne w inżynierii środowiska *(2nd degree, 2nd year, specialization Mineral engineering, IŚ)* (2015 –)
- **Minerals catalysts**
  In Polish: Katalizatory mineralne *(2nd degree, 2nd year, specialization Mineral engineering, IŚ)* (2015 –)
- **Mineralogy**
  In Polish: Mineralogia *(1st degree, 2nd year, GG, IŚ)* (2010 – 2013)
- **Instrumental analytical methods**
  In Polish: Instrumentalne metody analityczne *(2nd degree, 2nd year, specialization Evaluation of environmental status, OŚ)* (2012)
- **Geology, mineralogy and petrography**
  In Polish: Geologia, mineralogia i petrografia *(1st degree, 2nd and 3rd year)*
  (2006 – 2010)

Achievements / awards

2019	Fulbright Senior Award – scholarship for research stay at the A&M Texas University (College Station, TX, USA)
2017	AGH Rector Award for individual scientific achievements
2016	AGH Rector Award for individual scientific achievements
2015	AGH Rector Award for individual scientific achievements
2014	AGH Rector Award for individual scientific achievements
2013	START Scholarship awarded by the Foundation for Polish Science, Warszawa, Poland
2013	AGH Rector Award for individual scientific achievements
2012	AGH Rector Award for individual scientific achievements
2011	3-year Scholarship for outstanding young scientists awarded by the Ministry of Science and Higher Education, Warsaw, Poland
2011	AGH Rector Award for individual scientific achievements
2010	PhD Scholarship awarded by the President of Krakow City, Poland
2009	PhD Scholarship awarded by Voivode of Little Poland, Krakow, Poland
2007	Sapere Auso scholarship awarded for research devoted to environmental protection, Krakow, Poland
2006	1st prize awarded at the International Conference of Young Researchers, Mining Institute, Saint Petersburg, Russia.
2004	3rd prize awarded at the XLV Student Scientific Conference, AGH UST, Krakow, Poland

Parametric summary of the scientific output

Citations (*Scopus*): **705**, without auto-citations: **596**
Hirsch index (*Scopus*): **16**

Citations (*Web of Science*): **534**, without auto-citations: **457**
Hirsch index (*Web of Science*): **14**

PhD, Msc and Bsc thesis

Supervisor (in Polish)

2018/19	*Agnieszka Luber.* Efficiency of crystallization and mineralogical characterization of hydrotalcite phases which precipitate during wastewater treatment *(Efektywność krystalizacji i charakterystyka mineralogiczna faz hydrotalkitowych powstających w procesach oczyszczania ścieków)* (**Msc thesis**).
	Anna Kunecka. Raw and modified layered minerals as sorbents of volatile organic compounds. *(Surowe i modyfikowane minerały o budowie warstwowej jako sorbenty*

	lotnych związków organicznych) (**Msc thesis**).
2017/18	*Karolina Rybka.* Hydrotalcite-like mineral composites obtained by transformation of selected minerals as hybrid sorbents for the removal of anions from multi-element aqueous solutions. *(Hydrotalkitowe kompozyty mineralne otrzymane poprzez transformację wybranych minerałów jako hybrydowe sorbenty do usuwania anionów z wodnych roztworów wieloskładnikowych)* **(PhD thesis)**.
	Bartosz Toboła. Synthesis and characterization of nanocomposites based on layered minerals and their use for the removal of anions from multi-element solutions. *(Synteza i charakterystyka nanokompozytów na bazie minerałów warstwowych oraz ich zdolność do usuwania anionów z systemów wieloskładnikowych* (**Msc thesis**).
	Joanna Kuzdro. Efficiency of AMD water clarification by calcined mineral composites. *(Efektywność oczyszczania wód typu AMD przez kalcynowane kompozyty mineralne)* (**Msc thesis**).
	Monika Kuzko. Halloysite impregnated with iron nanoparticles: the effect of synthesis procedure on its structure and sorption properties in conditions simulating real pollution. *(Haloizyt impregnowany nanocząstkami żelaza: wpływ warunków syntezy na strukturę i właściwości sorpcyjne w warunkach symulujących rzeczywiste zanieczyszczenia)* (**Msc thesis**).
2016/17	*Paulina Maziarz.* Layered minerals doped with nanoparticles containing iron showing reductive and magnetic properties for the removal and separation of selected ions. (*Minerały warstwowe dotowane nanocząstkami zawierającymi żelazo o właściwościach redukcyjnych i magnetycznych do usuwania i separacji wybranych jonów nieorganicznych*) **(PhD thesis).**
	Jakub Hyla. Halloysite-based nanocomposites and their sorption properties towards selected anions *(Nanokompozyty haloizytowe oraz ich właściwości sorpcyjne względem wybranych anionów)* (**Msc thesis**).
	Karolina Rybka. Efficiency of aqueous solution remediation from selected anions by nanocomposites derived Maria III kaolinite *(Efektywność oczyszczania roztworów wodnych z wybranych anionów przez nanokompozyty otrzymane na bazie kaolinitu ze złoża Maria III)* (**Msc thesis**).
	Katarzyna Suwała. Sorption of selected cations on kaolinite modified with iron nanoparticles *(Sorpcja wybranych kationów na kaolinicie modyfikowanym przez nanocząstki żelaza*) (**Msc thesis**).
	Anna Łepko. Mineral nanosensors responsive to UV radiation based on zirconium phosphate *(Mineralne nanoczujniki reagujące na promieniowanie UV na bazie fosforanu cyrkonu*) (**Msc thesis**).
	Dawid Kozień. The effect of clay minerals presence on the degradation of selected biodegradable polymers *(Wpływ obecności minerałów ilastych na degradację wybranych polimerów biodegradowalnych*) (**Bsc thesis**).
	Bartosz Toboła. Mineralogical characterization of vermiculite and its capability to remove lead and cadmium from aqueous solutions *(Charakterystyka mineralogiczna wermikulitu oraz jego zdolność do usuwania jonów ołowiu i kadmu z roztworów wodnych*) (**Bsc thesis**).
2015/16	*Anna Koteja.* Photoactive hybrid nanomaterials obtained from layered minerals *(Fotoaktywne nanomateriały hybrydowe otrzymane na bazie minerałów o budowie warstwowej)*. (**PhD thesis)**.
	Izabela Biskup. Mineral photoactive nanomaterials obtained from crystalline zirconium phosphate *(Mineralne nanomateriały fotoaktywne otrzymywane na bazie krystalicznego fosforanu cyrkonu)* (**Msc thesis**).
	Mateusz Dyrek. Calcined and acid activated halloysites as sorbents of selected organic

	and inorganic pollutants *(Haloizyt kalcynowany oraz aktywowany kwasowo jako sorbenty wybranych zanieczyszczeń organicznych i nieorganicznych)* (**Msc thesis**).
	Karolina Góra. Mineral photoactive nanomaterials obtained from synthetic kanemite *(Mineralne nanomateriały fotoaktywne otrzymywane na bazie syntetycznego kanemitu)* (**Msc thesis**).
	Andrzej Kałkowski. Synthetic kaolinite nanotubes – modification and photoactive properties *(Syntetyczne nanorurki kaolinitowe - modyfikacja i właściwości fotoaktywne)* (**Msc thesis**).
	Weronika Vanik. Chemical and mineralogical composition and sorption properties of dried, fermented biomass from agricultural biogas plant in Sobawiny near Opoczno (Poland) *(Skład mineralny i właściwości sorpcyjne suchej masy pofermentacyjnej pochodzącej z biogazowni rolniczej w Sobowinach koło Opoczna)* (**Msc thesis**).
	Karolina Jaworska. The investigation of P(V) adsorption mechanisms on natural halloysite from Dunino deposit *(Badania mechanizmu adsorpcji jonów P(V) na haloizycie naturalnym ze złoża Dunino)* (**Bsc thesis**).
	Igor Keller. Spectroscopic identification of exchangeable cations in smectite structure *(Spektroskopowa identyfikacja kationów wymiennych w strukturze minerałów smektytowych)* (**Bsc thesis**).
	Konrad Kieroński. Metalloorganic zeolitic structures as molecular sieves for gas cleaning *(Zeolitowe struktury metaloorganiczne jako sita molekularne do oczyszczania gazów)* (**Bsc thesis**).
	Jakub Krejpcio. Kanemite – synthesis and modification using quaternary ammonium salts *(Kanemit - synteza i modyfikacja struktury z użyciem czwartorzędowych soli amoniowych)* (**Bsc thesis**).
	Anna Łepko. Structure of synthetic zirconium phosphate and its modification possibilities *(Struktura krystaliczna syntetycznego fosforanu cyrkonu i próba jej modyfikacji)* (**Bsc thesis**).
	Marlena Mączka. The investigation of As(V) adsorption mechanisms on natural halloysite from Dunino deposit *(Badania mechanizmu adsorpcji jonów As(V) na haloizycie naturalnym ze złoża Dunino)* (**Bsc thesis**).
2014/15	*Anna Prokop.* The possibility of using halloysite from Dunino deposit and smectite-bearing waste as sorbents of harmful ions *(Możliwość wykorzystania haloizytu ze złoża Dunino oraz odpadowego iłu smektytowego jako sorbentów szkodliwych jonów)* (**Msc thesis**).
	Paulina Maziarz. Comparative characteristics of adsorption properties for commercial halloysite and smectite-bearing waste *(Charakterystyka porównawcza właściwości sorpcyjnych modyfikowanego na skalę przemysłową haloizytu i odpadowego iłu smektytowego)* (**Msc thesis**).
	Barbara Kardyś. Determination of surface charge density and cation exchange capacity for selected minerals *(Wyznaczanie gęstości ładunku powierzchniowego i pojemności kationowymiennej dla wybranych minerałów)* (**Msc thesis**).
	Anna Czerwonka. Intercalation compounds of clay minerals and their reaction to UV radiation *(Interkalaty minerałów ilastych i ich reakcja na promieniowanie UV)* (**Msc thesis**).
	Justyna Naglik. The assessment of selected toxic ions desorption from soils *(Ocena efektywności desorpcji wybranych jonów toksycznych dla gleb)* (**Msc thesis**).
	Izabela Biskup. The efficiency of Ni(II) and Cr(III) sorption by modified Maria III kaolinite *(Efektywność sorpcji jonów Ni(II) i Cr(III) na modyfikowanym kaolinicie ze złoża Maria III)* (**Bsc thesis**).
	Karolina Góra. Sorption of Ni(II) and Cr(III) by modified kaolinite from Rusko Jaroszów deposit *(Sorpcja Ni(II) i Cr(III) na modyfikowanym kaolinicie ze złoża Rusko-*

	Jaroszów) (**Bsc thesis**).
	Mateusz Dyrek. The use of organic acids for synthesis of heavy metal sorbents based on kaolin group minerals *(Wykorzystanie kwasów organicznych do syntezy sorbentu metali ciężkich na bazie kaolinitu)* (**Bsc thesis**).
	Karol Kopeć. The efficiency of dyes sorption by methoxy-kaolinite *(Efektywność sorpcji barwników na kaolinicie metylowym)* (**Bsc thesis**).
	Łukasz Karus. CO_2 sequestration technologies – current solutions and future perspectives (Technologie sekwestracji CO_2 - obecne rozwiązania i perspektywy na przyszłość) (**Bsc thesis**).
	Jan Wańczyk. Metals and mettaloids in soils – bioavailability and their effect on organisms (Metale i metaloidy w glebach - biodostępność i wpływ na organizmy) (**Bsc thesis**).
2013/14	*Barbara Szala.* Production and utilization of organo-zeolites as sorbents of petroleum compounds *(Wytwarzanie i utylizacja organo-zeolitów jako sorbentów związków ropopochodnych)* (**PhD thesis** - co-supervisor).
	Anna Koteja. Sorption efficiency and mechanisms for selected ions on modified kaolinites of different structural order *(Efektywność i mechanizm sorpcji wybranych jonów na modyfikowanych kaolinitach o różnym stopniu uporządkowania struktury)* (**Msc thesis**).
	Michał Białoń. Halloysite pillared with polycations – synthesis approach and properties *(Haloizyt podpierany polikationami metalo-hydroksylowymi - próba syntezy i właściwości)* (**Msc thesis**).
	Barbara Długosz. Mineralogical characterization of sepiolite and its affinity to remove aqueous lead *(Charakterystyka mineralogiczna sepiolitu oraz ocena jego zdolności do usuwania jonów ołowiu)* (**Bsc thesis**).
	Paulina Maziarz. Kinetics of selected heavy metals immobilization by modified halloysite *(Kinetyka immobilizacji wybranych metali ciężkich na modyfikowanym haloizycie)* (**Bsc thesis**).
	Anna Prokop. Competitive cations and anions adsorption on modified halloysite *(Konkurencyjna sorpcja kationów i anionów na modyfikowanym haloizycie)* (**Bsc thesis**).
	Hubert Makuła. Thermodynamics of soprtion process on modified halloysite *(Termodynamika procesu sorpcji na modyfikowanym haloizycie)* (**Bsc thesis**).
	Agnieszka Perkun. Comparative characterization of sorption properties for selected zeolites *(Charakterystyka porównawcza właściwości sorpcyjnych wybranych zeolitów)* (**Bsc thesis**).
	Ewa Pstrucha. Synthetic zeolite – synthesis, characterization and application possibilities *(Zeolit syntetyczny - synteza i charakterystyka oraz możliwości wykorzystania)* (**Bsc thesis**).
	Alicja Pstrucha. Synthetic zeolite modification to improve its cation exchange properties *(Modyfikacja zeolitu syntetycznego w celu polepszenia jego właściwości kationowymiennych)* (**Bsc thesis**).
2012/13	*Lucyna Matykowska*. Kaolinite intercalation compounds with ammonium salts and their interaction with selected anions *(Interkalaty kaolinitu z solami amoniowymi i ich interakcja z wybranymi anionami)* (**Msc thesis**).
	Anna Wścisło. Sorption of heavy metals on modified halloysite *(Sorpcja metali ciężkich*

	na zmodyfikowanym haloizycie) (**Msc thesis**).
	Kornelia Sawińska. Kaolinite modification by simultaneous intercalation of two selected ammonium salts *(Modyfikacja kaolinitu przez jednoczesne wprowadzenie do przestrzeni międzypakietowej dwóch wybranych soli amoniowych)* (**Bsc thesis**).
	Anna Koteja. Spectroscopic analysis of soils for determination of mineral composition and content of organic substances *(Analiza spektroskopowa gleb pod kątem składu mineralnego i zanieczyszczeń związkami organicznymi)* (**Bsc thesis**).
	Łukasz Barwiński. Mineralogical characterization of clay minerals from selected deposits in Nevada State, USA *(Charakterystyka mineralogiczna minerałów ilastych z wybranych złóż w Nevadzie, USA)* (**Bsc thesis**).
2011/12	*Lucyna Matykowska*. Formation of kaolinite complex with methylene blue (**student project**).
	Anna Wścisło. Synthesis of kaolinite derivatives with aromatic chemical compounds (**student project**).
	Lucyna Matykowska. The influence of synthesis conditions on formation of kaolinite intercalate with dimethyl sulphoxide *(Wpływa warunków syntezy na tworzenie się kompleksu kaolinitu z sulfotlenkiem dimetylu)* (**Bsc thesis**).
	Anna Wścisło. The influence of synthesis conditions on formation of kaolinite intercalate with urea *(Wpływ warunków syntezy na tworzenie się kompleksu kaolinitu z mocznikiem)* (**Bsc thesis**).
	Paulina Metzler. Industrial applications of smectite group minerals *(Przemysłowe zastosowania minerałów smektytowych)* (**Bsc thesis**).
2010/11	*Maja Psykała*. Intercalation of dodecylamine into kaolinites of high structural order (**student project**).
	Wojciech Grzywacz. Methanol complexes with kaolin minerals of low structural order-IR study (**student project**).

Membership:

- Mineralogical Society of Poland (**vice-president**, 2016-present)
- Committee of Mineralogical Sciences, Polish Academy of Science (member) 2015-2019
- Clay Minerals Society (member) 2010-present
- Geology, Geophysics & Environment journal - editorial board member 2014-present
- Materials journal (MDPI) – guest editor of Special Issue 2019/2020

Conference organization

- 2019 - *4th Mineral Sorbents Conference, Jerzmanowice* - member of Organizing Committee
- 2017 - *3rd Mineral Sorbents Conference, Kraków* - member of Organizing Committee
- 2015 - *2nd Mineral Sorbents Conference, Kraków* - member of Organizing Committee
- 2013 - *1st Mineral Sorbents Conference, Kraków* - member of Organizing Committee
- 2008 - *4-Mid-European Clay Conference, Zakopane* - member of Organizing Committee

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