



**MARCIN PIETRZYKOWSKI, PhD, DsC**

***Professor in Forestry, Forest Ecology and Reclamation  
Fulbright Scholar***

***Cultura Prize 2015 by Alfred Toepfer Foundation***

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[Google Scholar](#); [LinkedIn](#); [Facebook](#)

**MAJOR ACADEMIC DISCIPLINE:** Environmental Sciences

**SPECIALIZATIONS** Forestry, Restoration Ecology, Forest Land Reclamation

**FIELD OF STUDIES** Forest ecosystem restoration, mine soil – vegetation relationships, trees species adaptation to disturbed sites, forested wetlands restoration, biogeochemistry and nutrient cycling, carbon sequestration, site classification and forest management on reclaimed; trace elements plant bioavailability; bio-stabilization and remediation of contaminated sites.

**EDUCATION and Science Degree:**

Professor in Forestry. 2016.

D.Sc. 2011: University of Agriculture in Krakow, Faculty of Forestry (Major Forest Ecology and Forest Land Reclamation, minor Soil Science and Plant Ecology)

Ph.D. 2005: University of Agriculture in Krakow, Faculty of Forestry (Major reclamation of disturbed sites, minor Soil Science and Plant Ecology)

M.S. and B.S 1999: University of Agriculture in Krakow, Forest Faculty, Department of Forest Soil Science (Forestry and Soil Science)

Post-doc 2009: Virginia Polytechnic Institute and State University, Dept. Crop & Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA, Advisor: W. Lee Daniels

Post-diploma Study 2008-2010 Krakow University of Technology, Center of Pedagogy and Psychology (teaching, personal development and education)

Post-diploma Study 2001 Post diploma Study of Environmental Protection and Nature Conservation, Agricultural University of Cracow, Forest Faculty

**SCHOLARSHIP, PROFESSIONAL EXPERIENCE AND APPOINTMENTS:**

- 2013 to 2014 Fulbright Advanced Senior Research Grant, Visiting Scholar, Virginia Polytechnic Institute and State University, Dept. Crop & Soil Environmental Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA
- 2011 Stanford University, Personal & Professional Development, Accredited degree, Design Thinking, Innovation and Commercialization of Science
- 2012 to present Associate Dean for Research and Development, Faculty of Forestry University of Agriculture in Krakow
- 2005 to present Associate Professor, Dept. Forest Ecology, Faculty of Forestry, University of Agriculture in Krakow
- 1999 to 2005 Assistant Professor Department of Forest Ecology Agricultural University of Agriculture in Krakow

**AWARDS:**

2016. Rector of University of Agriculture in Krakow Award for distinguished scientific achievements (publications)
2015. **European Award for Sustainable Land Use - CULTURA Prize 2015** Albert Toepfer Foundadtion <http://toepfer-stiftung.de/cultura-preis/>
- 2015 Rector of University of Agriculture in Krakow Award for distinguished scientific achievements (publications)
- 2014 Rector of University of Agriculture in Krakow Award for distinguished educational achievements (co-author of new study course Environmental Management)
- 2011 Rector of University of Agriculture in Krakow Award for distinguished scientific achievements (publications)
- 2009 Scholarship of Rector of University of Agriculture in Krakow for the most interesting research supporting for young scientist of Agriculture, Forestry and Veterinary Science in frame of Alina and Jan Wagowie Scholarship Foundation contest
- 2009 Pro Scientia et Vita Foundation Award for Young and Active Scientist of the 2009 year, Foundation of the Members of Agriculture Forestry and Veterinary Science, Polish Academy of Science
- 2007 Rector of University of Agriculture in Krakow Award (Team, 3 rd degree) for distinguished scientific achievements
- 2006 Rector of University of Agriculture Award for distinguished scientific achievements (Doctoral thesis)
- 2006 Award in Scientific Contest Presentation "Mining Workshop 2006" for young scientist, for the presentation: The development of reclamation methods in filing sand mining – exemplified by sand cast. Organized by Mineral Resource and Energy Managing Institute of Polish Academy of Science and Mining Authority. Krakow-Tomaszowice, June 13, 2006.

**MEMBERSHIP IN PROFESSIONAL SOCIETIES, EDITORIAL BOARD AND REVIEWER :**

- The American Society of Mining and Reclamation  
Society of Ecological Restoration  
The Polish Society of Soil Science

Editorial Board Member, Subject Editor of Journal of Forestry Research (Springer, IF 0.658)

Editorial Board Member, Section Editor: Journal of Plant Chemistry and Ecophysiology,  
Austin Publishing Group, Casselberry Way, Monroe Township, New Jersey 08831, USA

Reviewer in Journals:

Advances in Space Research  
Arid Land Research and Management  
Balitic Forestry  
Botany(Canadian Science Publishing)  
Canadian Journal of Forest Research  
Canadian Journal of Soil Science  
Chemosphere  
Compost Science & Utilization  
Communications in Soil Science and Plant Analysis  
Ecological Research  
Ecological Restoration  
Environmental Pollution  
Environmental Science & Policy  
Environmental Science and Pollution Research  
Forest Ecology and Management  
International Journal of Phytoremediation  
Journal of Environmental Quality  
Journal of Environmental Management  
Journal of Hazardous Material  
Life Sciences in Space Research  
Land Degradation and Development  
Pedosphere  
PLOS One  
Polish Journal of Environmental Studies  
Remote Sensing  
Science of The Total Environment

**TEACHING/STUDENT ADVISING:**

Course Taught  
Forest Ecology (undergraduate)  
Ecology (undergraduate)  
Forest Land Reclamation (undergraduate and graduate)  
Reclamation of Disturbed Lands (graduate)  
Restoration Ecology of Post-industrial sites (graduate in English)  
Environmental Protection (undergraduate)  
Ecology of Post-Mining and Postindustrial Sites (graduate in English and Erasmus Program)  
Remediation of Contaminated Sites (graduate)  
Remediation with Ecological Engineering (undergraduate)  
Carbon Biogeochemistry in Forest Ecosystem (graduate)  
Global Environmental Problems (graduate - in collaboration with Melanie Szulczewski PhD,  
Fulbright Scholar, University of Mary Washington, VA, USA)

## Students Advised

Undergraduate (12) Graduate (15) Ph.D. Students (4)

**FUNDED RESEARCH PROJECTS:**

- M. Pietrzykowski** (principal investigator): 2016-2017. The impact of alders (*Alnus* sp.) on biogeochemical transformation of technogenic soil-substrate. Grant No. 207737. . National Foundation of Science (Poland). PLN 203, 022. 00. \$56395. 2016-2017.
- M. Pietrzykowski**. Fulbright Advanced Senior Grant: Ecological effectiveness assessment of reclamation methods - with or without topsoil. Fulbright Advanced research Grant, Virginia Polytechnic Institute and State University College of Agriculture and Life Science, Department of Crop & Soil Environmental Science. Polish-US Fulbright Commission. September 1 2013 – February 28 2014.
- W. Lee Daniels & collaborators. Weanack/Shirley Wetland Experiment (WSWE), Shirley Plantation on the James River in Charles City County, VA – **M. Pietrzykowski task**: The growth and nutrient supply of young bald cypress (*Taxodium distichum* (L.) L.C. Rich.) in reconstructed freshwater forested wetlands in southeastern Virginia. Virginia Tech. September 1 2013 – February 28 2014
- M. Pietrzykowski**, B. Woś. The influence of different tree species on biological and chemical transformation of soil-substrates and ecological indicators of vascular plant communities developed during ecosystem succession on reclaimed mine sites. (Main investigator, supervisor). Grant No. 207737. National Foundation of Science (Poland). PLN 69,000. \$23,000. 2013-2015.
- P. Tylek et al., and **M. Pietrzykowski**. Development of new technologies and functional model for machine to the rehabilitation of fields after the energetic willow plantation. University of Agriculture in Krakow, Industrial Institute of Agriculture Engineering, Poznan, PW PROMAR Enterprise, Poznan. The National Center for Research and Development. Grant UE 6404 (NCBiR, PBS2, 2014-2016) No. 207737. PLN 1, 737, 203 (\$542,000). 2013 – 2016.
- W. Lee Daniels & collaborators, N. House and **M. Pietrzykowski**. Soil genesis of saline dredged material, Shirley Plantation and Virginia Tech. 2008-2009.
- M. Pietrzykowski** (Principal investigator). An analysis and optimization of site classification methods and criteria for the evaluation of reclaim to forest on selected post mining areas in Poland. The Polish Ministry of Science and Higher Education. Grant No. N 30901332/2076. March 2007- March 2009. PLN125,000 (\$42,000).
- M. Niklińska, M. Chodak, E. Śliwińska, **M. Pietrzykowski** (Investigator). The structure, biodiversity and activity of microorganisms on reclaimed grounds as an indicator of biological reclamation success. The Polish Ministry of Science and Higher Education. Grant No. P04G 02230. Institute of Environmental Sciences, Jagiellonian University, Krakow, Department of Open Cast Mining, AGH University of Science and Technology Krakow. PLN131,450 (\$411,000). February 2006 – July 2008.
- M. Pietrzykowski**. Determination of phyto-pedological index of biogene accumulation for forest land reclamation assessment – exemplified by external slope bank after lignite mining. Scholarship and research grant of Rector of University of Agriculture in Krakow. PLN5000 (\$2000). January 2007 – May 2007.

- W. Krzaklewski, K. Bajorek-Zydroń, **M. Pietrzykowski** (Investigator). An assessment of Scots pine (*Pinus Sylvestris* L.) nutrient supply in the first class age growing on plateau of external slope Bełchatow Lignite Open Cast Mining and forests of Bełchatow Forest District. The Polish Minister of Scientific Research and Information Technology, Grant No 2P06L07229. PLN75,000 (\$23437). February 2005 – February 2007.
- M. Pietrzykowski**, W. Krzaklewski. Characteristics of soils and vegetation in reclaimed areas or in areas left for succession in the Szczakowa open cast sand mine in southern Poland. The Polish Minister of Scientific Research and Information Technology. Grant No. P06 S 03925. PLN29,000 (\$9700). July 2003 – July 2005.
- S. Małek, J. Barszcz, W. Krzaklewski, **M. Pietrzykowski**, M. Pająk. Improvement of site revitalisation and rebuilding of mountain forest stands in Regional Directory of State Forests RDLP in Katowice taking into consideration of improvement of water relations and forest genetic selection. National Found for Environmental Protection and Water Management NFOŚIGW in Warsaw. Project No. 566/2003/Wn50/NE-PR-TX/D. Department of Forest Ecology, University of Agriculture in Krakow. PLN 500,000 (\$157,000). 2003-2005.
- W. Krzaklewski, J. Fijał, **M. Pietrzykowski**. Program of dusting reduction and turf planting introduction guidelines for post-flotation pounds of the Boleslaw Mining-Metallurgy Plant in Bukowno. Financed by Boleslaw Mining-Metallurgy Plant in Bukowno, Poland. University of Agriculture in Krakow, AGH-University of Science and Technology Krakow. PLN120,000 (\$40,000). January 2000 – July 2001.

#### REFEREED JOURNAL ARTICLES (selected):

- Likus-Cieślik, J., **Pietrzykowski, M.**, Szostak, M., Szulczewski, M. 2017. Spatial distribution and concentration of sulfur in relation to vegetation cover and soil properties on a reclaimed sulfur mine site (Southern Poland), *Environmental Monitoring and Assessment* 189 (2), 189:87
- Józefowska, A., **Pietrzykowski, M.**, Woś, B., Cajthaml, T., Frouz, J. 2017. The effects of tree species and substrate on carbon sequestration and chemical and biological properties in reforested post-mining soils, *Geoderma* 292, 9-16.
- Tylek, P., **Pietrzykowski, M.**, Walczyk, J., Juliszewski, T., Kwaśniewski, D., 2017. Root Biomass and Morphological Characterization of Energy Willow Stumps. *Croat. j. for. eng.* 38(2017)1 47-54
- Pietrzykowski M.**, Gruba P., Sproul G., 2017. The effectiveness of Yellow lupine (*Lupinus luteus* L.) green manure cropping in sand mine cast reclamation. *Ecological Engineering - in printing*
- Józefowska A., Woś B., **Pietrzykowski M.** 2016. Tree species and soil substrate effects on soil biota during early soil forming stages at afforested mine sites. *Applied Soil Ecology* 102: 70–79.
- Likus-Cieślik J., **Pietrzykowski M.**, Śliwińska-Siuśta M., Krzaklewski W., Szostak M. 2015. A preliminary assessment of soil sulphur contamination and vegetations in the vicinity of former boreholes on the aff orested post-mine site Jeziórko. *Geology, Geophysics and Environment*. 41 (4): 371–380
- Juliszewski T., Kwaśniewski D., **Pietrzykowski M.**, Tylek P., Walczyk J., Woś B., Likus J., 2015. Root biomass distribution in an energy willow plantation. *Agricultural Engineering*, 4(156), 43-49.

- Woś B., **Pietrzykowski M.** 2015. Simulation of birch and pine litter influence on early stage of reclaimed soil formation process under controlled conditions. *Journal of Environmental Quality*, 44: 4: 1091-1098
- Pietrzykowski M.**, Daniels W. L., Koropchak S. C. 2015. Microtopographic effects of growth of young bald cypress (*Taxodium distichum* L.) in created freshwater forested wetland in southeastern Virginia. *Ecological Engineering* 83: 135 - 143
- Chodak M., **Pietrzykowski M.**, Sroka K. 2015. Physiological profiles of microbial communities in mine soils afforested with different tree species. *Ecological Engineering* 81: 462 - 470.
- Pietrzykowski M.**, Krzaklewski W., Woś B. 2015. Preliminary assessment of growth and survival of green alder (*Alnus viridis*), a potential biological stabilizer on fly ash disposal sites. *Journal of Forestry Research*. 26(1) 2015: 131-136.
- Pietrzykowski M.**, Socha J. and N. S. van Doorn. 2015. Scots pine (*Pinus sylvestris* L.) site index in relation to physico-chemical and biological properties in reclaimed mine soils. *New Forests*. 46:247–266.
- Pietrzykowski M.**, Krzaklewski W., Likus J., Woś B. 2015. Assessment of English oak (*Quercus robur* L.) growth in varied soil-substrate conditions of reclaimed Piaseczno sulfur mine dump. *Folia Forestalia Polonica, Series A*, 57 (1), 28-32.)
- Szostak M., Wężyk P., Hawryło P., **Pietrzykowski M.** 2015. The analysis of spatial and temporal changes of land cover and land use in the reclaimed areas with application of airborne orthophotomaps and LANDSAT images. *Geodesy and Cartography*, 64(1): 75-86
- Woś B., **Pietrzykowski M.**, Krzaklewski W., 2014. Humus properties of soils formed under conditions of afforested dump ground of sulfur mine. *Sylwan*. 158 (12):893-900.
- Pietrzykowski M.** Daniels, W. Lee. 2014. Estimation of carbon sequestration by pine (*Pinus sylvestris* L.) ecosystems developed on reforested post-mining sites in Poland on differing mine soil substrates. *Ecological Engineering* 73: 209–218
- Pietrzykowski M.**, Socha, J., van Doorn, N.S., 2014. Linking heavy metal bioavailability (Cd, Cu, Zn and Pb) in Scots pine needles to soil properties in reclaimed mine areas. *Sci. Total Environ.* 470–471, 501–510.
- Pietrzykowski M.**, Chodak M. 2014. Near infrared spectroscopy - a tool for chemical properties and organic matter assessment of afforested mine soils. *Ecological Engineering*. 62: 115– 122.
- Pietrzykowski M.** 2014. Soil quality index as a tool for Scots pine (*Pinus sylvestris*) monoculture conversion planning on afforested, reclaimed mine land. *Journal of Forestry Research*. 25(1): 63-74.
- Pietrzykowski M.**, Woś, B., Haus, N. 2013. Scots pine needles macro-nutrient (N, P, K, Ca, Mg and S) supply at different reclaimed mine soil substrates - as an indicator of the stability of developed forest ecosystems. *Environmental Monitoring and Assessment*, 185:7445–7457
- Krzaklewski W., **Pietrzykowski M.**, Woś B. 2012. Survival and growth of alders (*Alnus glutinosa* (L.) Gaertn. and *Alnus incana* (L.) Moench) on fly ash technosols at different substrate improvement. *Ecological Engineering* 49, 35-40.
- Pietrzykowski M.**, Pająk M., Krzaklewski W. 2011. Assessment of soil-site conditions on the spoil heaps of Lignite Mining Plant (KWB) Bełchatów reclaimed to forest with the use of the Site Soil Index (SIG). *Polish Journal of Soil Science*, 54(1), 81-88.

- Pietrzykowski M.**, Socha J. 2011. An estimation of Scots pine (*Pinus sylvestris* L.) ecosystem productivity on reclaimed post-mining sites in Poland (Central Europe) with using of allometric equations. *Ecological Engineering*, 37, 381-386.
- Pietrzykowski, M.**, Krzaklewski, W., Pająk, M., Socha, S., Ochał, W., 2010. Analysis and optimization of site classification and criteria of forest reclamation assessment in selected mining areas in Poland. University of Agriculture in Krakow Publishing House, Krakow.
- Pietrzykowski M.**, Socha J., Woś B. 2010. Biomass and deformation of the Scots pine (*Pinus sylvestris* L.) root systems in reclaimed open-cast mining pit and dumping ground. *Sylvan* 154 (2), 107-116.
- Ochał W., Pająk M., **Pietrzykowski M.** 2010. Diameter structure of selected pine stands growing on post-mining sites reclaimed for forestry. *Sylvan* 154(5): 323-332.
- Pietrzykowski M.** 2010. Fractional composition and optical properties of humus of soils developing on post-mining areas reclaimed for forest use. *Sylvan* 154(11), 742-749.
- Pietrzykowski M.**, Krzaklewski W. 2010. Heavy metals content in initial soil formed under succession communities on sand mine quarry. *EJPAU*. 13(4), 18. Available Online: <http://www.ejpau.media.pl/volume13/issue4/art-18.html>
- Chodak M., **Pietrzykowski M.**, Niklińska M. 2009. Development of microbial properties in a chronosequence of sandy mine soils. *Applied Soil Ecology* 41: 259 – 268.
- Pietrzykowski M.** and Krzaklewski W., 2007. Soil organic matter, C and N accumulation during natural succession and reclamation in an opencast sand quarry (southern Poland). *Archives of Agronomy and Soil Science*, 53 (5): 473 - 483
- Pietrzykowski M.** and Krzaklewski W., 2007. An assessment of energy efficiency in reclamation to forest. *Ecol. Eng.* 30: 341-348.
- Krzaklewski W., **Pietrzykowski M.** 2007. Site classification in post-mining areas reclaimed for forest use with special focus on phytosociological-soil method. *Sylvan* 151 (1), 51-57.
- Krzaklewski, W., Barszcz, J., Małek, S., Koziół, K., **Pietrzykowski, M.**, 2004. Contamination of Forest Soils in the Vicinity of the Sedimentation Pond after Zinc and Lead Ore Flotation (in the Region of Olkusz, Southern Poland). *Water, Air, and Soil Pollut.* 159, 151–164.
- Krzaklewski W., **Pietrzykowski M.** 2002. Selected physico-chemical properties of zinc and lead ore tailings and their biological stabilization. *Water Air, and Soil Pollution*, 141 (1-4), s. 125-142.

**BOOKS:**

- Pietrzykowski, M.**, Krzaklewski W., Pająk, M., Socha, J., Ochał, W. 2010. An analysis and optimization of site classification methods and criteria for the evaluation of forest land reclamation on selected post mining areas in Poland. p. 145-164, in: M. Pietrzykowski (ed.) Agricultural University in Krakow Press, Krakow, Poland.
- Pietrzykowski M.**, Krzaklewski W. 2009. Reclamation to forest in sand-filing mining exemplified on Szczakowa Mining. Monographs. Department of Forest Ecology, University of Agriculture in Krakow, Monos, Krakow. (In Polish, English summary), pp. 134.

**BOOKS CHAPTERS (selected):**

- Krzaklewski W., Pająk M., **Pietrzykowski M.**, Wójcik J. 2016. Development of forest land reclamation methods on external spoil heap of Bełchatów exploitation field. (in Polish, English summary) [in:] *Węgiel brunatny gwarantem bezpieczeństwa energetycznego*. Monograf department of Mining and Geoengineering, University of Science and

Technology AGH Kraków, Red. Mariusz Sierpień, Agencja Wydawniczo-Poligraficzna ART-TEKST M. Sierpień Kraków, s. 285-292.

**Pietrzykowski M.** 2015. Reclamation and reconstruction of terrestrial ecosystems on mine sites - ecological effectiveness assessment. (Chapter 5), in: J.N. Govil et al. (ed.), Series: Energy Science and Technology, Coal Energy (Volume 2), Studium Press LLC, New Delhi, Houston, USA, p. 121-151

**Pietrzykowski M.**, Krzaklewski W. 2005. Heavy metals content in upper initial soil layer in filling sand works. In B Gworek ed. Element Cycling in The Environment: Bioaccumulation-Toxicity-Counteraction. European Integration. Monograph, VOL III. Gabriel Borowski Scientific Publisher, Lublin-Warszawa, chapter 2.1.21., p. 113-119.

**Pietrzykowski M.**, Pająk M. 2009. The Application of the Forest Soil Trophism Index (FSTI) for assessment of site condition variability in post-mining areas reclaimed to forestry. (In:) Bolesław Bieniek (ed.): Soil of chosen Landscapes. Contemporary problems of management and environmental protection. Monograph (Chapter IX), University of Warmia and Mazury in Olsztyn, Faculty of Environmental Management and Agriculture, Olsztyn, 153 – 163 (ss. 163).

#### **CONFERENCE PAPERS (selected):**

Krzaklewski W, **Pietrzykowski M.** 2002. Preliminary results in research on the New technico-biological method for stabilization of post-mining non-ferrous metals ore waste settling tanks, Mining Workshop 2002, Engineering problems related with environmental protection in mining. May 27-29, 2002. Ustroń Śl.-Kraków. IGSMiE PAN Press. Conference Proceedings pp. 71-85.

Krzaklewski W, **Pietrzykowski M.** 2003. A technical-biological Method for Stabilization of Post-flotation, Non-ferrous metals ore. Six international Symposium & Exhibition on Environmental Contamination in Central and Eastern Europe and the Commonwealth of Independent States, 1 – 4 September 2003, Prague, Czech Republic, Conference Proceedings pp. 149.

Krzaklewski W, **Pietrzykowski M.**, Frukacz T. 2005. Electrical conductivity and pH characteristics of furnace waste from the Bełchatów power-plant on the Lubień waste storage area. Mining Workshop 2005, Engineering problems related with environmental protection in mining. June 20-22, 2005. Kazimierz Dolny n.Wisłą. IGSMiE PAN Press. Conference Proceedings pp. 145-156.

**Pietrzykowski M.**, Krzaklewski W. 2006. Organic carbon and nitrogen accumulation and some humus properties of initial soils on reclaimed and abandoned for plant succession areas of Sand Mine works 'Szczakowa' (Southern Poland), International Conference on The Role of Long-term Field Experiments in Agricultural and Ecological Sciences & Practical Solutions for Managing Optimum C and N Content in Agricultural Soils III, Prague 22<sup>nd</sup>-24<sup>th</sup> June 2005, Czech University of Agriculture, Prague, Proceedings: 165-177.

**Pietrzykowski, M.** 2007. Succession or reclamation - a case study of forest ecosystem development on a sand mine cast (in Southern Poland). Proceedings of MACE "Modern Agriculture in Central and Eastern Europe" - Green Week Scientific Conference 2007, "Managing Economic, Social and Biological Transformations", January, 17<sup>th</sup> and 18<sup>th</sup>, 2007, Berlin, Germany. full text paper: <http://www.mace-events.org/greenweek2007/4042-MACE.html>.



**Pietrzykowski M** and Krzaklewski W. 2007. Succession and reclamation - a case study of sand-mine excavation. *Acta Biochemica Polonica* Vol. 54 Supplement 1 (Abstracts): 90 - 91.

**Pietrzykowski M.** 2008. Macronutrient accumulation and relationships in a Scots pine (*Pinus sylvestris* L.) ecosystem on reclaimed opencast lignite mine spoil heaps in central Poland. Proceedings of 25<sup>th</sup> Annual Meeting of American Society of Mining and Reclamation (ASMR) and International Affiliation of Land Reclamationists (IALR), "New Opportunities to Apply Our Science", Richmond, Virginia, USA, – June 14 to 19, 2008. p. 856 – 877.

#### **CERTIFICATED COURSES:**

2010. Certificated scientific workshop: Application of microplates technique in environmental studies. "Institute of Environmental Sciences, Jagiellonian University, in frame: Factors of Population Extinction Risk, FRISC, Norway Grants, EOG. Krakow, 25-26/3, 2010.

2007. Modern Agriculture in Central and Eastern Europe - Managing Economic, Social and Biological Transformations, Berlin, Germany, Coordinated by Humboldt University in Berlin, supported by EU MACE Program, Marie Curie Actions, The Committee of Food, Agricultural and Consumer Protection of the Germany Federal Parliament. 17 – 18/1, 2007.

2006. Sustainable Forestry - change of forest management: from man-made towards natural forests. Training course organized by Chair of Soil Protection and Recultivation at the, Brandenburg Technical University in Cottbus, Germany, financed by EU Marie Curie Project "Modern Agriculture in central and Eastern Europe (MACE)" (11/20-11/23/2006).

2004. Practical course of FT-IR w Central Laboratory of Brandenburg Technical University in Cottbus (9/9-9/16/2004).

#### **SCIENTIFIC EXPEDITIONS:**

2015. Siberia - Magadan-Ochock See (1 month), Scientific Students expedition supervising, Lectures on Jakuck Federal University - Summer School in Geobothanic Station

2014. Azerbejgan, Kaukazus Mountains (1 month), Scientific Students expedition supervising

2013. Gorgia, Kaukazus Mountains, Kazbeg 5003 m. a.s.l., (1 month) Scientific Students expedition supervising

2012. Siberia (1 month) scientific expedition University of Agriculture in Krakow (main manager, scientific supervisor of students movements) - Baikal See, Chamar Daban and East Sajan Mountains

2011. California Trip - Death Valey, Great Canyon, Yosemite National Park, Pinakle National Monument, John Muir National Forests.

2011. Romania Carpathian Mountains, Mounti Rodney, (1 month), Scientific students expedition supervising

2010. Italy, Alps Mountain, Prigelato, Scientific students expedition supervising, interdisciplinary scientific camp in Piemonte Alps, sponsored by Anna Pasek Foundation and ACU in Krakow, 8/27-9/4/2010.

2009. Yellow Stone, Great Plains, Wyoming Coal District, Big Horn Mountains, Bad Lands, Great Lakes, – geology, soils and vegetation: across the North America, from Atlantic Ocean to Wyoming, Sponsored by Virginia Tech, Advisor W. Lee Daniels.

2007. Czarnohora Carpatian Mountains, Ukraine (3 weeks) - scientific expedition University of Agriculture in Krakow (main manager, scientific supervisor of students movements)

**OTHER FELLOWSHIP, PROFESSIONAL TRAINING AND PROFESSIONAL WORKSHOP PARTICIPATION:**

2013. October 18 -19, Advanced Wetland Soils and Mitigation (Course Number: CSES 5854) by dr W. Lee Daniels and dr John M. Galbraith, Virginia Tech, Department of Crop and Soil Environmental Science, Virginia Polytechnic Institute and State University, VA, USA.
2010. Norway, Trondheim, lectures in frame of Erasmus (co-organization of scientific exchange with Norwegian University of Science & Technology 2010/11 academic year, sponsored by Erasmus 4/24-4/28/2010.
2008. Czech Republic, Czeskie Budejovice, invited expert, Scientific meeting in Institute of Soil Biology, Biology Centre of the Academy of Sciences of the Czech Republic. lecture and presentation: "Succession and reclamation: from post-mining landscape towards forest ecosystem, (Case study of sand mining)", financed by Agricultural University of Krakow and Institute of Soil Biology Centre of the Academy of Sciences of the Czech Republic, 4/22-4/24/2008.
2008. Austria, Vienna, invited expert and lecturer - presentation: "Succession and reclamation: from post-mining landscape towards forest ecosystem", (Case study of sand mining). Workshop: "The Generation, Prevention and Treatment of Acid Mine Drainage and Old and Abandoned Mining Waste Sites – Environmental Risks and Remediation Techniques", organized by The SAFEMANMIN project, BIUTEK Environmental Experts in Vienna on the 17th-18th of January 2008 (supporting the implementation the Directive 2006/21/EC of the European Parliament and the Council on the management of waste from the extractive industries), financed by European Commission under the FP6 Program.
2006. Training course organized by NFZ.forestnet (Nancy France, Freiburg Germany, WSL Switzerland), sponsored by European Union; MountEcoSS - Mountain Ecology and Alpine Ecosystem Management, Summer School, Switzerland, Weissfluhjoch, Davos (2663 m a.s.l.), September 10-16/9, 2006.
2006. Sustainable Forestry - Change of Forest Management: From Man-made towards natural Forests. Germany, Cottbus BTU, training course organized by Brandenburg Technical University in Cottbus, sponsored by EU MACE Program, Marie Curie Actions, 20-23/11, 2006.
2006. Switzerland, Davos, summer school participation: MountecoSS "Mountain Ecology and Alpine Ecosystem Management" Summer School Weissfluhjoch, Organized by NFZ.forestnet (Nancy France, Freiburg Germany, WSL Switzerland), 9/10-9/16/2006.
2006. Germany, Rheinbraun, scientific meeting, RWE Power Aktiengesellschaft Rekultivierung Forstwirtschaft, Erfstadt, field experiments on Sophiehöhe external slope bank, invitation by RWE, 5/11-5/12/2006.
2006. Germany, Cottbus, Brandenburg Technical University in Cottbus: Training course - "Sustainable Forestry - change of forest management: from man-made towards natural forests". Organized by Chair of Soil protection and recultivation at the, financed by EU Marie Curie Project "Modern Agriculture in central and Eastern Europe (MACE)"; 11/20-11/23/2006.
2004. Germany, Cottbus, Brandenburg Technical University in Cottbus, scientific training, practical course of FT-IR w Central Lab of BTU, financed by grant of Polish Ministry of Science and Information Technology.9/9-9/16/2004.

2004. Germany, Finsterwalde, scientific training course, field experiments in frame of collaboration with Forschungsinstitut für Bergbaufolgelandschaften e.V. in Finsterwalde, financed by grant of Polish Ministry of Science and Information Technology, 9/16-9/24/2004.
2004. Practical course of analytical soil chemistry for FT-IR spectroscopy, laboratory analyses. Central Analytical Laboratory, Research Center Mining Landscape, BTU Cottbus, Germany, 14-15/9, 2004.

**CONFERENCE PRESENTATIONS (selected):**

2016. Montpellier, France (by Elsevier). Pietrzykowski M., et al.: The potential of carbon sink in biomass of willow plantations at different site conditions in Poland. 5th International Ecosummit, Ecological Sustainability - Engineering Change, 29 August - 1 September 2016, Montpellier, France by Elsevier
2014. Poland, Krakow, Plenary session, oral presentation: Tree response to soil reconstruction on reclaimed post-mining sites – a key issue in forest ecosystem restoration. Second International Conference – Forestry in The Mountains and Industrial Region (Plenary session, oral presentation), September 22nd—23th September, Krakow, Poland.
2013. USA, Boston, Oral presentation: Risk of trace elements phytotoxicity and relationships between their accumulation in soil and plants in new ecosystems developed on reclaimed mine sites. Environmental Health 2013, Science and Policy to Protect Future Generations (by Elsevier (oral presentation), 3rd - 6th March 2013, Boston, USA.
2010. Ukraine, Lviv-Dublany, oral presentation: Soil Site Index (SIG) for decryption of habitat conditions on post-mine sites (participation sponsored by ACU in Krakow). IV International Scientific Conference „Czarna k. Ustrzyk 2010. Dolnych-Lwów-Dublany. 9/21-9/24/2010
2008. USA, Richmond, Virginia, oral presentation: “Macronutrient accumulation and relationships in a Scots pine (*Pinus sylvestris* L.) ecosystem on reclaimed opencast lignite mine spoil heaps in central Poland conference participation: “New Opportunities to Apply Our Science”, 25th Annual Meeting of American Society of Mining and Reclamation (ASMR) and International Affiliation of Land Reclamationists (IALR). Sponsored by Virginia Tech University and American Society of Mining and Reclamation ASMR, 6/14-6/19/2008.
2008. France, Nancy, poster presentation: Potential for carbon accumulation in reclaimed mine soil of pine ecosystem on post mining sites in Poland. The European Forest-Based Sector: Bio-Responses to Address Climate and Energy Challenges? 11/6-11/8/2008.
2007. Germany, Berlin: oral presentation: Succession or reclamation - a case study of forest ecosystem development on a sand mine cast (in Southern Poland). MACE "Modern Agriculture in Central and Eastern Europe" - Green Week Scientific Conference 2007, "Managing Economic, Social and Biological Transformations", Coordinated by Humboldt University in Berlin. Supported by EU MACE Program, Marie Curie Actions, The Committee of Food, Agricultural and Consumer Protection of the Germany Federal Parliament. Oral presentation 1/17-1/18/2007.
2006. Germany, Bad Salzungen. Oral presentation: Probleme der rekultivierung von Rückstandshalden der Kaliindustrie, presentation: Stand der Recultivierung von Bergbaufolgelandschaften in Polen. Practical and scientific agenda (meeting): Arbeitsgemeinschaft Bergbaufolgelandschaften e.V. 7 Fachtagung 12.05-14.05.2006, financed by Bergbaufolgelandschaften e.V., 5/12-5/14/2006.

2005. Czech Republic, Prague. oral presentation : Organic carbon and nitrogen accumulation and some humus properties of initial soils on reclaimed and abandoned for plant succession areas of Sand Mine works 'Szczakowa' (Southern Poland) (participation financed by Agricultural University in Krakow), International Conference on The Role of Long -term Field Experiments in Agricultural and ecological Sciences & Practical Solutions for Managing Optimum C and N Content in Agricultural Soils III, , 6/22-6/24/2005.
2003. Czech Republic, Prague. Six International Symposium & Exhibition on Environmental Contamination in Central and Eastern Europe and the Commonwealth of Independent States, Florida State University Fellowship, 9/1-9/4/2003.