

Expression of interest for research cooperation

Description of institution

Interested institution:	AGH University of Science and Technology
Department carrying out the proposed research	Faculty of Geology, Geophysics and Environmental Protection
Address and webpage	http://www.wggios.agh.edu.pl/en/
Contact person (name, e-mail address, phone)	prof. Tomasz Bajda, bajda@agh.edu.pl , tel. 606 272 088

Research offer

Brief description of the department (key research facilities, infrastructure, equipment)

(up to 1000 characters)

Faculty of Geology, Geophysics and Environmental Protection is very strong in both, basic research and industrial applications, particularly within Earth sciences, traditional and renewable energy sources, and advanced material technologies. This includes geology, geophysics, hydrogeology and hydrochemistry, natural resources and mineral deposits, physical chemistry of solids, advanced environmental technologies, biomaterials, modern mineral composites etc. The research is supported with numerous international collaboration as well as with excellent facilities equipped with modern analytical instrumentation which include top notch electron microscope and electron microprobe, hydrous pyrolysis and organic geochemistry laboratory, applied geophysics instrumentation, mass spectrometers, gas chromatography, IR and Raman spectrometers, NMR, XRD, XRF-WDS, ICP, atomic force microscopy, and instrumentation for structural and surface characteristics of natural and synthetic materials and nanomaterials.

Scientific area

<input checked="" type="checkbox"/> Chemistry	<input type="checkbox"/> Social Sciences and Humanities
<input type="checkbox"/> Economic Sciences	<input checked="" type="checkbox"/> Information Science and Engineering
<input checked="" type="checkbox"/> Environment and Geosciences	<input type="checkbox"/> Life Sciences
<input type="checkbox"/> Mathematics	<input type="checkbox"/> Physics

Research field

(up to 500 characters)

Research groups are particularly active in applied fields of critical rare elements, applied geophysics, geochemistry and hydrochemistry of air, soil, and water pollution, mineral deposits, experimental and environmental mineralogy, immobilization of toxic elements, micro- and mesoporous nanomaterials and organo-mineral composites and catalysts, organic geochemistry, geology and geophysics of shale gas, light isotopes geochemistry, applied geoinformatics etc., as well as in basic research including thermodynamics of mineral-water interaction, global tectonics, dendrochronology, microfossils, carbonates, and geology of High Arctic.

The proposed research/project description

(up to 1000 characters)

The proposed research includes both, basic and applied fields of Earth sciences and material sciences: experimental mineralogy e.g. thermodynamics, kinetics and mechanisms of mineral crystallization/dissolution/transformation; crystallochemistry of organo-mineral materials used in industrial and environmental technologies; synthesis and modification of clay minerals, zeolites and similar solids as new type of catalysts, adsorbents and nanocomposites; models of ore deposits; metalogeny; exploration and petrology of host rock and adjacent rocks; geochronology; geochemical analysis and modelling of oil and gas generation applied in exploration for hydrocarbons; shale gas; hydrogeology and groundwater hydrogeochemistry; geochemistry of the element cycles in the environment; generation of geological maps; GIS and remote sensing; geoinformatics; numerical modeling of geodynamic phenomena; processing and analysis of digital images; statistics in geology; design and logistics of geological prospecting; environmental policies and energetic economy; development of towns; biodiversity, geodiversity and ecodiversity in the development of villages and towns.

Additional information (key Persons and Expertise; additional trainings, research programme, other)

(up to 1000 characters)

Faculty of Geology, Geophysics and Environmental Protection at AGH collaborates with broad spectrum of industry and runs a large number of research projects. The Faculty has a category "A", awarded by the Ministry of Higher Education and Science. The Faculty employs 270 researchers, including 60 professors, 5 visiting professors, 110 assistant professors (with PhD), 20 assistants, 10 lecturers and 100 PhD students.