

The institution	Name: Institute of Non-Ferrous Metals
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Is interested in the **participation in a project** that will be prepared and submitted in the following **Area** of the **Thematic Priority 6 Environment** from the Specific Work Programme Cooperation:

Specific Programme	Cooperation
Thematic Priority	6 - ENVIRONMENT (INCLUDING CLIMATE CHANGE)
Activity (number & title from the Work Programme)	6.3. Environmental Technologies
Sub-priority (number & title from the Work Programme)	6.3.1. Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment
Area (number & title from the Work Programme)	ENV.2007.3.1.1.1. Innovative technologies and services for sustainable water use in industries
Call (number & title from the Work Programme)	ENV.2007.3.1.1.1. Innovative technologies and services for sustainable water use in industries
<p>Short description of the organization expertise relevant to the topic (e.g. staff, areas of expertise and research)</p> <p>The Institute of Non-Ferrous Metals in Gliwice Poland is the main research and development centre of Polish non-ferrous metals industry.</p> <p>The Institute's complex activities comprise: research, development, consulting and implementation works, and also industrial and laboratory tests, modern engineering solutions and technical services in the field of wastes recovery and utilization, environment protection, treatment of non-ferrous metals ores and other mineral materials, pyrometallurgical and hydrometallurgical processes of metals recovery from ores, concentrates and secondary raw materials, recovery of the associated metals, new alloys and composites, processing of metals and alloys, analytical chemistry. The Institute is equipped with lab-scale units, pilot plants and modern analytical equipment assuring technical conditions for realization of the project. Our facilities, equipment and extensive contacts in industry as well as our experience gathered in conducting works in 12 projects carried out in the scope of the previous Framework Programmes give us a possibility to carry out research works not only on laboratory, but also on a pilot and even on industrial scale. The Institute has long term experiences in:</p> <ul style="list-style-type: none"> - the study of chemical composition of industrial wastes from non-ferrous ores processing and chemical wastewaters e.g. coking plants, heavy chemistry, - detailed study of pollution processes and pollutants arising during pyrolysis, combustion, coking, processing of benzole, especially in waters and wastes industry including detailed analysis of hazardous inorganic (As, Hg, Pb, Cu, Zn) and organic (benzene, PAHs, phenol) compounds, - study of impact of the wastes deposition on quality of groundwater and surface water, - experiences in leaching study of organic and inorganic pollutants in lab scale, - determination of influence of waste heaps from coal processing on air and ground water quality, - ongoing experiments with piezometers systems in heavy chemistry and non-ferrous metals plants for controlling of the infiltration and transport of pollutants from soil to the groundwater and continuously running monitoring system for quantitative and qualitative estimation of groundwater and surface waters, - technologies for industrial cooling waters treatment and water demineralization. <p>Very important part of the studies conducted in the Institute are researches leading to application of two main purification processes, e.g. bio- photodegradation and AOP, to remove of pollutants from waters and wastewater industry.</p> <p>Currently, the Institute performs projects which include study of organic pollutants biotechnology removal from waste water after lead waste clean up, photodegradation and photooxidation processes of organic pollutants in water from heavy chemistry, especially chlorophenols and polycyclic aromatic hydrocarbons.</p>	
<p>Proposed contribution to the selected Sub-Priority:</p> <p>The large lab scale studies of water demineralization, bio - photodegradation and AOP of inorganic and organic pollutants in industry waters can be perform. The analytical equipment of Institute (GC/MS, HPLC, HPLC/IPC, ASA, IPC, XRF) permit the determination of pollutants and their degradation products in aquatic system.</p>	

Participation in relevant projects (e.g. National Projects, FP5, FP6, INTERREG, LIFE, etc.; acronym & title):

FP 6:

1. Biotechnology for metal bearing materials in Europe (BioMinE) No project UE: NMP 2-CT-2005-500329 (2005-2008).
2. New Ionic Liquid Solvent Technology to Transform Metal Finishing Products and Processes (IONMET) No project: IP 515743-2

Relevant Publications (Authors, title, editor, year):

1. Czaplicka M, Czaplicki A., Photodegradation of 2,3,4,5-tetrachlorophenol in water/methanol mixture, J. Photochemistry & Photobiology, 178, 90-97, 2006.
2. Oleszek-Kudlak S., Grabda M., Czaplicka M., Rosik-Dulewska Cz., Shibata E., Nakamura T., Fate of PCDD/PCDF's during mechanical-biological sludge treatment. Chemosphere, 61, 389-397, 2005.
3. Czaplicka M. Surowiec E., Degradation of selected polycyclic aromatic hydrocarbons in the aqueous environment under the influence of visible radiation Fresenius Environmental Bulletin, 6, 21-26, 2004
4. Czaplicka M. Kinetics study of photodegradation of chlorophenols in aquatic environment. Pol. J. Chem. Technol., 1, 8-12, 2005.
5. Trojanowicz M., Drzewicz P., Pańta P., Głuszewski W, Nałęcz-Jawecki G., Sawicki J., Sampa M.H.O., Oikawa H., Borrelly S.I. Czaplicka M., Szewczyńska M., Radiolytic degradation and toxicity changes in γ -irradiated solutions of 2,4-dichlorophenol. Radiat.. Phys. Chem., 65, 357- 366, 2002
6. Kubica K., Czaplicka M., Kordas T., "Determination of organic contaminants in soil from coking plant" Anal. Chem., 43, 57-63, 1998
7. Twardowska I., Czaplicka M., Kyziół J., Kolber E., Environmental impact assessment and control of leachate from dumping sites of iron & steel and foundry solid waste. In Proceedings of the International Conference on Environmental Management in Metallurgical Industries EMMI 2000., 14-16 December 2000. (R.C.Gupta, ed., S.N. Ojha, J.P.Pathhak, Sunil Mohan, co-eds.). Allied Publ. Ltd., New Delhi Mumbai Calcutta Lucknow Chennai Nagpur Bangalore Hyderabad Ahmedabad, 195-206, 2000.
8. Trojanowicz M., Drzewicz P., Panta P.P., Głuszewski W, Nałęcz-Jawecki G, Sampa M.H. O., Oikawa H., Borrelly S. I., Czaplicka M., Mechanisms of dehalogenation and toxicity changes in radiolytic decomposition of 2,4-dichlorophenol. PACIFICHEM, Hawaje 2000

Other relevant information:

The Institute is cooperating with the large number of companies, for example KGHM, heavy chemistry factories or sewage treatment plant. Hence, in case of participating in 7th Framework projects we could assure participation of our industrial partners.