Expression of interest for research cooperation

Description of institution

Interested institution:	**Cracow University of Technology**
Department carrying out the proposed research	**Department of Chemistry and Technology of Polymers**
Address and webpage	http://www.chemia.pk.edu.pl/o-wydziale/katedra-chemii-i-technologii-polimerow-c-4/
Contact person (name, e-mail address, phone)	Prof. Krzysztof Pielichowski, kpielich@pk.edu.pl, +48-12-6282727

Research offer

Brief description of the department (key research facilities, infrastructure, equipment)
(up to 1000 characters)

Department of Chemistry and Technology of Polymers (hereafter called "Department") is a part of Faculty of Chemical Engineering and Technology at the Cracow University of Technology. In the Department there is one full professor, two associate professors, five adjuncts, four assistants and four members of staff.

Faculty members of the Department are involved in teaching and research in the area of polymer chemistry and technology, including hybrid and biomaterials. At the post-graduate level 25 students are trained within the specialization "Technology of polymers", performing at the final semester M.Sc. works under supervision of faculty members at the Department.

Most of the research works is performed together with Ph.D. students who are working towards their doctorates at the Department, being funded by Ministry of National Education and Ministry of Science and Technology in Poland and by National Science Centre.

In the Department we apply in our research different characterization tools such as IR, Raman, UV-Vis spectrometry, as well as TG, DSC, DMA, TOPEM-DSC, WAXD, SEM and AFM techniques. There is also a modern polymer processing lab available with extrusion, injection moulding, pressing and electrospinning techniques.

Scientific area

☐ X Chemistry	☐ Social Sciences and Humanities
☐ Economic Sciences	☐ X Information Science and Engineering
☐ X Environment and Geosciences	☐ Life Sciences
☐ Mathematics	☐ Physics

Research field

(up to 500 characters)

Department of Chemistry and Technology of Polymers Cracow University of Technology (www.pk.edu.pl) is active in the broad area of polymeric materials. The main research interests are: preparation of novel biocomposites with cellulose, polymer nanocomposites with layered silicates, organic-inorganic hybrid materials with POSS, polymers from renewable raw materials, polymers with improved thermal stability and lower flammability, thermal energy storage materials, polyurethane foams, epoxies, hydrogels.

The proposed research/project description

(up to 1000 characters)

Partners are sought to participate in joint projects in following fields: preparation of novel biocomposites with cellulose, polymer nanocomposites with layered silicates, organic-inorganic hybrid materials with POSS, polymeric materials from renewable raw materials, polymers with improved thermal stability and lower flammability, thermal energy storage materials, polyurethane foams, epoxies, hydrogels and novel recycling methods.

New ideas on other innovative polymeric materials are welcome, too.

Additional information (key Persons and Expertise; additional trainings, research programme, other)
(up to 1000 characters)

Vast experience in EC co-funded projects, e.g.

- COST MP0701 Composites with Novel Functional and Structural Properties by Nanoscale Materials Nano Composite Materials-NCM, 2009÷2013, consortium of 42 partners from 14 countries;
- ENMat - European Network of Materials Research Centres, since 2011, consortium of 21 partners from 10 countries;
- Nanomaterials related environmental pollution and health hazards throughout their life cycle (FP7, NEPHH), 2009÷2012, consortium of 9 partners from 6 countries;
- Marie Curie Training Center 'Structure and Properties of Advanced Materials for Environmental Applications', 2002÷2006.