

## FP5 Project Record of the Lublin University of Technology

### 1. Development of a new mobile waste water treatment process for sme olive mills

#### General Project Information

FP5 Programme Acronym: EESD

Project Reference: EVK1-CT-2002-30018      Contract Type: Cooperative research contracts

Start Date: 2002-11-01      End Date: 2005-12-31

Duration: 38 months      Project Status: Completed

Project Acronym: **MOWOM**      Budget: 436 483 €

Person responsible:  
**Prof. Ewa BOJAR (LUT)**

#### Project Description

Scientific objectives and approach: The R&D programme for MOWOM project has got 8 Work Packages (A - H) each resulting in key deliverables: The "Determination of functional requirements" workpackage (A) provides the users' demands and requirements. In the workpackage B ("Laboratory testing") a characterisation of the wastewaters is performed, and the best methods for its treatment are determined. Based on the information acquired in workpackages A and B, the "Technical specifications" workpackage (C) will allow to determine how will the technical objectives be reached. The "Development of the pilot plant" workpackage (D) will include its design and construction, based on the specifications determined in workpackage C. In the "Testing of the pilot plant" workpackage (E) the prototype will installed and operated in the user SMEs' production lines, trying to optimise it according to the established technical requirements. In parallel to workpackage E, an analysis of the obtained residue will be performed in order to find out the best ways of disposal or reutilisation. Finally, two more Workpackages will deal with the "Exploitation and Dissemination" (G) activities and with the "Management" of the entire project (H).

#### Expected Impacts

The proposed MOWOM system units will allow small olive mills to treat their stored OMW by mechanical/chemical means reaching an elimination of 95% of its organic matter content, whit simultaneous removal of toxic phenols and polyphenolic compounds, and at an affordable cost. This will contribute to a better air and groundwater quality. From the economical point of view, the MOWOM system will lead to reduction of wastewater treatment costs at least by 30 % in comparison to state of the art anaerobic treatment plants when new regulations come into force, and will create employment for its construction, operation and maintenance.

**Coordinator:**

**STAB AMBIENTE, CONCEPÇÃO, CONSTRUÇÃO E EXPLORAÇÃO DE SISTEMAS AMBIENTAIS**

Centro Empresarial Sintra-Estoril V. E29, Capa Rot  
2710-090 SINTRA, PORTUGAL

**Participants:**

**1. UNIVERSITY OF TWENTE**

5 Drienerlolaan 5  
P.B. 217  
7522 NB ENSCHEDE  
NETHERLANDS

**2. ARGUS UMWELTBIOTECHNOLOGIE GMBH**

10-11 Kitzingstrasse 11-13  
12277 BERLIN  
GERMANY

**3. TECHNOPROCESS SNC**

via Slomone Morpurgo 22  
00135 ROMA  
ITALY

**4. F. PIBER UMWELT UND WASSER**

Ebersstrasse 35  
10827 BERLIN  
GERMANY

**5. UNION OF AGRICULTURAL COOPERATIVES OF PEZA**

Kalloni  
70 100 HERAKLION-CRETE  
GREECE

**6. TECHNICAL UNIVERSITY OF LUBLIN**

(Lublin University of Technology)  
ul. Nadbystrzycka 38A  
20 618 LUBLIN  
POLAND

**7. SOCIEDADE DE PRODUÇÃO DE AZEITES DE FICALHO**

Rua dos Moionhos, 44  
7830-650 VILA VERDE DE FICALHO  
PORTUGAL

**8. AQUAETUDES**

Place de la Poste, Residence Saint Marc  
30131 PUJAUT

FRANCE

**9. PORTALIMPEX, S.A.**  
Herdade da Parreira  
PORTUGAL

**10. ELEOTRIVIA EXPRESS LTD**  
Parthenos 10  
CYPRUS

**11. VEREIN ZUR FOERDERUNG DES TECHNOLOGIETRANSFERS AN DER HOCHSCHULE  
BREMERHAVEN E.V.**  
An der Karlstadt 6  
27568 BREMERHAVEN  
GERMANY

**12. POLYMEM S.A.**  
Route de Revel  
31450 FOURQUEVAUX  
FRANCE

[http://cordis.europa.eu/data/PROJ\\_FP5/  
ACTIONeqDndSESSIONeq112362005919ndDOCe534ndTBLeqEN\\_PROJ.htm](http://cordis.europa.eu/data/PROJ_FP5/ACTIONeqDndSESSIONeq112362005919ndDOCe534ndTBLeqEN_PROJ.htm)

## **2. Centre of excellence for the application of superconducting and plasma technologies in power engineering (ASPPECT)**

### **Project Description**

#### Objectives:

The Centre of Excellence for the Application of Superconducting and Plasma Technologies in Power Engineering - ASPPECT was established at the Institute of Electrical Engineering and Electrotechnologies, Technical University of Lublin, Poland. The program was focused on creation of the leading training site on the application of superconducting and plasma technologies in power engineering in the south-eastern part of Poland, and integration of the Centre with European research area through establishing networks, twinning arrangements, as well as dissemination of knowledge. The Centre was established to facilitate innovation and technology transfer towards industry. The goal of ASPPECT was not only to strengthen the established international scientific position of the Centre, but also to built capacity of the unit as a potent research partner for Polish industry.

The CoE ASPPECT was aimed at developing activity in the multi-disciplinary area of

advanced superconductivity and plasma technologies in power engineering in the following directions: education and training, networking and cooperation with leading European research centers, increasing the number of highly qualified young researchers, stimulating international cooperation, initiating joint research aimed at specific engineering problems and enhancing involvement of Polish researchers in European Union Programmes.

The main objectives of CoE ASPPECT are:

- to increase efficiency and innovativeness in the field of power engineering,
- to strengthen the linkages with the European Union,
- to integrate the Centre with the European research area, to provide training on EU's directives concerning power engineering,
- to improve links with outstanding Centres in the European Union, to establish twinning mechanism with the European Centres of Excellence,
- to encourage young researchers to undertake the measures offered by the Centre,
- to transform research potential of the Centre towards advanced fields of the application of superconducting and plasma technologies in power engineering,
- to advance the science through lectures, exchange of ideas, visiting fellows and new approaches through inviting experts from the European Union,
- to develop international cooperation through involvement with remarkable foreign specialists sustainable development.

The activities of the Centre have been divided into 9 workpackages. The workpackages have been selected in such a way, that promoting the interdisciplinary approach. They combined basic and applied activities related to the application of superconducting and plasma technologies in power engineering, providing an attractive base for networking and twinning arrangements. The assumed objectives have been achieved by organizing international conferences, workshops, seminars, PhD studies, summer courses, postgraduate studies, networking and promotion.

The ELMECO International Conference was the forum for exchanging experience and presenting achievements. We organized accompanied workshops in order to upgrade the qualification of the specialists in Poland with the assistance and guidance of the EU countries specialists. The Institute of Electrical Engineering and Electrotechnologies has co-organized post graduate studies for the faculty employees as well as for the employees of industrial companies. Intensive international cooperation of the established Centre enabled to raise the level of PhD studies. The established Centre contributed to strengthen the cooperation with the Marshal of Lublin Province – Mr Edward Hunek, especially in the field of the foundation of the Park of Technology. The Centre became the coordinator of the national network of the research institutions for superconductors applications and plasma techniques in power engineering.

The realization of the project: Centre of Excellence for Application of Superconductivity and Plasma Technologies in Power Engineering ASPPECT has brought many valuable results. The most important are:

1. The CoE ASPPECT is the only in the Lublin Region that carries research and education activities in the field of superconductivity and plasma technologies and their application in power engineering. Attainment the status of CoE by the Institute of Electrical Engineering and Electrotechnologies together with Laboratory of Superconductivity Applications facilitated getting financial resources from Polish

Research Committee (KBN) and Ministry of High Education (MEN) for research, education, necessary laboratory and presentation equipment, library resources and back-up facilities of the Centre ASPPECT, and first of all, received funds allowed to rebuild old store-room "Hala Żółta" in the Campus of Lublin University of Technology and to adapt it for the new seat of the Centre ASPPECT. Thanks to this, the much better conditions for education in the field of superconductivity and plasma technologies have occurred. The centre started to play the role of the scientific and research base for local industry and small and medium enterprises (SMEs).

2. During the project realization the staff of the centre has published more scientific papers, mainly in English in the well recognized international scientific journals.

3. The number of the participants of the international conferences organized by the CoE ASPPECT as well the participation of the centre staff in conferences organized by other research centres considerably increased.

4. The level of undergraduate and graduate thesis prepared under the supervision of the CoE scientific staff has been improved.

5. More professors and scientists from Poland and abroad have visited the CoE ASPPECT.

#### General Project Information

Project Reference: ENK6-CT-2002-80668 Contract Type: Preparatory, accompanying and support measures

Start Date: 2003-01-01 End Date: 2005-12-31

Duration: 36 months Project Status: Completed

Project Acronym: **ASPPECT** Budget: 249.920 €

Person responsible:

**Prof. Tadeusz JANOWSKI**

#### Coordinator:

INSTITUTE OF ELECTRICAL ENGINEERING AND ELECTROTECHNOLOGIES

**TECHNICAL UNIVERSITY OF LUBLIN**

(Lublin University of Technology)

ul. Nadbystrzycka 38A

20-618 LUBLIN, POLAND

<http://www.aspect.pollub.pl/>

### 3. Euro Entrepreneurship - Creation of a cross-border university system to accompany business creators

#### General Project Information

FP6 Programme Acronym: INNOVATION-SME

Project Reference: IPS029082

Contract Type: SME

Start Date: 2000-10-01

End Date: 2002-03-01

Duration: 18 months

Project Status: Completed

Project Acronym: **Euro Entrepreneurship** Budget: 394.188,00 €

Person responsible:

**Dr Dariusz MAZURKIEWICZ (LUT)**

#### Project Description

##### Scientific objectives and approach:

The Euro Entrepreneurship program officially started on September 14, 2000. In the three cross-border regions – Lorraine, Wallonie, Baden Württemberg, the question of the academic contribution to the creation of activity gave rise to the implementation of important and original systems for technological and managerial assistance in the creation of companies by institutions of Higher Education. Higher Education attaches a great importance to those accompaniment systems. Some universities of those regions also decided to take part in the project. Their goal was to jointly conduct an experiment that would lead to a permanent collaboration between them. This collaboration concerned a research-based accompaniment for the creation of businesses.

The purpose of the Euro-entrepreneurship program was to develop a transborder approach, in the spirit of Sar-Lor-Lux but wider, of the co-operation between the universities of the areas of Wallonia, Lorraine, Baden-Württemberg and Luxembourg. It was based on a modern approach of the operation of SMEs and on an innovative approach of the training and the accompaniment of the start-up businesses. Its ambition was to try out this approach and to examine its relevance in relation to the interests of company creators and universities.

The principal partners of the Euro-entrepreneurship project represented exploitation of academic research units from Belgium, France, Germany, Sweden, Poland and Luxembourg that was, from an extended transborder area. This large area was selected as a ground for experimentation to promote the development of innovating companies, i.e. to provide the foundations of a first proximity network between academic incubation structures. In this network "Ideas, technologies, offered of service and partnership" to the attention of the companies creators would be exchanged, a type of exchange which was highly desirable at the European level, as was underlined by Roger-Gerard Schwartzberg in his intervention of November 21, 2000 in Lyon

(Towards a European Space of the Innovation).

This association of academic entities in the carrying out of a common program of activity was well in line with the virtual centres of excellence envisaged as part of the 6th PCRD.

However, the project was in the spirit of 6FP recommendations, in particular those concerning:

- Complementary actions intended to help SMEs to develop their ability to operate on a European and international scale.
- Initiatives to support the creation of companies by "researcher - entrepreneurs".
- Premiums for the creation of companies for European researchers in other European countries.
- Training grants in an incubator of another European country for the acquisition of experience as regards company creation.

Moreover, the collaboration between the academic structures of these cross-border regions provided a much more effective tool than the present scattered efforts. Indeed, academic research allowed to promote a European perspective among companies. Presently, the concept of co-operation took great importance in the management of companies of any size, and in particular of SMEs. A large body of current research in management focused on the concept of co-operation between firms. For example, R. Richardson or J.L. Gaffard argued that the constitution of co-operation networks was one of the fundamental factor for the dynamics of organisational and technological innovation, as well as the winover of markets in a competitive international environment.

It was this modern approach of management of organizations that the Euro Entrepreneurship program proposed to foster co-operation among transborder universities through :

- An exchange of ideas, best practices, and information,
- The physical mobility of companies creators,
- The networking of structures known as "incubators" supported by the universities,
- The flexibility of the newly-created organizations.

**Coordinator:**

**The University Nancy II, (France)**

Boulevard Albert 1er, 23  
NANCY, 54015  
FRANCE

**Participants:**

1. The University of Liège, (Belgium)
2. The Fachhochschule of Karlsruhe, (Germany)
3. Lublin University of Technology (Poland)
4. The University of Umea, (Sweden)

**Contractors:**

5. The Company LORASI (France)
6. FEDIL (Federacja Przedsiębiorstw, Luxembourg)

**4. Marie Curie Individual Fellowship No. MCFI-2002-00219-A- New generalized model for engineering materials including internal structure modeling**

General Project Information

FP6 Programme Acronym: Marie Curie Individual Fellowship No. MCFI

Project Reference: MCFI-2002-00219-A      Contract Type: M2 – FP5IFP

Start Date: 2003-09

End Date: 2005-07

Duration: 10 months

Project Status: Completed

Project Acronym: **MCFI**

Budget: -

Person responsible:

**Prof. Tomasz SADOWSKI**

Project Description

Scientific objectives and approach:

The knowledge to be transferred is related to the modeling of advanced materials by considering the internal structure and is an approach which has been developed by the Applicant. It allows for the introduction of all information about the internal structure of any polycrystalline material such as grain size, grain boundaries, porosity, microcracks and plasticity. The model provides a description of the gradual degradation of the elastic material properties. During the Fellowship, this model will form the basis for the preparation of a generalized version in order to create a similar, but more comprehensive, model to that recently developed in the USA. The finite element method will be used to develop complex polycrystalline models, based on internal structure, and also to include small thickness layer interphase effects between grains. In this way, the new and general-purpose version of the Applicant's multiphase polycrystalline material model will be developed, which creates the basis for the description of the behavior of a large class of modern engineering materials with a wide range of practical application. The ability to accurately model these materials is of particular importance when the material is subjected to creep and/or variable (fatigue)

loading at high temperature.

Objectives and impact of transfer:

- Develop the general-purpose model which is a viable alternative to that developed in the USA,
- Establish a scientific group with expertise in this form of modeling,
- Present seminars to UWS staff and students on this subject,
- Apply the new model to practical engineering problems in the automotive and aerospace industry, using the well-established links between UWS and local/national industry
- Present the work in suitable journals and at appropriate international conferences,
- Prepare an application for further research funding within 6 FP

**Coordinator:**

**University of Wales Swansea, United Kingdom**

**Participants:**

Lublin University of Technology

**[FP6 Project Record of the Lublin University of Technology](#)**

**5. Development of Regional Innovation Strategy of Lubelskie Voivodship  
– RIS LUBELSKIE**

**Project Description**

**Objectives:**

The purpose of employing this project is to complete the preconditions necessary to implement the innovation strategy for the Lubelskie Voivodeship. Within individual stages assignments will be carried out meaning to increase the collaboration of the most important regional institutions- that are active and experienced in areas pertaining to the transfer and innovation of technology, including the heads of the Lubelski Regional Government, scientific research institutions, business organisations, industry representatives etc. Its effect will be to create essential analyses assessing the needs and capabilities of innovation companies representing areas of the economy vital to the development of the Lubelskie Voivodeship. The expected analyses will allow for an evaluation, as to what sorts of solutions innovative firms expect, as well as the sorts of problems they run into, what kind of innovation solutions they implement and to

what extent innovation is applied within these firms. Analysis of the companies demands for technology will correlate with the evaluation of the capabilities (supply) of the scientific research institutions. The results of the research and the SWOT analysis of the region will transfer onto the definition and development as well as implementation of the Strategy and future regional endeavors. These endeavors will pursue the improvement of framework conditions for the creation and utilisation of innovation in the region, thereby, taking full advantage of available methods as well as the existing and future developmental potential of the Lubelskie Voivodeship.

### General Project Information

Project Reference: FP6-014641 INNOVATION-2002-2.1	Contract Type: Development of regional innovation strategies Specific Support Action
Start Date: 2005-06-01	End Date: 2008-01-31
Duration: 42 months	Project Status: Execution
Acronym: <b>RIS LUBELSKIE</b>	Budget: 361 250 €
	Person responsible: <b>Prof. Waldemar WOJCIK</b>

#### Coordinator:

#### **LUBLIN UNIVERSITY OF TECHNOLOGY**

Faculty of Electrical Engineering and Computer Science / Department of Electronics  
ul. Nadbystrzycka 38D  
20-618 Lublin, POLAND

#### Participants:

1. INSTITUTE OF AGROPHYSICS OF POLISH ACADEMY OF SCIENCES, Poland
2. CONSEIL REGIONAL D'ALSACE, France
3. CONSEIL RÉGIONAL DE LORRAINE, France
4. INDUSTRY, TRADE AND TOURISM DEPARTMENT. BASQUE GOVERNMENT, Spain
5. FUNDACION Labein, Spain
6. HELSINKI UNIVERSITY OF TECHNOLOGY, Finland
7. MARSHALLS OFFICE OF THE LUBELSKIE VOIVODSHIP, Poland

[http://ris.lubelskie.pollub.pl/  
index.php?option=com\\_frontpage&Itemid=1](http://ris.lubelskie.pollub.pl/index.php?option=com_frontpage&Itemid=1)

## 6. Marie Curie Individual Fellowship No. MCFI-2002-00219-A - New generalized model for engineering materials including internal structure modeling

### General Project Information

FP6 Programme Acronym: MCFI

Project Reference:

MTKD - CT – 2004 - 014058

Start Date: 2005-04-01

Duration: 48 months

Project Acronym: **MCMACM**

Contract Type: Marie Curie Host Fellowships for the Transfer of Knowledge (ToK)

End Date: 2009-03-31

Project Status: Execution

Budget: 1.060403 €

Person responsible:

**Prof. Tomasz SADOWSKI (LUT)**

### Project Description

#### Scientific objectives and approach:

The proposed project aims for establishing a leading research and education centre in the Middle-East part of Europe in modern composite materials technology and non-linear mechanics. With regard to research it is envisaged to develop new areas of competence at LUT comprising multi-disciplinary aspects of composite materials modeling with application to civil, mechanical and aircraft engineering. This field is of crucial importance, as composite materials (having unique combination of mechanical, physical and functional properties) are playing more and more important role in designing of different engineering structures. Though different aspects concerning composite properties have been investigated, the major current problem in the modeling of modern composites is to link together nano-, micro-, meso- and macro-scales to get perfect description of the composite behaviour at different loading, temperature and environmental conditions. In the project it is also envisaged the analysis of the civil engineering, mechanical and aerospace structures made of composite and smart materials using non-linear theory, i.e. non-linear dynamics of discrete and continuous systems, chaotic motion, new techniques of control of chaotic and regular motion, coupling of non-linear vibration modes, optimisation of the structure and methods of experimental research and identification of models. With regard to education, it is envisaged to provide teaching at the European level, consistent with EC priorities – by introducing new courses to PH.D. studies programme and training LUT staff at partner institutions.

To provide planned significant increase of LUT quality in research and education as well as overall capability, the following activities are envisaged: a) recruitment of experienced researchers for: doing joint research and lecturing for graduate students b) recruitment of more experienced researchers for: delivering short intensive courses (for P.h.D. students), advanced courses (for LUT staff), c) secondments of LUT staff at

partner institutions:

-more experienced researchers will get knowledge concerning the latest ideas in modelling of composite materials and their applications to engineering structures,

- experienced researchers will get acquainted with specific methods of numerical applications and will be trained in the field of experimental mechanics.

The project implementation will strengthen co-operation with the local industry: Polish Aviation Work Swidnik S.A., promote new technologies of composites and structural elements production and foster innovation to the local enterprises. In terms of socio-economical aspects, ToK project will help Lublin area (where LUT is situated) as less favoured region in comparison to western part of Poland, to compensate disproportion at national level.

The proposed project will increase international competitiveness of LUT in the field of modern composite materials and their applications to the mechanical, aerospace and civil engineering structures. Involvement of LUT in joint European research projects will be enhanced by increase of long term research and collaborative capacity of LUT with EU institutions.

**Coordinator:**

**LUBLIN UNIVERSITY OF TECHNOLOGY**

Faculty of Civil and Sanitary Engineering

/ Department of Solid Mechanics

ul. Nadbystrzycka 38D

20-618 Lublin, POLAND

**Participants:**

1. Martin Luther University, Germany
2. University of Glasgow, Great Britain
3. University of Wales Swansea, Great Britain
4. Polytechnic University of Marche, Italy
5. Fraunhofer Institute for Mechanics of Materials, Germany
6. University of Rome la Sapienza, Italy
7. University of Aberdeen, Great Britain

## 7. NEPIRC - North East Poland Innovation Relay Centre

### General Project Information

FP6 Programme Acronym: IRC

Project Reference: NEP IRC 003464

Contract Type: SSA

Start Date: 2004-04

End Date: 2008-03

Duration: 48 months

Project Status: Completed

Project Acronym: **NEPIRC**

Budget: 508 742 €

Person responsible:

**Prof. Stanisław PLASKA (LUT)**

### Project Description

#### Scientific objectives and approach:

NEPIRC strategic objective is to provide cost-effective services that promote transnational technology co-operation which responds to specific regional needs. NEPIRC achieves this strategic objective through 3 operational objectives:

1. Enhancement SMEs competitiveness by supporting trans-national inward technology transfer focused on regional specific technology needs.
2. Identifying exploitable technologies and research in the NEPIRC regions and promoting them in Europe, via partner search cooperation with IRC network.
3. Strengthening regional partners linking them with IRC network to adopt in NEPIRC regions best European practices in providing services related to transnational technology transfer and exploitation of Community RTD results.

The NEPIRC carries out work in synergy with the national and regional support infrastructure including Polish and European IRC network, network of National Contact Point for European Research Programs, EuroInfo Centres as well as agents and organisations, such as universities, research institutes and industrial centres, industrial associations, institutions financing SMEs, regional development agencies, etc.

The NEPIRC concentrates on SMEs as their principal target group, but other regional organisations are also targeted, such as universities, research centres and financial institutions, where appropriate, big companies, as well as professional and trade associations, technology brokers and regional development agencies. Important part of NEPIRC activities is devoted to networking of regional organizations.

#### Coordinator:

**Warsaw University (WU) - University Technology Transfer Center (UTTC) - Poland**

#### Participants:

1. University of Warmia and Mazury in Olsztyn (UWM), Poland;
2. University of Białystok (UoB), Poland;
3. Lublin University of Technology (TUL), Poland;
4. CASE-Advisors Ltd. (CASE), Poland.

<http://www.nepirc.pl/nepirc/index.php?lang=en>

## Other Projects Record of the Lublin University of Technology

### **8. Safe and Sustainable Management of Municipal Solid Waste in Bangladesh through the Practical Application of WasteSafe Proposal - WasteSafe - II**

#### General Project Information

FP6 Programme Acronym: Asia Pro Eco Programme – Phase II

Project Reference: ASIE/2006/122-432      Contract Type:  
EuropeAid/122884/C/ACT/Multi

Start Date: 2007-01-01      End Date: 2009-12-31

Duration: 36 months      Project Status: Completed

Project Acronym: **WasteSafe - II**      Total budget: 555 680 €  
( 58 108 € - LUT)

Person responsible:  
**Prof. Witold STEPNIEWSKI (LUT)**

#### Project Description

Scientific objectives and approach: In the least developed Asian Countries (LDACs), due to inadequate waste management, financial constrains, absence of appropriate technology, lack of people's awareness, motivation and participation, ineffective legislation and law enforcement, municipal solid waste (MSW) remains unmanageable and becomes one of striking environmental and social issues. To have a clean, hygiene and environment-friendly city, the generated MSW must be managed in an appropriate way, which is absent in the most of the cities of LDACs including Bangladesh. To solve this striking issue, the Department of Civil Engineering of Khulna University of Engineering and Technology (KUET), Bangladesh conducted a twelve months (14.04.2004 to 13.04.2005) feasibility study project "Integrated management and safe disposal of municipal solid waste in LDACs-WasteSafe", co-financed by European Commission. The Project proposed a system named as "WasteSafe proposal" with some specific guidelines. With the analysis and evaluation of practical application of this proposal, an appropriate MSW management can be established for any specific region. To this endeavor, a three years (01.01.2007 to 31.12.2009) partnership project co-financed by Asia Pro Eco II Programme of EC " Safe and Sustainable Management of Municipal Solid Waste in Bangladesh Through the Practical Application of WasteSafe Proposal - "WasteSafe II" has been undertaken by KUET, Bangladesh in the partnership of Khulna City Corporation (KCC), Bangladesh; Bauhaus University Weimar, Germany; Asian Institute of Technology (AIT), Thailand; Bauhaus International Research & Education Center (BIREC), Germany and Lublin University of Technology (LUT), Poland.

Overall objective of the proposed project is to enhance the environmental state of LDACs by introducing appropriate waste management master plan for MSW and complete technical guidelines for all tiers of management in the perspective of local conditions, technological capabilities and the present needs of these countries considering Bangladesh as a case study country. The proposed project will be built directly on the results of the previous Asia Pro Eco project "Integrated Management and Safe Disposal of Municipal Solid Wastes in Least Developed Asian Countries-WasteSafe". Practical testing of site-adapted waste management master plan approaches based on WasteSafe proposal, demo compost plant and landfill cell are planned to implement in Khulna, the third largest city of Bangladesh on the basis of the selected areas. Other project partners will conduct accompanying research, analysis and synthesis activities.

**Coordinator:**

**Department of Civil Engineering,  
Khulna University of Engineering & Technology (KUET)  
Khulna-9203, Bangladesh**

**Participants:**

1. Khulna City Corporation, Bangladesh
2. School of Civil Engineering, Asian Institute of Technology  
Klong Luang, Pathumthani 12120, Thailand
3. Bauhaus University Weimar, Germany
4. Bauhaus International Research & Education Centre, Germany
5. Lublin University of Technology, Poland

[http://www.wastesafe.info/02\\_project.htm](http://www.wastesafe.info/02_project.htm)

## **9. BISNEP - Business and Innovation Support for North - East Poland**

### General Project Information

FP6 Programme Acronym: CIP

Project Reference: ENT/CIP/07/0001 – 150261 BISNEP      Contract Type: CIP

Start Date: 2008- 04

End Date: 2014-04

Duration: 72 months

Project Status: Execution

Project Acronym: **BISNEP**

Budget: 1 424 390 €  
(209 460 € - LUT)

Person responsible:  
**Prof. Stanislaw PLASKA (LUT)**

### Project Description

#### Scientific objectives and approach:

The BISNEP (Business and Innovation Support for North-East Poland) will provide professional, high quality and cost effective services for small and medium size enterprises and RTD units operating in the area of three Polish regions (voivodships) – Warminsko-Mazurskie, Podlaskie and Lubelskie.

BISNEP strategic objective is to provide cost-effective, integrated business and innovation support services for the regional SMEs that will contribute to the competitiveness and improve innovative capacity of the Community. BISNEP, as a part of a new business and innovation support network, will integrate and rationalize several existing EU measures that support business and innovation, implementing no wrong door concept.

This strategic objective will be achieved through BISNEP four operational objectives:

#### 1. Support for European business cooperation

BISNEP will provide high-quality services to enhance the competitiveness of regional SMEs that are interested in benefiting from the European single market and want to improve their competitiveness.

The services will respond to needs of BISNEP clients and develop synergies with political authorities and other business community actors. This objective will be reached by offering assistance and advice services to SMEs in order for them to be able to benefit from European programmes and initiatives;

providing feedback from SMEs to the Commission to ensure that future legislation responds to SME needs; offering services to develop trans-national co-operation between SMEs and help them finding suitable business partners to expand their business and enter new markets.

#### 2. Support for the European innovation, technology and knowledge transfer

BISNEP will provide instruments contributing to the process of closing the 'innovation gap' between Europe and its main competitors. This objective will be reached by offering high quality, professional services bringing innovative products to international market efficiently and effectively, boosting innovation capacity and productivity of European and regional businesses, contributing to the creation of jobs, growth and sustainable development of European economy. BISNEP will disseminate information and raise awareness regarding innovation-related policies, legislation, and support

programmes; provide brokerage services for technology and knowledge transfer, and for partnership building between all kinds of innovation actors; stimulate the capacity of firms, especially SMEs to innovate; engage in the dissemination and exploitation of research results; facilitate linkage to other innovation services including intellectual property related services. BISNEP partners will establish strong cooperation with other actors, which are not formal network partners. Relevant organizations include professional associations, clusters, networks, university technology transfer offices and others.

### 3. Services encouraging the participation of SMEs in FP7

As the participation of SMEs in the Research Framework Programme is crucial for their competitiveness proper information dissemination, awareness raising, advertising, assistance and training on all aspects of participation in the FP7 is of great importance. BISNEP partners, dealing with regional SMEs will raise awareness among SMEs regarding the FP7; help SMEs to identify their RTD needs and find relevant partners; assist SMEs in the preparation and coordination of project proposals for participation in the Community Framework Programme for RTD. All actions will be organized in close collaboration, avoiding any duplication, with SME National Contact Points.

### 4. Creation of the single network of excellence

BISNEP partners will foster co-operation between network partners in the same territory, as well as with other SME support service providers; participate in network governance; establish an effective project coordination, communication, management structure and decision making mechanism, which will ensure effective and efficient work planning, monitoring and reporting; ensure proper staff training, networking and quality interaction with the network.

#### **Coordinator:**

**Warsaw University (WU) - University Technology Transfer Center (UTTC) - Poland**

#### **Participants:**

1. Podlaska Regional Development Foundation (PRDF), Poland
2. University of Warmia and Mazury in Olsztyn (UWM), Poland
3. Warmia – Mazury Regional Development Agency (WMRDA), Poland
4. Lublin University of Technology (LUT), Poland
5. Lublin Development Foundation (LDF), Poland.

## 10. Rural Areas, People and Innovative Development - RAPIDO

### General Project Information

FP6 Programme Acronym: SSPE

Project Reference: SSPE-CT-2006-44264      Contract Type: SSPE

Start Date: 2007-03

End Date: 2009-02

Duration: 24 months

Project Status: Completed

Project Acronym: **RAPIDO**

Budget: 350 200 €

(22 200 € - LUT)

Person responsible:

**Prof. Stanislaw SKOWRON (LUT)**

### Project Description

Scientific objectives and approach: A large percentage of Europe's territory consists of rural areas which contain more than half of its population. The Lisbon Strategy, which aims to make Europe the most competitive, knowledge-based society in the world, is focusing on jobs and economic growth, not at least in rural areas. Innovation is seen as precondition to reach these goals. Despite three generations of rural development policies and with the 4th starting in 2007, rural areas still face considerable problems. Many problems of European societies, such as an ageing population, high unemployment rates, social disparities and the lack of adaptive potential to the global market, are more pronounced in rural areas than elsewhere. To overcome these problems, it is essential to link public, private and inter-sectoral initiatives to foster innovation.

RAPIDO has been established to analyze current best practices concerning the development of innovation in agriculture, forestry, the food sector and the wider rural areas as well as to analyze methods to transfer knowledge to different target groups. RAPIDO is a specific support action under the 6th EU Framework Research Programme that runs from March 2007 to February 2009. To achieve this aim RAPIDO has the following specific objectives:

1. To identify key areas on which to focus in agriculture, the food industry and forestry.
2. To exchange information on experiences and strategies in rural development and to foster mutual learning and knowledge exchange across regions in Europe.
3. To identify key factors for success, and also existing barriers and constraints to the creation of innovation in rural areas.
4. To identify sectors where innovation would help to create employment in rural areas.
5. To analyze the role of different actors (public / private / industry / policy makers / community stakeholders) in the promotion and uptake of initiatives.

6. To review the most promising methods to facilitate innovation (processes) and knowledge transfer.
7. To evaluate the role of ETAP (Environmental Technology Action Plan) in fostering innovation in rural areas.

To give recommendations on how to facilitate innovation through A: rural policies (question of policy design, efficiency of policies) B: public/private and sectoral initiatives to foster innovative development, C: funding mechanisms and D: bottom up initiatives (local / regional bottom up initiatives).

**Coordinator:**

**Ecologic - Institute for International and European Environmental Policy**

Pfalzburger Strasse 43/44

Bartningstrasse 49

D - 10717 Berlin, Germany

Tel.: ++ 49 30 86880 0

Fax: ++ 49 30 86880 100

[www.ecologic.eu](http://www.ecologic.eu)

**Participants:**

1. [Fondazione Eni Enrico Mattei \(FEEM\)](#), Italy
2. [Association for the promotion of sustainable Agriculture \(FNL\)](#), Germany
3. [University of Trás-os-Montes and Alto Douro \(UTAD\)](#), Portugal
4. [Institute of Technology and Regional Policy, JOANNEUM RESEARCH](#), Austria
5. [Lublin University of Technology \(LUT\)](#), Poland
6. [Environmental Futures Ltd. \(EFL\)](#), United Kingdom
7. [University of National and World Economy \(UNWE\)](#), Bulgaria
8. [University of Craiova](#), Romania
9. [German Chamber of Agriculture](#), Belgium
10. [University Valencia – Estudi General \(UVEG\)](#), Spain

<http://www.rapido-fp6.eu/>

## 11. TEMPUS

### General Project Information

FP6 Programme Acronym: **TEMPUS**

Project Reference: CD-JEP-26235-2005

Contract Type: CD\_JEP

Start Date: 2006-09-01

End Date: 2009-08-31

Duration: 36 months

Project Status: Completed

Project Acronym: **TEMPUS**

Budget: 304,050,00 €  
(LUT - 40 500 €)

Person responsible:  
**Prof. Stanislaw GRZEGÓRSKI**

#### Project Description

##### Scientific objectives and approach:

Developing and implementation of second (MSc) level academic course on Informatics as an additional education for non-informatics in Kyrgyz National University, Bishkek (Kyrgyzstan).

The main tasks in the project:

- developing new program of the course,
- preparation didactics materials,
- preparation platform for distance learning,
- staff training.

##### Coordinator:

##### **Universite Pierre Mendes France Grenoble II, Grenoble (France)**

Rue Des Universites 151  
Saint Martin d Heres  
France

##### Participants:

1. Kyrgyz National University, Bishkek (Kyrgyzstan)
2. Lublin University of Technology, Lublin (Poland)
3. Universidad de Alicante, Alicante (Spain)
4. Universita degli studi dig ENOVA, Genova (Italy)

## 12. Leonardo Da Vinci

#### General Project Information

FP6 Programme Acronym: LdV

Project Reference:

Contract Type: PL/06/A/PIb/174460

Start Date: 2006-07-01

End Date: 2008-03-31

Duration: 21 months

Project Status: Completed

Project Acronym: **LdV**

Budget: 4 666 €

Person responsible:

**Dr Andrzej SMOLARZ**

#### Project Description

### Scientific objectives and approach:

The common goal of all project partners is such training of high grade engineers that after graduating has not only a “lab-scale experience”, but also practical at European level. The direct result is increased probability that student finds an employment directly after graduation. The role of “Sistemas Fotónicos S.L.” consists in offering a possibility to get familiar with newest technologies in optoelectronics as they are being implemented, with designing of real optical communication technologies as well as problems of everyday engineering practice. The Project will be realized in Spain during 21weeks for each student.

### Coordinator:

#### **Lublin University of Technology**

Faculty of Electrical Engineering and Computer Science  
38A Nadbystrzycka Str.  
20-618 Lublin, Poland  
tel. (+48) 81 53 84 337  
e-mail: a.smolarz@pollub.pl

### Participants:

“Sistemas Fotónicos S.L.” Madrid, Spain

## [FP7 Project Record of the Lublin University of Technology](#)

### **13. Centre of Excellence for Modern Composites Applied in Aerospace and Surface Transport Infrastructure - CEMCAST**

#### General Project Information

FP7 Programme Acronym: SP4- Capacities

Project Reference: CSA-SA- FP7-REGPOT- Contract Type: No 245479  
2009-1

Start Date: 2010-04-01

End Date: 2013-04-01

Duration: 36 months

Project Status: Execution

Project Acronym: **CEMCAST**

Budget: 2.560.000 €

Person responsible:

**Prof. Tomasz SADOWSKI**

#### Project Description

### Scientific objectives and approach:

The project aims at continuation and advancement of activities initiated in FP6 ToK project MTKD CT - 2004 014058 at the Centre for Modern Composite Materials (CMCM) created at the Lublin University of Technology (LUT). It is planned:

- To unlock and develop the full research potential and increase research capacities of the CMCM staff in the areas comprising modelling of composite and smart materials and their applications to aerospace and transport infrastructure (pavements and airfields), also modelling and control of dynamics of structures made of composites
- To establish new area of competence: innovative technologies for manufacturing of composites,
- To upgrade research equipment for testing of composite materials

The project objectives will be accomplished by a coherent set of the following complementary actions: twinning collaboration, recruitment of experienced researchers, organisation of workshops and mini-symposia, participation in international conferences, purchase of equipment.

The project implementation will result in creating a leading research centre in the Middle-East part of Europe in the multidisciplinary area encompassing modelling and experimental testing of composite and smart materials and their application to aircrafts, pavements and airfields. The proposed project will strengthen co-operation with the regional industry. In terms of socio-economic aspects it will help to compensate disproportion (Lublin region is a less favoured one).

It is also envisaged that the project will increase visibility and competitiveness of the CMCM at the international level in the field of composite materials and their applications to engineering structures, resulting in deeper involvement of the CMCM in FP7 projects and better integration of the CMCM in the ERA.

### Coordinator:

#### **Lublin University of Technology**

Faculty of Civil Engineering and Architecture

40 Nadbystrzycka Str.

20-618 Lublin, Poland

tel. (+48) 81 53 84 386

e-mail: t.sadowski@pollub.pl

### Participants:

1. University of Glasgow (Glasgow, Wielka Brytania),
2. University of Aberdeen (Aberdeen, Wielka Brytania),
3. University of Aalborg (Aalborg, Dania),
4. Martin-Luther University, (Halle, Niemcy),
5. University of Stuttgart, (Sztuttgart, Niemcy),
6. University of Ancona (Ankona, Włochy),
7. University La Sapienza (Rzym, Włochy),
8. University of Timisoara (Timisoara, Rumunia),

9. University of Rousse (Russe, Bułgaria),
10. National University of Athens (Ateny, Grecja),
11. University of Porto, (Porto, Portugalia)

## **14. Farming photovoltaic flowers: a new challenge for land valorization within a strategic eco-sustainable approach to local development – PVs in BLOOM**

### General Project Information

FP7 Programme Acronym: IEE

Project Reference : IEE-07-762

Start Date: 2008-10-01

Duration: 36 months

Project Acronym: **PVs IN BLOOM**

Contract Type: IEE/07/762/si2.499457

End Date: 2011-10-01

Project Status: Execution

Budget: 1.435.936 €  
(LUT- 149.382 €)

Person responsible:

**Prof. Jan Marian OLCHOWIK (LUT)**

### Project Description

#### Scientific objectives and approach:

The proposal of installing small-scale Photovoltaic Panels in rural and non rural land aims at developing awareness and knowledge about the benefits of Photovoltaic Panels Plantations (PVPP) in public and private sectors. The development of solar energy production can re-qualify small and medium marginal or sterile areas through an eco-sustainable strategic approach posing the basis for a widespread energy network. A technical handbook of PAPP will be elaborated together with an administrative manual to make the installation of PAPP easier and faster on a Municipal level in Europe. It will be distributed to the 600 municipalities involved in the proposal. An online guide and a qualified facilitators network belonging to the public administrations (energy agencies and chambers of commerce) will support new Entrepreneurs and public administrations in drawing up the PAPP business plan and on facing other most crucial difficulties that could run into the starting-up of a PAPP.

#### Coordinator at the LUT:

#### **Lublin University of Technology**

Faculty of Fundamentals of Technology

38 Nadbystrzycka Str.

20-618 Lublin, Poland

tel. (+48) 81 53 84 673/541

e-mail: j.olchowik@pollub.pl

#### Participants:

1. Unione Regionalne delle Camere di Commercio Industria, Artigiano e

- Agrokultura del Reneto (UCV), Venezia – Włochy (**coordinator**)
2. Multiss S.p.A. Punto Energia Provinciale di Sassari (PEPS), Sassari- Italy
  3. Chambers of Commerce Development Company of Central Macedonia (EKEM), Veria- Greece
  4. Municipal Development Company of Milies (AEM), Milies – Greece
  5. University Jaen (UJA), Jaen – Spain
  6. Camara Oficial de Comercio (COCINV), Valencia – Spain
  7. Lublin University of Technology, Lublin – Poland
  8. Innovations Region Styria (IR Styria), Graz – Austria
  9. Camera di Commercio Italo-Slovacca (C.C.I.S.), Bratislava –Slovak Republic

#### **14. Sterilization of variety of materials, biomedical and food production equipment using low thermal atmospheric pressure plasma jet combined with advanced oxidation processes – PLASMA STERILIZATION**

##### General Project Information

FP7 Programme Acronym: Marie Curie IRG

Project Reference : FP7-PEOPLE-2009-RG

Contract Type: : PIRG05-GA-2009-249257

Start Date: 2010-02

End Date: 2014-02

Duration: 48 months

Project Status: Execution

Project Acronym:

Budget: 100 000 €

**PLASMA STERILIZATION**

Person responsible:

**Prof. Henryka Danuta STRYCZEWSKA**

##### Project Description

The compact, portable, low-temperature gas discharge plasma device for cold sterilization of various heat-sensitive surfaces and materials is proposed. The main reactor will be atmospheric-pressure plasma jet (APPJ). The features of the sterilizer will be as follows: - ability to work at the atmospheric pressure in several gas flow, frequency and current- voltage regimes, - application of various substrate gases: oxygen, air, nitrogen, carbon dioxide, and discharge stabilizing additives (argon, helium, tetrafluoromethane, ketone, methane), - flexibility and multiapplicability due to the exchangeable sub-units of the device: various sized and shaped tips, nozzles for gas, vapor, liquid spray and foam, which could be further combined with UV lamp (Advanced Oxidation Processes, AOP). Through the combination of various decontamination techniques we hope to achieve 3D treatment effect instead only surface treatment achieves in most APPJ treatment technologies so far. Device will be used for inactivation of pathogens in plasmonic and biofilm form. Influence of the plasma treatment on the denaturing of materials (paper, plastics, fabrics, etc.) will be studied. Proposed sterilizer will be tested for preservation of solid food. Efficiency of

the plasma- UV- antibacterial coatings will be tested.

**Coordinator:**

**Lublin University of Technology**

Institute of Electrical Engineering and Electrotechnologies

38A Nadbystrzycka Str.

20-618 Lublin, Poland

tel. (+48) 81 53 84 289

e-mail: [h.stryczewska@pollub.pl](mailto:h.stryczewska@pollub.pl)