

## **Executive summary:**

The ICPE-HYFC project's aim is to unlock and develop the capacity and research potential at INCDIE ICPE-CA, in the field of renewable energy, mainly Hydrogen and Fuel Cells Technologies (thematic priority in the EC FP7), by developing a high quality and promising research centre for hydrogen and fuel cells (HyFCLab) at INCDIE ICPE-CA, as reference research entity both in Romania and EU's convergence region.

A major infusion of specialized equipments was done, in correlation with activities for improvement of RDI human resources quality and expertise.

- Two equipments purchased and installed in the 20th month of the project: Equipment 1: Gravimetric Sorption Analyser and Equipment 2: Coating System.

The project had a special focus on the experienced research staff recruitment and specialists training by exchange of know-how and experience activities at trans-national level.

- 2 incoming specialist recruited by INCDIE ICPE-CA;
  - New job opportunities have been opened and 6 young scientists (under 35 old) have been employed in the Department for Energy Efficiency in Conversion and Consumption (ECCE);
  - 10 Agreements on Scientific And Technological Collaboration signed;
  - Specific returning mechanisms after the end of training has been established;
  - 13 people involved in the staff exchange program, from which 10 young researcher under 35 year old;
  - 13 persons were trained at international short term training programs. About 3 of them are young scientists under 35 years old.
- Facilitating the knowledge transfer, at national, regional and international level, by organizing specialised workshops and conferences, was also under rigorous attention.
- 4 workshops organized, with a total no. of 347 participants, from which about 29 special invited lecturers from Romanian, EU (Poland, France, Greece, Spain, Germany, England, Czech Republic, Bulgaria, Turkey, Moldova and Ukraine) and Chinese research centers and universities;
  - 1 workshop in preparation (out of the project period as further implementation of the project's results).

Increasing the international visibility of INCDIE ICPE-CA and HyFCLab respectively was another issue of the project. This was realised by focused dissemination activities of the obtained scientific results, short presentations of the project and its results toward public bodies, innovative SMEs and social environment, as well as publications in scientific journals.

- 35 attendings to national and international conferences and workshops;
- 9 attendings to national and international exhibitions;
- 8 promotional activities realised;
- 24 Scientific presentations and publications in the conference proceedings;
- 6 Publications (peer reviewed) in journals and conference proceedings, acknowledging the project.

INCDIE ICPE-CA is going to have an important participation in the European research cooperation and by its expertised contribution will participate to the improvement of the regional economic level and reinforcement of the the competitiveness in the European Research Area.

- 12 proposals submitted in the regional calls: South East Europe (SEE) Programme; Romania-Bulgaria Crossborder Cooperation Programme 2007-2013; Joint Operational Programme "Black Sea Basin 2007-2013; MNT ERANET Programme;
- 4 proposal funded in the regional calls;
- 8 proposals submitted in the FP7 Programme;
- 1 International sub-contract signed in the NMI3-II/FP7, Nr. 283883 FP7 Project.

## **Project Context and Objectives:**

### **Summary description of project context and objectives:**

Building the knowledge society through research, innovation, and education in a stronger partnership with Member States is at the heart of the renewed Lisbon strategy - the partnership for growth and jobs. The EU's research policy has a major role to play in this respect. All these efforts are aimed at implementing the Lisbon Strategy by helping to build an integrated European Research Area where the best research can be carried out, capable of attracting investment from all over the world.

The growing importance and attention in the field of sustainable renewable energy technologies, on behalf of European Commission and lately of Romanian Government, as a member with fully rights of EU, in the context of global politics regarding fighting against climatically changes, is conditioned by developing strong innovation and research centres throughout Europe. Considering lasting sustainable development politics, strongly promoted in the last decades by European Commission, by accelerating research in the field of renewable energy technologies could be one of the main key point of the development of the "most dynamic competitive knowledge-based society in the world" (17 December 2007 - Treaty of Lisbon, Art.176A, pct.(c) - promote energy efficiency and energy saving and the development of new and renewable forms of energy).

Creating strong research centres throughout EU's Convergence Regions could bring benefits in two major directions:

- Development of EU specialized research networks will be the engine of European research and innovation in sustainable renewable energy technologies field.
- Unlocking the research potential and developing innovative research centers, with strong RTD capacity and expertised human resources in the new EU member states, will open the premises of developing strategic partnerships between research entities in the Union, and thus, contributing to the regional sustainable development and increase of scientific excellence and visibility in the ERA.

The project aim is to unlock and develop the capacity and research potential at INCDIE ICPE-CA, in the field of renewable energy, mainly Hydrogen and Fuel Cells Technologies (thematic priority in the EC FP7), by developing a high quality and promising research centre for hydrogen and fuel cells (HyFCLab) at INCDIE ICPE-CA, as reference research entity both in Romania and EU's convergence region.

INCDIE ICPE-CA, by its HyFCLab, is going to have an important participation in the European research cooperation, and, by its expertised contribution, will participate to the improvement of the regional economic level and reinforcement of the competitiveness in the European Research Area.

In this idea, a major infusion of specialized equipments will be done, in correlation with activities for improvement of RDI human resources quality and expertise. The project has a special focus on the experienced research staff recruitment and specialists training by exchange of know-how and experience activities at trans-national level. Facilitating the knowledge transfer, at national, regional and international level, by organizing specialised workshops and conferences, is also under rigorous attention. Increasing the international visibility of INCDIE ICPE-CA and

HyFCLab respectively is another issue of the project. This will be realised by focused dissemination activities of the obtained scientific results, short presentations of the project and its results toward public bodies, innovative SMEs and social environment, as well as publications in scientific journals.

HyFCLab is addressing these issues and helping to facilitate a smooth transition to a new energy future. In collaboration with industry, public and private sectors, other institutes and laboratories, the centre is going to provide high level expertise in hydrogen storage and fuel cell technologies and systems, as well as related materials development, characterization and measurement.

The project aim and impact will be accomplished as a result of synergies between the project's established scientific objectives. Each scientific objective will have a cross connection into the project's derivate objective.

**Project's Scientific Objectives:**

- WP1. Upgrading and renewal of Science and Technology (S&T) equipments
- WP2. Improvement of RDI human resources quality and expertise
- WP.3 Knowledge transfer at national and international level
- WP4. Enhancing scientific visibility level of INCDIE ICPE-CA and HyFCLab
- WP5. Project management and activities co-ordination

**Project's Derivate Objectives:**

- Strengthening the INCDIE ICPE-CA capacity and the quality of research;
  - Developing a dynamic and competitive HyFCLab and its integration into ERA;
  - Bringing a clear added value to renewable energy technologies;
  - Offering a valuable source for knowledge, know-how and experience exchange;
  - Opening new opportunities for developing interdisciplinary research in FP7 and ERA;
  - Increasing the national and international visibility of INCDIE ICPE-CA and HyFCLab;
  - Increasing public awareness for renewable energy technologies.
- The 1st derivate objective, Strengthening the Romanian RTD capacity and quality of research is a cross connection of the 1st scientific objective. It mean to develop a powerful scientific research centre in Romania, namely HyFCLab, in the field of hydrogen and fuel cell technologies, with a high potential and capacity for undertaking high level research activities in the frame of the most "hot" topics of the FP7 Programme and research interest of ERA. By acquisition of advanced research equipments and increasing the quality of the human potential (WP1), will increase the efficiency of the HyFCLab activity, at the national and international level, and make it attractive for regional and European cooperation.

These goals could be realized with the help of ICPE-HYFC Project, and finally generating added value with respect to the "Unlocking and developing the research potential in the EU's convergence regions and outermost regions". By strengthening the RTD capacity and developing its research potential, INCDIE ICPE-CA, by its HyFCLab, will be able to address successfully to different national and international research

calls (e.g. FP7, HFP and Hy-CO's calls), for rising supplementary funds for supporting research.

- The 2nd derivate objective, Developing a dynamic and competitive HyFCLab and its integration into ERA is a cross connection of the 1st and 2nd scientific objectives, and it is a result of the improvement of RTD capacity and human resources quality and expertise at INCDIE ICPE-CA. By focusing the human resources and expertise regarding the hydrogen and fuel cells, in a research centre, will be built the HyFCLab. By the present project, INCDIE ICPE-CA has been planning to strengthen and improve the excellence in research of its HyFCLab by focusing its staff and recruiting new incoming researchers, with a valuable international experience, and also, involving the research personnel in activities regarding trans-national exchange of know-how and experience (WP2). This is an already implemented strategy at INCDIE ICPE-CA for the institute's development, so, this project will open opportunities for the involved researchers to acquire the European level in research and thus opening the opportunities for better integration into the European Research Area. Supplementary, new opportunities for interdisciplinary research in international partnerships will be opened, in the frame of the FP7 programme.

- The 3rd derivate objective, Bringing a clear added value to renewable energy technologies is a cross connection of the 2nd scientific objective, and will be accomplished also by improvement of RTD human resources quality and expertise at HyFCLab (WP2). Activities like exchange of know-how and experience through trans-national two-way secondments between Romania and EU research organizations will lead to enhancement of knowledge and know-how, with direct result in improving the excellence in research. The quality and excellence in research will bring a clear added value, and also long-term new scientific and technical innovative achievements. These achievements will generate direct benefits at the economical and social level, with a major impact to the regional sustainable development. Moreover, by improvement of the excellence in research will increase the potential of setting-up strategic partnerships, enabling thus the full potential for sustaining a clear added value in the renewable energy technologies field, especially hydrogen and fuel cells.

- The 4th derivate objective, Offering a valuable source for knowledge, know-how and experience exchange is a cross connection of the 3rd scientific objective and a result of accomplishment of the 1st and 2nd scientific objectives. Thus, by the support of the present project, HyFCLab is able to strengthen its RTD capacity and to become a dynamic and competitive research centre, with the capacity for sustaining scientific and innovative research. Acquiring all of these qualities, HyFCLab will be now capable to be a source of knowledge, know-how and experience exchange at the regional, national and international level. By specific activities (WP3), the excellence in research and excellent RTD capacity of the new created research centre will be known, enhancing thus its international reputation and developing premises for a better integration in ERA, and opening the opportunities for participation in different EU networks, Technology Platforms and consortia in FP7 projects.

Supplementary, getting the international recognition of HyFCLab as a source of knowledge, know-how and experience, the specific activities

performed in WP3 will be a solid platform for recruitment of the incoming experienced researchers.

- The 5th derivative objective, Opening new opportunities for developing interdisciplinary research in FP7 and ERA is a cross connection of the 1st, 2nd, 3rd, and 4th scientific objectives, and will be a result of targeted activities which will be done in WP1, WP2, WP4 and mainly in WP3. Through improvement of the RTD capacity and research potential, will be achieved the premises for integration of the research activities of INCDIE ICPE-CA and HyFCLab into ERA, and co-optation in different scientific partnerships and consortia for developing interdisciplinary joint research.

- The 6th derivative objective is Increasing the national and international visibility of INCDIE ICPE-CA and HyFCLab is a cross connection of the 4th scientific objective. The objective will be accomplished by enhancing the scientific visibility level of INCDIE ICPE-CA and HyFCLab through targeted dissemination of the scientific results at regional, national and international level, together with the promotional activities done in WP4.

- The 7th derivative objective, Increasing public awareness for renewable energy technologies is a cross connection of the 4th scientific objective, and will be accomplished by targeted intelligent promotional activities in WP4. The meaning of this objective is to modify social habits and attitude towards renewable energy technologies, especially hydrogen and fuel cells based. A special attention will be given to the opportunities of networking with the industry of the activities planned to be done for accomplishment of this objective.

## Project Results:

Description of the main Science and Technology (S&T) results/foregrounds:

WP 1. The upgrading and renewal of the Science and Technology (S&T) equipments Total human effort in WP1: 5.2 persons-month Objectives of WP1: ? Upgrading and renewal of Science and Technology (S&T) equipments ? Strengthening the Romanian RTD capacity and the quality of research from 01/04/2009 to 30/09/2009 Task 1.1. Market prospecting. Offer selection. Human effort for market prospecting and offer selection:  $0.5 \text{ persons-month}$ , from which:  $2 \text{ persons} * 2\text{h/day} * 22\text{day/month} * 1\text{months} / 172\text{h/month} = 0.5 \text{ persons-month}$ . Market survey for collecting quota and offers evaluation for the scientific equipments has been done. Three types of equipments has been considered and checked for technical offers: Equipment 1: Gravimetric Sorption Analyser Equipment 2: Tape Casting Machine Equipment 3: Screen Printing Machine / Coating System from 01/10/2009 to 30/03/2010 Task 1.1. Market prospecting. Offer selection. Human effort for market prospecting:  $3.0 \text{ persons-month}$ , from which:  $2 \text{ persons} * 2\text{h/day} * 22\text{day/month} * 6 \text{ months} / 172\text{h/month} = 3 \text{ persons-month}$ . Three types of equipments has been considered and checked for technical offers: Equipment 1: Gravimetric Sorption Analyser Equipment 2: Tape Casting Machine Equipment 3: Coating System Task 1.2. Equipments commissioning and installation - N/A (after equipments will be delivered) Task 1.3. Training on specific equipments. - N/A (after equipments will be installed) from 01/04/2010 to 30/09/2010 Task 1.1. Market prospecting. Offer selection. Human effort for identification of the proper equipments considering quality - technical characteristics - price:  $0.5 \text{ persons-month}$ , from which:  $5 \text{ persons} * 2 \text{ sessions} * 8\text{h/session} / 172\text{h/month} = 0.5 \text{ person-month}$  Two types of equipments has been considered: Equipment 1: Gravimetric Sorption Analyser Equipment 2: Coating System Task 1.2. Equipments commissioning and installation - N/A (after equipments will be delivered, forecast date: 20th month) Task 1.3. Training on specific equipments. - N/A (after equipments will be installed, forecast date: 20th month) from 01/10/2010 to 31/03/2011 Two equipments have been delivered and installed in the 20th month of the project. Equipment 1: Gravimetric Sorption Analyser Equipment 2: Coating System Task 1.2. Equipments commissioning and installation (delivered and installed in the 20th month) Human effort for the Equipment 1 installation and training - Gravimetric Sorption Analyser:  $2 \text{ persons} * 24\text{h} / 172\text{h/month} = 0.3 \text{ person-month}$  Human effort for the Equipment 2 installation and training - Coating System:  $2 \text{ persons} * 24\text{h} / 172\text{h/month} = 0.3 \text{ person-month}$  Task 1.3. Training on specific equipments. Training on the equipments was delivered in the 20th month after installation. Human effort for training on Equipment 1 - Gravimetric Sorption Analyser:  $2 \text{ persons} * 24\text{h} / 172\text{h/month} = 0.3 \text{ person-month}$  Human effort for training on Equipment 2 installation and training - Coating System:  $2 \text{ persons} * 24\text{h} / 172\text{h/month} = 0.3 \text{ person-month}$  Milestones and deliverables in WP1 M1.1 (Offers evaluation and selection of the equipments) delivered in the 17th month. Means of verification: Report regarding public auction result for equipment acquisition. Results: Best offer quality (characteristics, service and training)/price. M1.2 (Equipments installed in the 12th month) delivered in the 20th month. D1 (Increased RTD capacity and potential comparable with the EU level) will be presented in the 2nd report to EC (36th month). Means of verification: The deliverable D1 will be monitored by the amount spent on equipments and number of equipments installed after the 20th month. from 31/03/2011 - 30/09/2011 WP1 accomplished in the month 20th. WP2. Improvement of RDI human resources quality and expertise Total human effort in WP2: 14.25 persons-month Objectives of WP2: - Improvement of RDI human resources quality and expertise

- Developing a dynamic and competitive regional society
- Bringing a clear added value to renewable energy technologies from 01/04/2009 to 30/09/2009 Task 2.1.

Identification and establishing joint activities with the most expertised European research centres with activities in the field of hydrogen and fuel cell technologies. Human effort: 6 persons-month, from which: 4 persons\*2h/day\*22day/month\*6month / 172h/month ~ 6 persons-month. The research groups which were identified and we are looking to open joint collaborations are:

- In Europe: (1) Newcastle University, UK - Fuel Cells; (2) Birmingham University, UK - Fuel Cells and Electric Cars; (3) Coventry University, UK - Fuel Cells and Electric Cars; (4) National Institute of Carbon, Spain - hydrogen storage; (5) Institute of Technical Thermodynamics, Germany - hydrogen storage, fuel cell systems, materials testing and characterization, (6) Kiev National University of Technologies and Design, Ukraine - batteries and fuel cell systems; (7) Angel Kancev University of Rouse, Bulgaria - hydrogen and fuel cells, renewable energy;
- In China: (8) General Research Institute for Non-ferrous Metals (GRINM) in Beijing - hydrogen storage, including high-pressure storage and sensors; (8) Guangzhou Institute of Energy Conversion (GIEC) - renewable energy technologies; (9) Huazhong University, Department of Materials Science and Engineering - hydrogen storage alloys and new PEM Fuel Cells and (10) Institute of Fuel Cells at the Shanghai Jiao Tong University - small stationary (less than 10 kW) PEM and MCFC and electrolyzers;
- In Iran: (11) Presidency Technology Cooperation Office - PEM and SOFC type fuel cells; wind generators; (12) PUYA ELECTRO SAMAN (PULSE) NIRU Research Centre - impulse magnetizers; tungsten- copper alloy; SOFC type fuel cells; wind generators; production of nano powder by pulsed power method; anti erosion through cathodic protection etc. Task 2.2 (Staff exchange) - is planned to start after the 6th month Task 2.3 (Hosting scientists) - is planned to start after the 6th month Task 2.4 (Recruitment of the incoming experienced researchers) - is planned to start after the 6th month from 01/10/2009 to 30/03/2010 Task 2.1.

Identification and establishing joint activities with the most expertised European research centres with activities in the field of hydrogen and fuel cell technologies. - Agreements on Scientific And Technological Collaboration are in preparation to be signed with: 1. Kiev National University of Technologies and Design, Ukraine 2. "Angel Kanchev" University of Ruse, Bulgaria 3. University of Coventry, England 4. PUYA ELECTRO SAMAN (PULSE) NIRU Research Centre, Iran 5. Newcastle University, England Task 2.2 (Staff exchange) Human effort: 0.75 persons-month, from which: 3 persons \* 0.25 months/year \* 1 year = 0.75 persons-month 1. Dr.ing. Gimi A. RIMBU, Kiev National University of Technologies and Design, Department of Electrochemical Power Engineering and Chemistry, 01/03/2010 - 06/03/2010, Supervisor: Prof. Viacheslav Barsukov (Means of verification: registered MANDAT for delegation; registered REPORT on training activity and signed Scientific Agreement). 2. Eng.Fiz. Iulian IORDACHE, Kiev National University of Technologies and Design, Department of Electrochemical Power Engineering and Chemistry, 01/03/2010 - 06/03/2010, Supervisor: Prof. Viacheslav Barsukov (Means of verification: registered MANDAT for delegation; registered REPORT on training activity and signed Scientific Agreement). 3. Eng. Mihai IORDOC (young researcher under 35), Kiev National University of Technologies and Design, Department of Electrochemical Power Engineering and Chemistry, 01/03/2010 - 06/03/2010, Supervisor: Prof. Viacheslav Barsukov (Means of verification: registered MANDAT for delegation; registered REPORT on



training activity and signed Scientific Agreement). Task 2.3 (Hosting scientists) Task 2.4 (Recruitment of the incoming experienced researchers) 1. Dr. Radu SETNESCU - European Centre for Nuclear Research (CERN) in Geneva, Switzerland, has been recruited by INCDIE ICPE-CA in January 2010. He is specialist in radiochemistry and his expertise is required for supporting the activity of the ICPE-HYFC Lab regarding the development of grafted membranes, by gamma irradiation, for the fuel cell technology. (Means of verification: registered contract at INCDIE ICPE-CA). from 01/04/2010 to 30/09/2010 Task 2.1. Identification and establishing joint activities with the most expertised European research centres with activities in the field of hydrogen and fuel cell technologies. - Agreements on Scientific And Technological Collaboration have been signed with: 1. Kiev National University of Technologies and Design, Ukraine 2. "Angel Kanchev" University of Ruse, Bulgaria 3. University of Coventry, England 4. PUYA ELECTRO SAMAN (PULSE) NIRU Research Centre, Iran 5. Shanghai Federation of Industry and Commerce, Steel Construction Association on Baoshan, P.R.China - Agreements on Scientific And Technological Collaboration are in preparation to be signed with: 1. University of Birmingham, England 2. Newcastle University, England 3. Energy Institute of TUBITAK Marmara Research Centre, Turkey 4. National Institute of Carbon, Spain 5. China Association for International Exchange of Personnel 6. German Research Centre for Environmental Health Helmholtz Zentrum, München 7. Slovak University of Technology in Bratislava Task 2.2 (Staff exchange) Human effort: 0.5 persons month, from which: 2 persons \* 0.25 months/year \* 1 year = 0.5 persons-month 1. Dr.ing. Gimi A. RIMBU, PUYA ELECTRO SAMAN (PULSE) NIRU Research Centre, Iran, 14/06/2010 - 18/06/2010, Supervisor: Dr. Mohammad Mahdi Attaran. (Means of verification: registered MANDAT for delegation; registered REPORT on training activity and signed Scientific Agreement). 2. Prof. Wilhelm KAPPEL, PUYA ELECTRO SAMAN (PULSE) NIRU Research Centre, Iran, 14/06/2010 - 18/06/2010, Supervisor: Dr. Mohammad Mahdi Attaran. (Means of verification: registered MANDAT for delegation; registered REPORT on training activity and signed Scientific Agreement). Task 2.3 (Hosting scientists) 2 visiting fellows 1. Dr. Mircea VANATORU, Coventry University, Sonochemistry Centre, 13.08 - 05.09.2010, (Means of verification: registered invitation; registered REPORT on training delivered to the ICPE-HYFC Lab staff and signed Scientific Agreement). 2. Prof. Viacheslav BARSUKOV, Kiev National University of Technologies and Design Department of Electrochemical Power Engineering, period: 16.09 - 14.10.2010 (Means of verification: registered invitation; registered REPORT on training delivered to the ICPE-HYFC Lab staff and signed Scientific Agreement). 6 lectures 1. Dr. Mark SMITH, Coventry University, Faculty of Engineering and Computing, 17.08 - 19.08.2010 (Means of verification: registered invitation and signed Scientific Agreement with Coventry University). 2. Dr. Camelia DIJKSTRA, Coventry University, Faculty of Health and Life Science, 16.08 - 19.08.2010 (Means of verification: registered invitation and signed Scientific Agreement with Coventry University). 3. Prof. Lelak JAROSLAV, Faculty of Electrical Engineering and Informational Technology, Slovak University of Technology in Bratislava, 1-5 September 2010 (Means of verification: registered invitation and abstracts book of CEM 2010 Conference). 4. Dr. Dekat GILBERT, Consultant expert GD-EMF-Consulting, Belgium, 1-5 September 2010 (Means of verification: registered invitation and abstracts book of CEM 2010 Conference). 5. Tim VOLKER, EC Expert, Germany, 6-9 July 2010 (Means of verification: registered invitation and abstracts book of the National Seminar - DIS-CDI). 6. Stefan ECHINGER, Head of the Department of Scientific Organization Development, German Research Centre for Environmental Health Helmholtz Zentrum, München, 6-9 July 2010 (Means of

verification: registered invitation and abstracts book of the National Seminar - DIS-CDI). Task 2.4 (Recruitment of the incoming experienced researchers) from 01/10/2010 to 31/03/2011 Task 2.1. Identification and establishing joint activities with the most expertised European research centres with activities in the field of hydrogen and fuel cell technologies. - New scientific opportunities for joint collaborations are under survey with: 1. C-Tech Innovation Ltd, UK 2. University of Perugia, Italia 3. China Association for Science and Technology (CAST), China Task 2.2 (Staff exchange) Task 2.3 (Hosting scientists) Task 2.4 (Recruitment of the incoming experienced researchers) from 31/03/2011 to 30/09/2011 Task 2.1. Identification and establishing joint activities with the most expertised European research centres with activities in the field of hydrogen and fuel cell technologies. - Agreements on Scientific and Technological Collaboration have been signed with: 1. C-Tech Innovation Ltd, UK 2. Biomass Research Centre - Perugia, Italia 3. China Association for Science and Technology (CAST), China Task 2.2 (Staff exchange) Task 2.3 (Hosting scientists) Visiting fellows 1. Dr. Camelia DIJKSTRA, Coventry University, Faculty of Health and Life Science, 01/04/2011 - 01/05/2011 (Means of verification: registered invitation and registered REPORT on training). The 1 month visit of Dr. Camelia Dijkstra had a great contribution to the development and implementation of a new procedure for the evaluation of the personnel performances (DEP), with direct influence on the deliverables D3. Improvement of RDI human resources quality and expertise; D5. Dynamic and competitive regional society and D6. Potential consortium for participation in interdisciplinary research in FP7 projects. Task 2.4 (Recruitment of the incoming experienced researchers) from 01/10/2011 to 30/03/2012 Task 2.1. Identification and establishing joint activities with the most expertised European research centres with activities in the field of hydrogen and fuel cell technologies. - New scientific opportunities for joint collaborations are under survey. - Agreements on Scientific and Technological Collaboration have been signed with: 1. Yildiz Technical University, Turkey 2. Gebze Institute of Technology, Turkey Task 2.2 (Staff exchange) Human effort: 7 persons-month, from which: 1 person \* 1 months/year = 1 persons-month 2 persons \* 0.75 months/year = 1.5 persons-month 7 persons \* 0.5 months/year = 3.5 persons-month 1 person \* 1 months/year = 1 persons-month 1. Florentina Bunea, staff exchange and training in the field of renewable energy sources, Universite Joseph Fourier, Institut National Polytechnique de Grenoble, Centre Nationale de la Recherche Scientifique, Laboratoire des Ecoulements Geophysiques et Industriels, 01/02/2012 - 25/02/2012, Grenoble, France (Means of verification: registered MANDAT for delegation; registered REPORT on training activity); 2. Elena Chitanu (former Elena - Felicia Petrache), staff exchange and training in the field of solar cells, Linz Institute for Organic Solarcells - LIOS, Austria, 12/03/2012 - 30/03/2012, Linz, Austria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity); 3. Lucia Leonat, staff exchange and training in the field of solar cells, Linz Institute for Organic Solarcells - LIOS, Austria, 12/03/2012 - 30/03/2012, Linz, Austria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity); 4. Gabriela Oprina, staff exchange and training on renewable energy sources at the University of Ruse "Angel Kanchev", 14/03/2012 - 28/03/2012, Ruse, Bulgaria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement); 5. Victor Stoica, staff exchange and training on renewable energy sources at the University of Ruse "Angel Kanchev", 14/03/2012 - 28/03/2012, Ruse, Bulgaria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement); 6.

Radu Vasilescu Mirea, staff exchange and training on renewable energy sources at the University of Ruse "Angel Kanchev", 14/03/2012 - 28/03/2012, Ruse, Bulgaria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement); 7. Eugen Manta, staff exchange and training on renewable energy sources at the University of Ruse "Angel Kanchev", 14/03/2012 - 28/03/2012, Ruse, Bulgaria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement); 8. Virgil Marinescu, staff exchange and training on renewable energy sources at the University of Ruse "Angel Kanchev", 14/03/2012 - 28/03/2012, Ruse, Bulgaria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement); 9. Iulian Iordache, staff exchange and training on renewable energy sources at the University of Ruse "Angel Kanchev", 14/03/2012 - 28/03/2012, Ruse, Bulgaria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement); 10. Florina Radulescu, staff exchange and training on renewable energy sources at the University of Ruse "Angel Kanchev", 14/03/2012 - 28/03/2012, Ruse, Bulgaria (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement); 11. Mihai Iordoc, staff exchange and training on ultrasound technology, hydrogen storage and fuel cells technology, University of Coventry, 08/01/2012 - 10/02/2012, Coventry, UK (Means of verification: registered MANDAT for delegation; registered REPORT on training activity; signed Scientific Agreement).

Task 2.3 (Hosting scientists) Visiting fellows 1. Dr. Camelia DIJKSTRA, Coventry University, Faculty of Health and Life Science, 01/10/2011 - 16/10/2011 (Means of verification: registered invitation and registered REPORT on training). The 2 weeks visit of Dr. Camelia Dijkstra had a great contribution to the development and implementation of a new procedure for the evaluation of the personnel performances (DEP), with direct influence on the deliverables D3. Improvement of RDI human resources quality and expertise; D5. Dynamic and competitive regional society and D6. Potential consortium for participation in interdisciplinary research in FP7 projects. Visiting lecturers 1. Dr. Andrew COBLEY, Coventry University, Faculty of Health and Life Science, Sonochemistry Applied Research Centre, 01/10/2011 - 05/10/2011 (Means of verification: registered invitation and registered travelling documentation); 2. Guleda ENGIN, Gebze Institute of Technology, Department of Environmental Engineering, 21/03/2012 - 22/03/2012 (Means of verification: registered invitation and registered travelling documentation); 3. Sema BAYKARA, Yildiz Technical University, Department of Chemical Engineering, 21/03/2012 - 22/03/2012 (Means of verification: registered invitation and registered travelling documentation); 4. Naci ENGIN, TUBITAK - Marmara Research Centre, Energy Institut, 21/03/2012 - 22/03/2012 (Means of verification: registered invitation and registered travelling documentation); 5. Lorenzo TOGNANA, SOFC Power - Italia, 26/03/2012 - 29/03/2012 (Means of verification: registered invitation and registered travelling documentation).

Task 2.4 (Recruitment of the incoming experienced researchers) 1. Dr. Mircea VINATORU, Coventry University, UK - agreement signed by the General Manager (November 2011) in order to be hired as project director, in case that the project proposal "Continuous Sono-Electrochemical Reactor with Microchannels as Ecoefficient and Energy Saving Recycling Technology for Rapid and High Rate Conversion of Waste Cooking Oils To Biodiesel,, will be funded. The project with the registration code no. PN-II-PT-PCCA-2011-3.1-0883 was submitted in November 2011 by Dr. Mircea Vinatoru as project director, on behalf of ICPE-CA, in the projects proposal call of the National Partnerships Program (Means of verification: Agreement signed by

the General Manager of ICPE-CA and registration of the project submission). Milestones and deliverables in WP2 Milestone M2.1 - Scientific agreements for collaboration and training. Means of verification: Scientific agreements for collaboration and training in the 36th month. Established specific returning mechanisms after the end of training.

- 10 Agreements on Scientific And Technological Collaboration have been signed with:

- Kiev National University of Technologies and Design, Ukraine
- "Angel Kanchev" University of Ruse, Bulgaria
- University of Coventry, England
- PUYA ELECTRO SAMAN (PULSE) NIRU Research Centre, Iran
- Shanghai Federation of Industry and Commerce, Steel Construction Association on Baoshan, P.R.China
- C-Tech Innovation Ltd, UK
- Biomass Research Centre - Perugia, Italia
- China Association for Science and Technology (CAST), China
- Yildiz Technical University, Turkey
- Gebze Institute of Technology, Turkey

- Specific returning mechanisms after the end of training have been established. During the training, the staff of INCDIE ICPE-CA is detached to the training site, based on a registered MANDATE of delegation. The staff professional positions will remain active on the all detached period. After the end of training, the returning staff is mandatory to produce and sign a REPORT on activity done during detaching period. Results: Enhanced networking with EU research centres having similar interest.

- After running the staff exchange and hosting scientists' activities the networking with the international research centers with similar interest have been enhanced. The proves of this aspect are the signed agreements on scientific and technological collaboration as well as the number of visiting fellows and lecturers from different countries (England, Ukraine, Slovak Republic, Belgium and Germany) which joint the project's activities. Deliverables (brief description and month of delivery) D3 - Improvement of RDI human resources quality and expertise (presented in the 1st report to EC). Means of verification: Deliverable D3 will be monitored by the number of Romanian staff involved in the staff exchange program, according to the scientific agreement on collaboration between RD organizations, number of invited and hosted foreign scientists, as well as the recruited number of incoming experienced researchers.

- 13 people involved in the staff exchange program, from which 10 young researchers under 35

- 13 people involved in the hosting program, from England, Ukraine, Slovak Republic, Belgium, Germany, Italy and Turkey.

- 2 recruited incoming experienced scientist WP.3 Knowledge transfer at national and international level Total human effort in WP3: 29.26 persons-month Objectives

- Knowledge transfer at national and international level

- Offering a valuable source for knowledge, know-how and experience exchange

- Opening new opportunities for developing interdisciplinary research from 01/04/2009 to 30/09/2009 Task 3.1.

Organization of workshops and conferences at national and international level Human effort: 6 persons-month, from which: 6persons\* 1 events \* 22

day/event/ 22day/month ~ about 6 person-month. 1. A conference has been planned and organized - The Workshop "Innovation and Evolution by Research And Development (R&D) - SMEs Strategic Partnership", Bucharest, 10/09 - 12/09/2009. The conference is going to be introduced in the Conference Plan of INC DIE ICPE-CA, and to be organized at every 2 years. The conference had about 100 participants, from which 12 invited lecturers from Romanian and EU research centers (Poland, France, Greece, Spain, Germany, England, Check Republic and Ukraine) - list of participants presented. Task 3.2. Participation at international short-term training Human effort: 0.5 persons-month, from which: 1 persons \* 0.5 months/year \* 1 year ~ 0.5 persons-month 1. Ing. Eugen MANTA (young researcher under 35) - „European School on Magnetism 2009", Timisoara, 01/09 - 10/09/2009. from 01/10/2009 to 30/03/2010 Task 3.1. Organization of workshops and conferences at national and international level Task 3.2. Participation at international short-term training Human effort: 1 persons-month, from which: 2 persons \* 0.25 months/year = 0.5 persons-month 1 person \* 0.5 months/year = 0.5 persons-month 1. Dr.Ing. Adela BARA, Dresden - based Solar Module Manufacturer SOLARWAT AG, Germany, 02/03 - 06/03/2010 - technical consultance and training for developing feasibility studies and project proposals in the renewable energy field (Means of verification: registered MANDAT for delegation; registered REPORT on training activity). 2. Carmen MATEESCU, Dresden - based Solar Module Manufacturer SOLARWAT AG, Germany, 02/03 - 06/03/2010 - technical consultance and training for developing feasibility studies and project proposals in the renewable energy field (Means of verification: registered MANDAT for delegation; registered REPORT on training activity). 3. Ciprian ONICA, PRO MANAGEMENT Bucharest, Romania, 08/03/2010 - 18/03/2010 - training on System Engineering - "WINS-08 Platform, Windows Vista / Windows 7 and Windows Server 2008" (Means of verification: registered MANDAT for delegation; registered REPORT on training activity, DIPLOMA of System Engineer qualification). from 01/04/2010 to 30/09/2010 Task 3.1. Organization of workshops and conferences at national and international level Human effort: 6 persons-month, from which: 6persons\* 1 events \* 22 day/event/ 22day/month ~ about 6 person-month 1. Workshop - Renewable Energy (including Hydrogen and Fuel Cells) - Systems, Applications, storage, energy harvesting and materials for energy, in the frame of the 7th International Workshop on Electromagnetic Compatibility CEM 2010, 2-4 September 2010, Odorheiul Secuiesc, Romania. The workshop had about 79 participants, from which invited lecturers from Romanian and EU research centers (Egypt, Slovakia, Belgium). Means of verification: workshop's proceeding and list of participants. Task 3.2. Participation at international short-term training Human effort: 0.25 persons-month, from which: 1 person \* 0.25 months/year = 0.25 persons-month 1. Adela BARA, curs „Expert in accessing structural and social cohesion funds ", organized by SC EXPERT GROUP AUDIT SRL, period: 15/07 -17/07/2010, Bucharest, Romania. from 01/10/2010 to 31/03/2011 Task 3.1. Organization of workshops and conferences at national and international level Human effort: 6 persons-month, from which: 6persons\* 1 events \* 22 day/event/ 22day/month ~ about 6 person-month. 1. Workshop - Technological Development on Renewable Energy Technologies in the Black Sea Region, in the frame of the Black Sea Forum on Renewable Energy" - BSFRE, Bucharest, Romania, 8th - 10th of November 2010. The workshop registered about 103 participants from Romania and 35 foreign participants (of 352 participants to the Forum). At the workshop have been invited as Special Invited Lecturers: (1) Prof. Nikolay MIHAILOV, Vice-Rector, "Angel Kanchev" University of Russe,, Bulgaria; (2) Prof. Viacheslav BARSUKOV, Head of Department of Electrochemical Power Engineering, Kiev National University of Technologies and Design, Ukraine; (3) Dr. Seref Naci ENGIN,

EE PhD, Chief Senior Researcher, TUBITAK-Marmara Research Center Energy Institute Gebze, Kocaeli, Turkey; (4) Carsten Albrecht, President Federal Association for Wind Energy in Germany and (5) Acad.Prof. Ion BOSTAN, Rector, Technical University of R. Moldova, Member of the Academy of Moldova Republic, Moldova. The first three of them: Prof. Nikolay MIHAILOV; Prof. Viacheslav BARSUKOV and Dr. Seref Naci ENGIN have been supported by the FP7-REGPOT-229906/2009 project. Task 3.2. Participation at international short-term training Preparing international short term training from 31/03/2011 - 30/09/2011 Task 3.1. Organization of workshops and conferences at national and international level Human effort: 4 persons-month, from which: 4 persons\* 1 events \* 22 day/event/ 22day/month ~ about 4 person-month. Green Energy - Romania and China Workshop was organized by INC DIE ICPE-CA, during 28th - 29th of June 2011, in Bucharest and Avrig City, in collaboration with General Association of Engineers in Romania (AGIR). Have been invited as special guest the Mayor of Avrig City and the delegates of China Association for Science and Technology (CAST). A number of 65 persons have been registered as participants to the workshop, from which 10 foreign participants (9 from China and 1 from Germany). During the workshop, in the presence of H.E. the Ambassador of China in Romania, has been signed a protocol with the purpose for cooperation in the following directions for cooperation:

- To cooperate and share knowledge, resources and experience, in order to support and promote their activities with regard to the energy efficiency, generation, transport and distribution of the energy from renewable sources, as well as to contribute to the reduction of the greenhouse effect;
- To promote and support the Avrig City Hall's Program - "THE LOCAL ENERGY - Contribution for Tackling Climate Change - Integrated Model for an Energy Efficient Community."
- To promote and support the proposal of the Avrig City Hall for providing to the Chinese partner the project design and the technology, for joint development of a hybrid bio-reactor based electrical power plant in China, in return for financial support on behalf of the Chinese partner for building the power plant in the Avrig town in Romania;
- To support the proposal for developing an Exhibition Centre in the Avrig town in Romania, for promoting the products and technologies regarding the renewable energy sources, provided by the Chinese partners.
- To initiate and develop common activities for scientific dissemination, in order to assure a better knowledge over the last technological developments, regarding the renewable energy technologies in the both countries.
- To facilitate interchangeable participation to the scientific and technological activities which each partner organizes.
- To share technical information and scientific publications
- To support the publication of the scientific articles written by the authors from a country, in the specialized magazines published in the other country.

Magazines published by AGIR are opened to the requests for publishing the works of the Chinese specialists. Task 3.2. Participation at international short-term training Human effort: 1.25 persons-month, from which: 2 persons \* 0.25 months/year = 0.5 persons-month 2 persons \* 0.25 months/year = 0.5 persons-month 1 person \* 0.25 months/year = 0.25 persons-month 1. Cristina BANCIU and Adela BARA, training course on Carbon Nanotube and Graphene Chemical Vapour Deposition by First aNano Easy Tube 2000 System, organized by CVD Equipment Corporation, NY, USA, 01/08/2011 - 08/08/2011. 2. Ciprian ONICA and Nedelcu ADRIAN, training

course - High performance computer engineering solutions, Sinaia 18/05/2011 - 21/05/2011. 3. Mihai IORDOC, International Summer School on PEM Fuel Cells, Izmir. Turkey, 10/07/2011 - 16/07/2011. from 01/10/2011 - 31/03/2012 Task 3.1. Organization of workshops and conferences at national and international level - The 2nd Romanian - Chinese Workshop on Science and Technology "New Energy and its Business Opportunity in East Europe", Bucharest, June 6th - 8th 2012 and Avrig June 9th 2012. The event is in preparation by INCDIE ICPE-CA as main organizer, as a consequence of the success of the 1st Green Energy - Romania and China Workshop (28th - 29th of June 2011). The 2nd Romanian - Chinese Workshop on Science and Technology is supported also by the Romanian Ministry of Economy and the the Embassy of P.R.China. A number of about 30 chinese official delegates are expected to attend. Task 3.2. Participation at international short-term training Human effort: 4.25 persons-month, from which: 1 person \* 0.5 months/year = 0.5 persons-month 2 persons \* 0.5 months/year = 1 persons-month 1 person \* 0.25 months/year = 0.25 persons-month 4 persons \* 0.5 months/year = 2 persons-month 1 person \* 0.5 months/year = 0.5 persons-month 1. Florentina Bunea, training renewable energy technologies including hydrogen and fuel cells at ALSTOM Power Hydro France, 09 - 22 December 2011, Grenoble, France; 2. Ion Dobrin, training on hydrogen proton energy, particle accelerators and superconducting magnets at Joint Universities Accelerator School in the modular courses for professionals, 20/02/2012 (week 7) - 02/03/2012 (week 8), Archamps, France; 3. Lucian Pislaru, training on hydrogen proton energy, particle accelerators and superconducting magnets at Joint Universities Accelerator School in the modular courses for professionals, 20/02/2012 (week 7) - 02/03/2012 (week 8), Archamps, France; 4. Diana Cirstea, training on computer simulation and theoretical characterization of Ni precipitates, under coordination of Dr. Ernst Kozeschnik and Dr. Erwin Povoden-Karadeniz, Institute of Materials Science and Technology, 09/01/2012 - 13/ 01/2012, Vienna, Austria; 5. Mariana Lucaci, training on LaNi5 type materials for hydrogen storage and energy cells, under supervision of Prof. Viacheslav Barsukov, Kiev National University of Technologies and Design, Department of Electrochemical Power Engineering and Chemistry, 22/02/2012 -09/03/2012, Kiev, Ukraine; 6. Mihai Iordoc, training on LaNi5 type materials for hydrogen storage and energy cells, under supervision of Prof. Viacheslav Barsukov, Kiev National University of Technologies and Design, Department of Electrochemical Power Engineering and Chemistry, 22/02/2012 -09/03/2012, Kiev, Ukraine; 7. Aristofan Teisanu, training on LaNi5 type materials for hydrogen storage and energy cells, under supervision of Prof. Viacheslav Barsukov, Kiev National University of Technologies and Design, Department of Electrochemical Power Engineering and Chemistry, 22/02/2012 -09/03/2012, Kiev, Ukraine; 8. Magdalena Lungu, training on LaNi5 type materials for hydrogen storage and energy cells, under supervision of Prof. Viacheslav Barsukov, Kiev National University of Technologies and Design, Department of Electrochemical Power Engineering and Chemistry, 22/02/2012 - 09/03/2012, Kiev, Ukraine; 9. Gabriela Obreja, DTP Designer course training, organized by the Ministry of Culture and National Heritage, Center for Professional Training in Culture, 31/10/2011 - 17/01/2012 (diploma series G no. 00217497 / 30/01/2012). Milestones and deliverables in WP3 Milestone M3.1 - Conferences and workshops organized by INCDIE ICPE-CA. Means of verification: Reports on the conferences and workshops organized. Proceedings of organized Conferences and Workshops.

- The Workshop "Innovation and Evolution by Research And Development (R&D)- SMEs Strategic Partnership", Bucharest, 10/09 - 12/09/2009.
- Workshop - Renewable Energy (including Hydrogen and Fuel Cells) - Systems, Applications, storage, energy harvesting and materials for

energy, in the frame of the 7th International Workshop on Electromagnetic Compatibility CEM 2010, 2-4 September 2010, Odorheiu Secuiesc, Romania.

- Workshop - Technological Development on Renewable Energy Technologies in the Black Sea Region, in the frame of the Black Sea Forum on Renewable Energy" - BSFRE, Bucharest, Romania, 8th - 10th of November 2010.

- Green Energy - Romania and China Workshop 28th - 29th of June 2011, in Bucharest and Avrig City.

- The 2nd Romanian - Chinese Workshop on Science and Technology "New Energy and its Business Opportunity in East Europe", Bucharest, June 6th - 8th 2012 and Avrig June 9th 2012. Results:

- Facilitating the knowledge transfer to the national and international level;

- Networking with EU research centres with similar activities;

- Enhance the international reputation and visibility of INCDIE ICPE-CA and HyFCLab;

- Proposals for joint research collaboration.

Deliverables D4- Increased networking and knowledge transfer between HyFCLab and other European Research Centres (presented in the 1st and 2nd reports to EC). Means of verification: Deliverable D4 will be monitored by the number of organized scientific events and high rank specialists invited to attend them, as well as number of Romanian researchers which have attended short-term trainings on the EU research sites.

- 4 workshops organized, with a total no. of 347 participants, from which about 29 special invited lecturers from Romanian, EU (Poland, France, Greece, Spain, Germany, England, Czech Republic, Bulgaria, Turkey, Moldova and Ukraine) and Chinese research centers and universities.

- 1 workshop in preparation (out of the project period as further implementation of the project's results).

- 13 persons were trained at international short term training programs. About 3 of them are young scientists under 35 years old. WP4.

Enhancing scientific visibility level of INCDIE ICPE-CA and HyFCLab Total human effort in WP4: 22.32 persons-month Objectives

- Enhancing scientific visibility level of INCDIE ICPE-CA and HyFCLab

- Increasing the national and international visibility of INCDIE ICPE-CA and HyFCLab

- Increasing public awareness for renewable energy technologies from 01/04/2009 to 30/09/2009 Task 4.1 Attendance to specialized national and international conferences and workshops Human effort: 0.25 persons-month, from which: 1 person \* 4 days / 22 day/month = 0.2 persons-month 1 person \* 1 day / 22 day/month = 0.05 persons-month 1. Ing.

Delia PATROI (young researcher under 35) - Romanian Conference on Advanced Materials - ROCAM 2009", Brasov, Romania, 25/08 - 28/08/2009. 2.

Dr.ing. Gimi A. RIMBU - Round Table (Workshop) - 2nd Meeting for generating ideas for developing strategic projects in the Romania - Bulgaria cross-border cooperation program 2007 - 2013 in Pleven, Bulgaria, 18/08/2009. Task 4.2 Attendance to national and international Exhibitions Human effort: 0.7 persons-month, from which: 1 event \* 3

persons/event \* 5 days / 22 days/month = 0.7 persons-month 1. Prof. Wilhelm KAPPEL - China International Nuclear Power Industry Expo 2009, 02.09 -04.09.2009, Beijing, China 2. Dr. Gimi A. RIMBU - China International Nuclear Power Industry Expo 2009, 02.09 -04.09.2009, Beijing, China 3. Ing.fiz. Iulian IORDACHE - China International Nuclear Power Industry Expo 2009, 02.09 -04.09.2009, Beijing, China Task 4.3 Promotional activities Human effort: 0.2 persons-month, from which: 1

event \* 1 day \* 4 person / 22 day/month = 0.2 persons-month 1. Open Space Science Show, 25th September 2009, Parcul Tineretului (The Youth Park) in Bucharest.

1. Ing.fiz. Iulian IORDACHE - China International Nuclear Power Industry Expo 2009, 02.09 -04.09.2009, Beijing, China Task 4.3 Promotional activities Human effort: 0.2 persons-month, from which: 1

event \* 1 day \* 4 person / 22 day/month = 0.2 persons-month 1. Open Space Science Show, 25th September 2009, Parcul Tineretului (The Youth Park) in Bucharest.

1. Ing.fiz. Iulian IORDACHE - China International Nuclear Power Industry Expo 2009, 02.09 -04.09.2009, Beijing, China Task 4.3 Promotional activities Human effort: 0.2 persons-month, from which: 1 event \* 1 day \* 4 person / 22 day/month = 0.2 persons-month 1. Open Space Science Show, 25th September 2009, Parcul Tineretului (The Youth Park) in Bucharest.



- ICPE-CA was co-organiser and responsible for the Energy demonstration program (main organiser: National Institute for Research And Development (R&D) in Physics and Nuclear Engineering - Horia Hulubei and Politehica University of Bucharest).

- Promotional activity was planned for 25th September 2009, ahead of Delivery date in Annex 1. The reason for organizing ahead the promotional activity was because the event gave the best occasion in the year for spreading the knowledge and research results of the INCIE ICPE-CA and ICPE-HYFC Laboratory toward a large mass of people: middle and high schools students and professors, university students and professors, representatives of the Ministry of Education, local authorities, economic and social environment.

- The show was visited by around 1000 people (program and photos presented on the project's web-site). from 01/10/2009 to 30/03/2010 Task 4.1 Attendance to specialized national and international conferences and workshops Human effort: 0.3 persons-month, from which: 3persons \* 2days / 22day/month = 0.3 persons-month

1. Dr.ing. Gimi A. RIMBU, 25 March 2010, Hydrogen and Fuel Cells for Clean Cities - Vehicles and Buildings - Conference, Birmingham, UK (Means of verification: registered MANDAT for delegation; registered REPORT on activity).

2. Ing.Radu MIREA VASILESCU (young researcher under 35), 25 March 2010, Hydrogen and Fuel Cells for Clean Cities - Vehicles and Buildings - Conference, Birmingham, UK (Means of verification: registered MANDAT for delegation; registered REPORT on activity).

3. Ing. Mihai IORDOC (young researcher under 35), 25 March 2010, Hydrogen and Fuel Cells for Clean Cities - Vehicles and Buildings - Conference, Birmingham, UK (Means of verification: registered MANDAT for delegation; registered REPORT on activity).

Task 4.2 Attendance to national and international Exhibitions Human effort: 6 persons-month, from which: 1 event \* 19 persons/event \* 7days / 22 days/month = 6 persons-month.

1. International Technical Fair of Bucharest (TIB 2009), 8-15 October 2010, Bucharest, Romania. Participants: Gimi A. RIMBU, Iulian IORDACHE, Mariana LUCACI, Radu MIREA, Mihai IORDOC, Adela BARA, Cristina BANCIU, Violeta TSAKIRIS, Lucia LEONAT, Teisanu ARISTOFAN, Sorina MITREA, Magdalena LUNGU, Delia PATROI, Eros PATROI, Gabi OBREJA, Ciprian ONICA, Wilhelm KAPPEL, Elena ENESCU and Livia STAN

Task 4.3 Promotional activities Human effort: 0.3 persons-month, from which: 3persons \* 2days / 22day/month = 0.3 persons-month

1. Technology Networks - Research and Development Opportunities for Business and Academics, Coventry, UK, 24 March 2010. - Promotional activity regarding short presentation of the project results and the expertise and scientific results at INCIE ICPE-CA and ICPE-HYFC Lab, toward the international academic and business media, has been organized in the frame of the event Technology Networks - Research and Development Opportunities for Business and Academics. Participants: Dr.ing. Gimi A. RIMBU, Ing.Radu MIREA VASILESCU (young researcher under 35) and Ing. Mihai IORDOC (young researcher under 35). Means of verification: registered MANDAT for delegation; registered REPORT on activity.

2. Brokerage Event, Birmingham, UK, 25 March 2010 - Promotional activity regarding short presentation of the project results and the expertise and scientific results at INCIE ICPE-CA and ICPE-HYFC Lab, toward the international academic and business media, has been organized in the frame of the event Brokerage Event. Participants: Dr.ing. Gimi A. RIMBU, Ing.Radu MIREA VASILESCU (young researcher under 35) and Ing. Mihai IORDOC (young researcher under 35). Means of verification: registered MANDAT for delegation; registered REPORT on activity.

from 01/04/2010 to 30/09/2010 Task 4.1 Attendance to specialized national and international conferences and workshops Human effort: 1.05 persons-month, from which: 1 person \*

$3\text{days} * 2 \text{ events} / 22\text{day/month} = 0.3 \text{ persons-month}$ 
 $1 \text{ person} * 3\text{days} / 22\text{day/month} = 0.15 \text{ persons-month}$ 
 $2 \text{ persons} * 5\text{days} * 1 \text{ event} / 22\text{day/month} = 0.45 \text{ persons-month}$ 
 $2 \text{ persons} * 3\text{days} * 1 \text{ event} / 22\text{day/month} = 0.15 \text{ persons-month}$

1. Tsakiris Violeta, 1st International Conference „Advances in Engineering and Management", 19-21/05/2010, Drobeta Turnu Severin, Romania
2. Tsakiris Violeta, 4th International Conference: Innovative technologies for Soldering the Advanced Materials, 10-11 June 2010, Timisoara, Romania
3. Aristofan TEISANU, 11th International Balkan Workshop on Applied Physics, 07/07 - 09/07/2010, Constanta, Romania.
4. Lucia LEONAT (young researcher under 35), International Conference "JUNIOR EUROMAT 2010", 26-30 July 2010, Lausanne, Switzerland
5. Mihai IORDOC (young researcher under 35), International Conference "JUNIOR EUROMAT 2010", 26-30 July 2010, Lausanne, Switzerland
6. Mariana LUCACI, „Industrial Technologies 2010 - Integrating Nanomaterials and Production", 7 - 9 September 2010, Bruxelles, Belgium
7. Gimi A. RIMBU, „Industrial Technologies 2010 - Integrating Nanomaterials and Production", 7 - 9 September 2010, Bruxelles, Belgium

**Task 4.2 Attendance to national and international Exhibitions**  
 Human effort: 1.05 persons-month, from which:
  $1\text{person} * 3\text{days} / 22\text{day/month} = 0.15 \text{ persons-month}$ 
 $4\text{persons} * 7\text{days} / 22\text{day/month} = 0.3 \text{ persons-month}$ 
 $1\text{person} * 14\text{days} / 22\text{day/month} = 0.6 \text{ persons-month}$

1. Gabriela OBREJA, period: 19/05 - 21/05/2010, The Exhibition on Technologies and Equipments for Renewable Energy (STEER) 2010, The Commerce and Industry Chamber of Ialimita, 19/05 - 21/05/2010, Romania
2. Dr. Gimi A. RIMBU, Hannover Messe 2010, 19/04 - 23/04/2010, Germany
3. Ing. Ciprian ONICA, Hannover Messe 2010, 19/04 - 23/04/2010, Germany
4. Ing. Gabriela OBREJA, Hannover Messe 2010, 19/04 - 23/04/2010, Germany
5. Ing. Radu MIREA-VASILESCU (young researcher under 35), Hannover Messe 2010, 19/04 - 23/04/2010, Germany
6. Dr. Gimi A. RIMBU, Shanghai Expo 2010, Romanian Pavilion - Green City, 26.07 - 07.08.2010, Shanghai, China, according to the invitation no.339 / 12.02.2010 on behalf of Romanian Ministry for Economy, Commerce and Trade (MECMA)

**Task 4.3 Promotional activities**  
 Human effort: 0.85 persons-month, from which:
  $7 \text{ persons} * 1\text{day} / 22\text{day/month} = 0.3 \text{ persons-month}$ 
 $3 \text{ persons} * 2\text{day} / 22\text{day/month} = 0.3 \text{ persons-month}$ 
 $1 \text{ person} * 1\text{day} / 22\text{day/month} = 0.05 \text{ persons-month}$ 
 $1 \text{ event} * 1\text{day} * 4 \text{ person} / 22\text{day/month} = 0.2 \text{ persons-month}$

1. National Seminar - DIS-CDI - "Institutional Development of the R&DI System and Economic Performance", organized by INCSMPS Bucharest in collaboration with INCDIE ICPE-CA, ICSI Rm.Valcea and UPT, 7th - 8th July 2010 - Promotional activity for information on the Institutional Development of the R&DI System and Economic Performance, toward the industry representatives, universities, local authorities and economic environment.
2. Investors Forum Expo Shanghai, 29th July 2010 Romanian Pavilion - Promotional activity for information on the RTD capacity and potential, expertise and scientific results at INCDIE ICPE-CA, toward the international industry representatives, economic and social environment.  
 Means of verification: program of promotional activity and registered letter to MECMA for including INCDIE ICPE-CA in the Forum Program.
3. Open Space Science Show, 24th September 2010, Parcul Tineretului (The Youth Park) in Bucharest. ICPE-CA was co-organiser and responsible for the Energy demonstration program (main organiser: National Institute for R&D in Physics and Nuclear Engineering - Horia Hulubei and Politehnica University of Bucharest). Promotional activity gave the best occasion in the year for spreading the knowledge and research results of the INCDIE ICPE-CA and ICPE-HYFC Laboratory toward a large mass of people: middle and high schools students and professors, university students and professors, representatives of the Ministry of Education, local authorities, economic and social environment. The show was visited by

around 1000 people (program and photos presented on the project's website). 4. INCDIE ICPE-CA Open Gates, 30th Sept 2010 - Promotional activity for information on the RTD capacity and potential, expertise and scientific results at INCDIE ICPE-CA, toward the industry representatives, universities, local authorities, economic and social environment. Means of verification: program of promotional activity. from 01/10/2010 to 31/03/2011 Task 4.1 Attendance to specialized national and international conferences and workshops Human effort: 0.55 persons-month, from which:  $4 \text{ persons} * 1 \text{ day} * 1 \text{ event} / 22 \text{ day/month} = 0.2 \text{ persons-month}$   $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$   $1 \text{ person} * 1 \text{ day} / 22 \text{ day/month} = 0.05 \text{ persons-month}$   $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$  1. Iulian IORDACHE, Radu MIREA VASILESCU, Mihai IORDOC, Aristofan TEISANU, 7th Annual International Conference Partnering and Exhibition: Generating the Hydrogen and Fuel Cell Society, and the Brokerage Event, 30 March 2011, Birmingham, UK 2. Violeta TSAKIRIS, National Conference - Advanced Composite Materials Engineering COMAT 2010, 27-29 October 2010, Brasov, Romania 3. Gimi A. RIMBU, 3rd WG Black Sea Renewable Energy Meeting, 30 March 2011, Bruxelles, Belgium 4. Gimi A. RIMBU, Conferinta Internationala EGSD 2011 (International Conference - Education and Gouvernance for Sustainable Development EGSD 2011), 16/03 - 18/03/2011, Constanta, Romania Task 4.2 Attendance to national and international Exhibitions Human effort: 0.24 persons-month, from which:  $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$   $1 \text{ person} * 2 \text{ days} / 22 \text{ day/month} = 0.09 \text{ persons-month}$  1. Wilhelm KAPPEL, International Salon of Hydraulics and Pneumatics Hervex 2010, 10-12 November 2010, Calimanesti, Romania 2. Ciprian ONICA, Salonul Regional al Cercetarii (Regional Salon of Scientific Research), 10-11 November 2010, Calimanesti, Romania Task 4.3 Promotional activities - Promotional activities in preparation from 01/04/2011 to 30/09/2011 Task 4.1 Attendance to specialized national and international conferences and workshops Human effort: 2.99 persons-month from which:  $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$   $2 \text{ persons} * 1 \text{ day} * 1 \text{ event} / 22 \text{ day/month} = 0.09 \text{ persons-month}$   $1 \text{ person} * 2 \text{ days} / 22 \text{ day/month} = 0.09 \text{ persons-month}$   $1 \text{ person} * 1 \text{ day} / 22 \text{ day/month} = 0.05 \text{ persons-month}$   $2 \text{ persons} * 3 \text{ days} / 22 \text{ day/month} = 0.3 \text{ persons-month}$   $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$   $1 \text{ person} * 6 \text{ days} / 22 \text{ day/month} = 0.3 \text{ persons-month}$   $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$   $2 \text{ persons} * 4 \text{ days} / 22 \text{ day/month} = 0.36 \text{ persons-month}$   $1 \text{ person} * 2 \text{ days} / 22 \text{ day/month} = 0.09 \text{ persons-month}$   $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$   $1 \text{ person} * 6 \text{ days} / 22 \text{ day/month} = 0.3 \text{ persons-month}$   $2 \text{ persons} * 3 \text{ days} / 22 \text{ day/month} = 0.3 \text{ persons-month}$   $1 \text{ person} * 3 \text{ days} / 22 \text{ day/month} = 0.15 \text{ persons-month}$   $4 \text{ persons} * 2 \text{ days} / 22 \text{ day/month} = 0.36 \text{ persons-month}$  1. Gimi A. RIMBU, Workshop Alba Iulia Business Forum, organized by Ministry of Foreign Affairs, Alba Iulia City Council and Baden Wurttemberg Stainbeis Foundation, May 16-18, 2011, Alba Iulia, Romania. 2. Gimi A. RIMBU and Iulian IORDACHE, Workshop "Biomass and renewable energies: Way to go?" and the Brokerage "Renewable Energies - Business meets public decision makers", in the frame of the event Pannonia Academy 2011 - Becoming Europe, 5th May 2011, European Centre for Renewable Energy in Gussing, Austria. 3. Carmen MATEESCU, 2nd AEBIOM European Bioenergy Conference, Bruxelles, Albert Hall Complex and European Parliament, Belgium, June 29-30, 2011 4. Gimi A. RIMBU, Intenational Forum - Business Lunch Talk - Future Topics in Raw Materials, Bruxelles, Belgium, 21st March 2011, KOWI 5. Adela BARA, Mariana LUCACI, Conference EuroNanoForum 2011, Budapest, Hungary, May 30 - June 01, 2011 6. Sergiu NICOLAE, Workshop "Road Show Europe Renewable Energy", May 25 - 28, 2011, Sofia, Bulgaria 7. Mihai IORDOC, 14th European Conference Applications of Surfaces and Interfaces Analysis ECASIA 2011, Cardiff, UK, September 04-

09, 2011 8. Violeta Tsakiris, Conferinta Nationala - Probleme Actuale ale Sudarii in Contextul Globalizarii, Chisinau, Moldova Republic, October 12-14, 2011 9. Adela BARA, Cristina BANCIU, 11th International Conference on Carbon Dioxide Utilization, June 27-30, 2011, Dijon, France 10. Gimi A. RIMBU, Workshop organized by General Electric, GE Research Centre, Munchen, Germany, July 14-15, 2011 11. Alexandru IORGA, 2-nd International Exergy, Life Cycle Assessment and Sustainability Workshop and Symposium, June 19-21, 2011, Nisyros, Grece 12. Iulian IORDACHE, Workshop organized by Romanian Association for Software and Electronic Industry (ARIES), Norway, September 12-17, 2011 13. Corina BANUTANU, Gabriela OPRINA, International Meeting for Energy and Environment Technology Companies, Grea Ventures 2011, Potsdam, Germany, May 15-17, 2011 14. Violeta Tsakiris, Conference Innovative Technologies for Binding the Advanced Materials ISIM 2011, Timisoara, Romania, July 15-17, 2011 15. Wilhelm KAPPEL, Gimi A. RIMBU, Gheorghe NEAGU, Sergiu NICOLAE, Workshop SEE Hydropower, May 18-19, 2011, Tulcea, Romania

Task 4.2 Attendance to national and international Exhibitions Human effort: 7.24 persons-month, from which: 7 persons \* 5days / 22day/month = 1.6 persons-month 31 persons \* 4days / 22day/month = 5.64 persons-month

1. Ion DOBRIN, Elena ENESCU, Carmen MATEESCU, Gheorghe NEAGU, Sergiu NICOLAE, Gabriela OBREJA, Gimi A. RIMBU, The Exhibition Hannover Messe 2011, April 4-8 2011, Hannover, Germany

2. DOBRIN Ion; OPRINA Gabriela; BUNEA Florentina; POPA Marius; MARIN Dorian; MATEESCU Carmen; BABUTANU Corina; NEDELICU Adrian; NICOLAE Sergiu; ILIE Cristinel; CHIRITA Ionel; PÎSLARU-Danescu Lucian; STOICA Victor; Gimi A. RIMBU, Iulian IORDACHE, Mariana LUCACI, Radu MIREA, Mihai IORDOC, Adela BARA, Cristina BANCIU, Violeta TSAKIRIS, Teisanu ARISTOFAN, Sorina MITREA, Magdalena LUNGU, Delia PATROI, Eros PATROI, Gabi OBREJA, Ciprian ONICA, Wilhelm KAPPEL, Elena ENESCU and Livia STAN, International Technical Fair of Bucharest (TIB 2011), 28-31 October 2011, Bucharest, Romania.

Task 4.3 Promotional activities Human effort: 0.18 persons-month, from which: 4 persons \* 1days / 22day/month = 0.18 persons-month

Promotional activity at the Green Energy - Romania and China Workshop was organized by INCDIE ICPE-CA, during 28th of June 2011, representing the ICPE-HYFC project presentation to the audience which included representatives from Romanian small and medium-sized enterprises (SME), research institutes, public authorities, NGOs and foreign specialists. from 01/10/2011 to 31/03/2012

Task 4.1 Attendance to specialized national and international conferences and workshops Human effort: 0.42 persons-month, from which: 3 persons \* 3days \* 1 event / 22day/month = 0.4 persons-month 1 person \* 3days / 22day/month = 0.02 persons-month

1. Mariana Lucaci, EuroNanoForum, 30/05/2011 - 01/06/2011, Budapest Congress and World Trade Center, Budapest, Hungary; 2. Adela Bara, EuroNanoForum, 30/05/2011 - 01/06/2011, Budapest Congress and World Trade Center, Budapest, Hungary; 3. Gabriela Hristea, EuroNanoForum, 30/05/2011 - 01/06/2011, Budapest Congress and World Trade Center, Budapest, Hungary; 4. Carmen Mateescu, Tara Galilor (invited lecturer), Sustainable Energy Best Practice in the European Regions - Seminar Tour, 13/03/2012 - 15/03/2012, Swansea University, Wales, UK.

Task 4.2 Attendance to national and international Exhibitions

Task 4.3 Promotional activities Milestones and deliverables in WP4 Milestones, means of verification and expected result: M4.1 - Promotional activities. Means of verification: Reports on promotional activities done after 6th, 12th, 16th, 18th and 27th months.

- 8 promotional activities done and reported
- 24 Scientific presentations at national and international conferences:

1. Metal-doped conductive polymer for hydrogen storage, Authors: M. Iordoc, G. Rimbu, R. Vasilescu-Mirea, I. Stamatina, International Conference "Junior Euromat 2010", 26-30 July 2010, Lausanne, Switzerland

2. Porosity measurements for carbon nanotubes doped with some transitional metals, Authors: L. Leonat, G. Rimbu, M. Iordoc, International Conference "Junior Euromat 2010", 26-30 July 2010, Lausanne, Switzerland

3. Nanometric Al<sub>2</sub>O<sub>3</sub> Particulate-Reinforced Aluminum Composites, Authors: Violeta TSAKIRIS, Elena ENESCU, Mariana LUCACI, Georgeta ALECU, Lucia LEONAT, 1st International Conference „Advances in Engineering and Management", 19-21/05/2010, Drobeta Turnu Severin, Romania, published in the conference proceeding.

4. Real time remote monitoring of air pollutants and their online transmission, Authors: Georgeta ALECU, Marius ENACHE, Violeta TSAKIRIS, 1st International Conference „Advances in Engineering and Management", 19-21/05/2010, Drobeta Turnu Severin, Romania, published in the conference proceeding

5. Aluminum based composites reinforced with sic nanometric particulates, Authors: V. Tsakiris, E. Enescu, M. Lucaci, G. Alecu, L. Leonat, F. Albu, V. Marinescu, D. Patroi, 3rd International Conference: Advanced Composite Materials Engineering - COMAT 2010, 27-29 October 2010, Brasov, Romania.

6. Smart Ti (50-x)AlxNi<sub>30</sub>Cu<sub>20</sub> (x=1,3,6) reinforced with coherent low-misfit nanoscale precipitates composites, Authors: Mariana Lucaci, Mihaela Valeanu, Delia Patroi, Diana Cirstea, Sorina Mitrea, 3rd International Conference: Advanced Composite Materials Engineering - COMAT 2010, 27-29 October 2010, Brasov, Romania.

7. Nonoxide ceramic composites with superior mechanical properties based on SiC and Si<sub>3</sub>N<sub>4</sub>, Authors: Fl. Albu, Cr. Seitan, Ch. Târdei, V. Tsakiris, 3rd International Conference: Advanced Composite Materials Engineering - COMAT 2010, 27-29 October 2010, Brasov, Romania.

8. Pivots for magnetically fixing of dental prosthesis obtained by diffusion welding technique, Authors: V. Tsakiris, I. Cristinel, V. Marinescu, R. Rosu, A. Petica, M. Popa, I. Chirita, 4th International Conference: Innovative technologies for Soldering the Advanced Materials, 10-11 June 2010, Timisoara, Romania

9. Attainment of hardened structures on preselected zones of a piece by new solutions and modern systems integrated on electron beam equipment, Authors: D. Neagu, W. Kappel, 4th International Conference: Innovative technologies for Soldering the Advanced Materials, 10-11 June 2010, Timisoara, Romania

10. Electrical Overhead Conductor for High Voltage Lines, Self-protective at Frost and Ice Deposition, A.Iorga, R.Saban, L.Palii, E.A.Patroi, 2nd international Exergy, Lyfe Cycle Assessment and Sustainability Workshop and Symposium ELCAS 2011, 19-21 June 2011, Nysiros Island, Greece

11. Opportunities for Scientific and Business Partnership in the Black Sea Region, Dr. Gimi A. RIMBU, Conferinta Internationala „Educatie si Guvernanta pentru Dezvoltare Sustenabila - EGSD 2011", Universitatea Ovidius din Constanta, 16/03 - 18/03/2011, Constanta, Romania.

12. Integrated solution for green energy generation based on biodegradable wastes, Allo Assmann, Carmen Mateescu, Wilhelm Kappel, Arnold G. Klingeis, Florin T. Tanasescu, Sepp Rotmayr, Maria Sinca, Silviu Nate, Conferinta Internationala „Educatie si Guvernanta pentru Dezvoltare Sustenabila - EGSD 2011", Universitatea Ovidius din Constanta, 16/03 - 18/03/2011, Constanta, Romania.

13. Al-Al<sub>2</sub>O<sub>3</sub> metallic composites consolidated by spark plasma sintering, V. Tsakiris, E. Enescu, M. Lungu, M. Lucaci, D. Savu, V. Marinescu, F. Albu, G. Alecu, D. Patroi, The 5th International Conference - Innovative technologies for joining advanced materials, 16-17 iunie 2011, Timisoara, Romania.

14. Initiative for creating the Black Sea Centre for Excellence in Renewable Energy, Gimi A. RIMBU, 3rd WG Black Sea Renewable Energy Meeting, 30 March 2011, Bruxelles, Belgium.

15. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU, Conferinta Internationala EGSD 2011 (International Conference - Education and Governance for Sustainable Development EGSD 2011), 16/03 - 18/03/2011, Constanta, Romania.

16. Initiative for creating the Black Sea Centre for

Excelence in Renewable Energy, Gimi A. RIMBU, Workshop Alba Iulia Business Forum, organized by Ministry of Foreign Affairs, Alba Iulia City Council and Baden Wurttemberg Stainbeis Foundation, May 16-18, 2011, Alba Iulia, Romania. 17. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU and Iulian IORDACHE, Workshop "Biomass and renewable energies: Way to go?" and the Brokerage "Renewable Energies - Business meets public decision makers", in the frame of the event Pannonia Academy 2011 - Becoming Europe, 5th May 2011, European Centre for Renewable Energy in Gussing, Austria. 18. Expertise and interest of INCDIE ICPE-CA in fuel cells and hydrogen storage technologies, Iulian IORDACHE, Radu MIREA VASILESCU, Mihai IORDOC, Aristofan TEISANU, 7th Annual International Conference Partnering and Exhibition: Generating the Hydrogen and Fuel Cell Society, and the Brokerage Event, 30 March 2011, Birmingham, UK. 19. Expertise and interest of INCDIE ICPE-CA in renewable energy, Dr. Gimi A. RIMBU, Shanghai Expo 2010, Romanian Pavilion - Green City, 26.07 - 07.08.2010, Shanghai, China, according to the invitation no.339 / 12.02.2010 on behalf of Romanian Ministry for Economy, Commerce and Trade (MECMA). 20. Expertise and interest of INCDIE ICPE-CA in fuel cells and hydrogen storage technologies, Dr.ing. Gimi A. RIMBU, 25 March 2010, Hydrogen and Fuel Cells for Clean Cities - Vehicles and Buildings - Conference, Birmingham, UK. 21. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU, Workshop organized by General Electric, GE Research Centre, Munchen, Germany, July 14-15, 2011. 22. Expertise and interest of INCDIE ICPE-CA in renewable energy - hydropower. Kinetic energy conversion of Danube river flow, Wilhelm KAPPEL, Gimi A. RIMBU, Gheorghe NEAGU, Sergiu NICOLAE, Workshop SEE Hydropower, May 18-19, 2011, Tulcea, Romania. 23. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU, Green Energy - Romania and China Workshop 28th of June 2011, Bucharest. 24. Biomass reactor for rural applications, Carmen Mateescu, Tara Galilor (invited lecturer), Sustainable Energy Best Practice in the European Regions - Seminar Tour, 13/03/2012 - 15/03/2012, Swansea University, Wales, UK. - 6 Publications (peer reviewed) in journals and conference proceedings, acknowledging the project: 1. Ioan Viorel Branzoi, Mihai Iordoc, Florina Branzoi and Gimi Rimbu, Growth and characterization of zirconia ceramic film formed by plasma electrolytic oxidation on biomedical Zr3Ta alloy, Surf. Interface Anal. (2012), Volume 44, Issue 8, 2012, Pages 914-918; 2. Ioan Viorel Branzoi, Mihai Iordoc (corresponding author), Florina Branzoi, Gimi Rimbu (corresponding author) and Virgil Marinescu, Synthesis and characterization of high-voltage electrodeposited diamond-like carbon protective coating on TiAlV biomedical substrates, Surf. Interface Anal. (2012), Volume 44, Issue 8, 2012, Pages 1193-1197; 3. C. Banciu, A. Bara, L. Leonat, D. Patroi, Carbon Monoliths for CO2 Adsorption, Optoelectronics And Advanced Materials - Rapid Communications, Vol. 5, No. 12, December 2011, Pages 1341 - 1345; 4. Violeta Tsakiris, Wilhelm Kappel, Georgeta Alecu, Diana Cirstea, Lucia Leonat, Gimi Rimbu, Dissimilar metallin junctions obtained by solid diffusion welding technique, SUDURA XXII - 1/2012, Pages 29-38; 5. V. Tsakiris, E. Enescu, M. Lungu, M. Lucaci, D. Savu, V. Marinescu, F. Albu, G. Alecu, D. Patroi, Al-Al2O3 metallic composites consolidated by spark plasma sintering, published in the proceeding of the 5th International Conference - Innovative technologies for joining advanced materials, 16-17 iunie 2011, Timisoara, Romania; 6. A.Iorga, R.Saban, L.Palii, E.A.Patroi, Electrical Overhead Conductor for High Voltage Lines, Self-protective at Frost and Ice Deposition, published in the proceeding of the 2nd international Exergy, Lyfe Cycle Assessment and Sustainability Workshop and Symposium ELCAS 2011, 19-21 June 2011, Nysiros Island, Greece. Results:

- Facilitating the knowledge transfer to the international level;
- Balancing the scientific knowledge at the national, regional and EU level;
- Networking with EU research centres with similar activities and better expertise in the field renewable energy technologies;
- Enhance the scientific and expertised reputation of INCDIE ICPE-CA and HyFCLab. Deliverables D7 - Increased visibility and linkage of INCDIE ICPE-CA with industry, universities, local authorities, economic and social environment (presented in the 1st and 2nd reports to EC). Means of verification: Deliverable D7 will be monitored by the number of attending to the scientific events like conferences and workshops, as well as number of focused promotional activities realised.
- 35 attendings to national and international conferences and workshops
- 9 attendings to national and international exhibitions
- 8 promotional activities realised
- 24 Scientific presentations and publications in the conference proceedings
- 6 Publications (peer reviewed) in journals and conference proceedings, acknowledging the project WP5. Project management and activities co-ordination Total human effort in WP5: 28.51 persons-month Management tasks and achievements The project management consists in three tasks in which are varying a number of individuals in different positions, depending on the activities and supporting distributed responsibilities. Task 5.1. Monitoring project and management activities (M5.1, M5.3) Task 5.2 Financial accounting (M5.2) Task 5.3. Reporting to European Commission Achievements: Deliverables: D2, D5, D6, D8, D9, D10, D11 and D12 from 01/04/2009 to 30/09/2009 Human effort: 3.04 persons-month, from which:
  - o Management activities in WP1. 1 person \* 2h/day \* 22day/month \* about 2 months / 172h/month = 0.5 persons-month
  - o Management activities in WP2 1 person \* 2h/day \* 22day/month \* 1 month / 172h/month = 0.26 persons-month
  - o Management activities in WP3. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.26 persons-month
  - o Management activities in WP4. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.26 persons-month
  - o Management activities in WP5. 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
  - o IPR and economic assessment and monitoring. 2 persons \* 2h/day \* 22day/month \* about 0.5 months / 172h/month = 0.26 persons-month
 Review of the project progress: 1. Six monthly financial evaluation has been done (1st Six Monthly Economical Assessment) 2. Six monthly project progress review has been done by the Steering Committee (1st Six Monthly Minute of the Steering Committee Meeting) 3. Project website delivered (D9) as planned in the Annex 1 (see <http://www.icpe-ca.ro/fp7/en/> online) from 01/10/2009 to 30/03/2010 Human effort: 4.04 persons-month, from which:
  - o Management activities in WP1. 1 person \* 2h/day \* 22day/month \* about 6 months / 172h/month =1.5 persons-month
  - o Management activities in WP2 1 person \* 2h/day \* 22day/month \* 1 month / 172h/month = 0.26 persons-month
  - o Management activities in WP3. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.26 persons-month
  - o Management activities in WP4. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.26 persons-month
  - o Management activities in WP5. 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
  - o IPR and economic assessment and monitoring. 2 persons \* 2h/day \* 22day/month \* about 0.5 months / 172h/month = 0.26 persons-month
 Review of the project progress: 1. Six monthly financial evaluation has been done (2nd Six Monthly Economical Assessment) 2. Six monthly project progress review has been done by the Steering Committee (2nd Six Monthly Minute of the Steering Committee Meeting) 3. Project website updated (see <http://www.icpe-ca.ro/fp7/en/> online) from 01/04/2010 to 30/09/2010 Human

effort: 4.04 persons-month, from which:

- o Management activities in WP1. 1 person \* 2h/day \* 22day/month \* about 6 months / 172h/month =1.5 persons-month
- o Management activities in WP2 1 person \* 2h/day \* 22day/month \* 1 month / 172h/month = 0.26 persons-month
- o Management activities in WP3. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.26 persons-month
- o Management activities in WP4. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.26 persons-month
- o Management activities in WP5. 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
- o IPR and economic assessment and monitoring. 2 persons \* 2h/day \* 22day/month \* about 0.5 months / 172h/month = 0.26 persons-month

Review of the project progress:

1. Six monthly financial evaluation has been done (3rd Six Monthly Economical Assessment)
2. Six monthly project progress review has been done by the Steering Committee (3rd Six Monthly Minute of the Steering Committee Meeting)
3. Project website updated (see <http://www.icpe-ca.ro/fp7/en/> online) from 01/10/2010 to 31/03/2011

Human effort: 4.25 persons-month, from which:

- o Management activities in WP1. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month =0.25 persons-month
- o Management activities in WP2 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
- o Management activities in WP3. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.25 persons-month
- o Management activities in WP4. 1 person \* 2h/day \* 22day/month \* about 6 months / 172h/month = 0.25 persons-month
- o Management activities in WP5. 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
- o IPR and economic assessment and monitoring. 2 persons \* 2h/day \* 22day/month \* about 1 months / 172h/month = 0.5 persons-month

Review of the project progress:

1. Six monthly financial evaluation has been done (4th Six Monthly Economical Assessment)
2. Six monthly project progress review has been done by the Steering Committee (4th Six Monthly Minute of the Steering Committee Meeting).
3. Project website updated (see <http://www.icpe-ca.ro/fp7/en/> online) from 01/04/2011 to 31/09/2011

Human effort: 4.0 persons-month, from which:

- o Management activities in WP1. 1 person \* 2h/day \* 22day/month \* about 0 month / 172h/month =0.00 persons-month
- o Management activities in WP2 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
- o Management activities in WP3. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.25 persons-month
- o Management activities in WP4. 1 person \* 2h/day \* 22day/month \* about 6 months / 172h/month = 0.25 persons-month
- o Management activities in WP5. 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
- o IPR and economic assessment and monitoring. 2 persons \* 2h/day \* 22day/month \* about 1 months / 172h/month = 0.5 persons-month

Review of the project progress:

1. Six monthly financial evaluation has been done (5th Six Monthly Economical Assessment)
2. Six monthly project progress review has been done by the Steering Committee (5th Six Monthly Minute of the Steering Committee Meeting).
3. Project website updated (see <http://www.icpe-ca.ro/fp7/en/> online) from 01/10/2011 to 31/03/2012

Human effort: 9.13 persons-month, from which:

- o Management activities in WP1. 1 person \* 2h/day \* 22day/month \* about 0 month / 172h/month =0.00 persons-month
- o Management activities in WP2 2 persons \* 3.4h/day \* 22day/month \* 6 months / 172h/month = 5.22 persons-month
- o Management activities in WP3. 1 person \* 2h/day \* 22day/month \* about 1 month / 172h/month = 0.22 persons-month
- o Management activities in WP4. 1 person \* 2h/day \* 22day/month \* about 6 months / 172h/month = 0.22 persons-month
- o Management activities in WP5. 1 person \* 2h/day \* 22day/month \* 6 months / 172h/month = 1.5 persons-month
- o IPR and economic assessment and monitoring. 2 persons \* 2/day \* 22day/month \* about 4 months / 172h/month = 1.97 persons-month

Review of the project progress:

1. Six monthly financial evaluation has been done



(6th Six Monthly Economical Assessment) 2. Six monthly project progress review has been done by the Steering Committee (6th Six Monthly Minute of the Steering Committee Meeting). 3. Project website updated (see <http://www.icpe-ca.ro/fp7/en/> online) Milestones and deliverables in WP5 Milestone M5.1 - Evaluation of WPs technical progress. Means of verification: Technical Reports in the 6th, 12th, 18th, 24th, 30th and 36th month to EC project's monitor. Results: Continuous monitoring of envisaged activities in the project.

- 1st Six Monthly Minute of the Steering Committee Meeting
- 2nd Six Monthly Minute of the Steering Committee Meeting
- 3rd Six Monthly Minute of the Steering Committee Meeting
- 4th Six Monthly Minute of the Steering Committee Meeting
- 5th Six Monthly Minute of the Steering Committee Meeting
- 6th Six Monthly Minute of the Steering Committee Meeting Milestone M5.2

- Evaluation of the financial statement. Means of verification: Economic Reports to PD in the 6th, 12th, 18th, 24th, 30th and 36th month to EC project's monitor. Results: Continuous monitoring of project funds. Results: Continuous monitoring of financial activities in the project.

- 1st Six Monthly Economical Assessment
- 2nd Six Monthly Economical Assessment
- 3rd Six Monthly Economical Assessment
- 4th Six Monthly Economical Assessment
- 5th Six Monthly Economical Assessment
- 6th Six Monthly Economical Assessment Milestone M5.3 - Project web-site and Delivery Electronic System. Means of verification: Project web-site containing a Delivery Electronic System in the 6th month. Results: Performant and fluent management of the project. <http://www.icpe-ca.ro/fp7/en/> Deliverables (brief description and month of delivery) D2 - Job opportunities for Romanian scientists in the field of renewable energy research (presented in the 1st and 2nd reports to EC) Means of verification: New RTD acquired capacity at INCDIE ICPE-CA and HyFCLab and number of hired researchers. INCDIE ICPE-CA has been reorganized in three main departments in April 2010, and a new department has been formed under a more focused RTD capacity, including the all expertise in renewable energy and related technologies in institute, as well ICPE-HYFC Laboratory: Department for Energy Efficiency in Conversion and Consumption (ECCE).

- In the new departmental configuration, new job opportunities have been opened and 1 specialist has been employed in the last 18th months (Eng. Adrian NEDELICU, specialist in renewable energy, wind energy) and works in the ECCE Department.

- 2 incoming specialist has been recruited by INCDIE ICPE-CA - Dr. Radu SETNESCU (contract of employment), and Dr. Mircea VINATORU (agreement for future employment).

- New job opportunities have been opened and 5 young scientists (under 35 old) have been employed in the Department for Energy Efficiency in Conversion and Consumption (ECCE): Eng. Tanase Nicolae, specialist in mechanical engineering and technological design (2010); Eng. Mitulet Andreea, specialist in energy and energy networks (2011); Eng. Rares Chihaiia, specialist in energy and electrical engineering (2011), Eng. Dan Daniel, specialist in electrical engineering (2011); Nicola Nicoleta, specialist in biochemistry (2011) D5 - Dynamic and competitive regional society (presented in the 2nd report to EC). Means of verification: The HyFCLab group dynamism and competitiveness will be measured by the number of scientific projects developed in different priority thematic of EU.

- Based on the projects support, the staff of INC DIE ICPE-CA and the ECCE Department managed to become more dynamic and competitive in region, the proves being the opened international collaborations for joint participation in the regional calls for projects.
- 12 proposals submitted in the regional calls: Sowth East Europe (SEE) Programme; Romania-Bulgaria Crossborder Cooperation Programme 2007-2013; Joint Operational Programme "Black Sea Basin 2007-2013; MNT ERANET Programme;
- 4 proposal funded. D6 - Potential consortium for participation in interdisciplinary research in FP7 projects, (presented in the 1st and 2nd reports to EC). Means of verification: Partnerships for participation in FP7 program.
- 8 proposals submitted in the FP7 Programme;
- 1 International sub-contract in a FP7 Project. D8 - Plan for using and disseminating knowledge Means of verification: Plan for knowledge dissemination on 2009 - 2011 (delivered in the 6th month); Updated plan for dissemination after 2011 (delivered 38th month, in the final report to EC).
- Plan for knowledge dissemination D9 - Project's website (delivered in the 6th month)
- <http://www.icpe-ca.ro/fp7/en/> D10 - Six monthly minutes of the Steering Committee meeting (delivered to EC project's monitor after the 6th, 12th, 18th, 24th, 30th and 36th months).
- 1st Six Monthly Minute of the Steering Committee Meeting
- 2nd Six Monthly Minute of the Steering Committee Meeting
- 3rd Six Monthly Minute of the Steering Committee Meeting
- 4th Six Monthly Minute of the Steering Committee Meeting
- 5th Six Monthly Minute of the Steering Committee Meeting
- 6th Six Monthly Minute of the Steering Committee Meeting
- 1st Six Monthly Economical Assessment
- 2nd Six Monthly Economical Assessment
- 3rd Six Monthly Economical Assessment
- 4th Six Monthly Economical Assessment
- 5th Six Monthly Economical Assessment
- 6th Six Monthly Economical Assessment D11 - Interim and final report to the EC, with certificates on financial statements (delivered to EC in the 20th and 38th months).
- 1st interim report to EC
- 2nd interim report to EC
- Final report to EC D12 - Short report on the status of deliverables no. 2,3,4,6 and 7 to EC project's monitor (delivered to EC project's monitor after the 12th and 30th months)
- Short report on the status of deliverables no. 2,3,4,6 and 7 in the the 30th month.

## Potential Impact:

The potential impact (including the socio-economic impact and the wider societal implications of the project so far) and the main dissemination activities and exploitation of results:

- 4 workshops organized, with a total no. of 347 participants, from which about 29 special invited lecturers from Romanian, EU (Poland, France, Greece, Spain, Germany, England, Czech Republic, Bulgaria, Turkey, Moldova and Ukraine) and Chinese research centers and universities;
- 1 workshop in preparation (out of the project period as further implementation of the project's results);
- 8 promotional activities realised;
- 24 Scientific presentations and publications in the conference proceedings;
- 6 Publications (peer reviewed) in journals and conference proceedings, acknowledging the project.

Organized workshops and conferences at national and international level

1. Conference - the Workshop "Innovation and Evolution by Research And Development (R&D) - SMEs Strategic Partnership", Bucharest, 10/09 - 12/09/2009. The conference had about 100 participants, from which 12 invited lecturers from Romanian and EU research centers (Poland, France, Greece, Spain, Germany, England, Check Republic and Ukraine). Fotos presented on the project's website: <http://www.icpe-ca.ro/fp7/en/>

2. Workshop - Renewable Energy (including Hydrogen and Fuel Cells) - Systems, Applications, storage, energy harvesting and materials for energy, in the frame of the 7th International Workshop on Electromagnetic Compatibility CEM 2010, 2-4 September 2010, Odorheiu Secuiesc, Romania. The workshop had about 79 participants, from which invited lecturers from Romanian and EU research centers (Egypt, Slovakia, Belgium). Fotos presented on the project's website: <http://www.icpe-ca.ro/fp7/en/>

3. Workshop - Technological Development on Renewable Energy Technologies in the Black Sea Region, in the frame of the Black Sea Forum on Renewable Energy" - BSFRE, Bucharest, Romania, 8th - 10th of November 2010. The workshop registered about 103 participants from Romania and 35 foreign participants (of 352 participants to the Forum). At the workshop have been invited as Special Invited Lecturers: (1) Prof. Nikolay MIHAILOV, Vice-Rector, "Angel Kanchev" University of Russe,, Bulgaria; (2) Prof. Viacheslav BARSUKOV, Head of Department of Electrochemical Power Engineering, Kiev National University of Technologies and Design, Ukraine; (3) Dr. Seref Naci ENGIN, EE PhD, Chief Senior Researcher, TUBITAK-Marmara Research Center Energy Institute Gebze, Kocaeli, Turkey; (4) Carsten Albrecht, President Federal Association for Wind Energy in Germany and (5) Acad.Prof. Ion BOSTAN, Rector, Technical University of R. Moldova, Member of the Academy of Moldova Republic, Moldova. The first three of them: Prof. Nikolay MIHAILOV; Prof. Viacheslav BARSUKOV and Dr. Seref Naci ENGIN have been supported by the FP7-REGPOT-229906/2009 project.

Fotos presented on the project's website: <http://www.icpe-ca.ro/fp7/en/>

4. Green Energy - Romania and China Workshop was organized by INC DIE ICPE-CA, during 28th - 29th of June 2011, in Bucharest and Avrig City, in collaboration with General Association of Engineers in Romania (AGIR). Have been invited as special guest the Mayor of Avrig City and the delegates of China Association for Science and Technology (CAST). A number of 65 persons have been registered as participants to the workshop, from which 10 foreign participants (9 from China and 1 from Germany).

Fotos presented on the project's website: <http://www.icpe-ca.ro/fp7/en/>

5. The 2nd Romanian - Chinese Workshop on Science and Technology "New Energy and its Business Opportunity in East Europe", Bucharest, June 6th - 8th 2012 and Avrig June 9th 2012. The event is in preparation by INCDIE ICPE-CA as main organizer, as a consequence of the success of the 1st Green Energy - Romania and China Workshop (28th - 29th of June 2011). The 2nd Romanian - Chinese Workshop on Science and Technology is supported also by the Romanian Ministry of Economy and the the Embassy of P.R.China. A number of about 30 chinese official delegates are expected to attend.

## Promotional activities

Month 1st - Month 18th

1. Open Space Science Show, 25th September 2009, Parcul Tineretului (The Youth Park) in Bucharest, ICPE-CA was co-organiser and responsible for the Energy demonstration program (main organiser: National Institute for R&D in Physics and Nuclear Engineering - Horia Hulubei and Politehica University of Bucharest). Promotional activity for spreading the knowledge and research results of the INCDIE ICPE-CA and ICPE-HYFC Laboratory toward a large mass of people: middle and high schools students and professors, university students and professors, representatives of the Ministry of Education, local authorities, economic and social environment. Fotos presented on the projects website:

<http://www.icpe-ca.ro/fp7/en/>

2. Technology Networks - Research and Development Opportunities for Business and Academics, Coventry, UK, 24 March 2010 - Promotional activity regarding short presentation of the project results and the expertise and scientific results at INCDIE ICPE-CA and ICPE-HYFC Lab, toward the international academic and business media.

3. Brokerage Event, Birmingham, UK, 25 March 2010 - Promotional activity regarding short presentation of the project results and the expertise and scientific results at INCDIE ICPE-CA and ICPE-HYFC Lab, toward the international academic and business media.

4. National Seminar - DIS-CDI - "Institutional Development of the R&DI System and Economic Performance", organized by INCSMPS Bucharest in collaboration with INCDIE ICPE-CA, ICSI Rm.Valcea and UPT, 7th - 8th July 2010 - Promotional activity for information on the Institutional Development of the R&DI System and Economic Performance, toward the industry representatives, universities, local authorities and economic environment.

5. Investors Forum Expo Shanghai, 29th July 2010 Romanian Pavilion - Promotional activity for information on the RTD capacity and potential, expertise and scientific results at INCDIE ICPE-CA, toward the international industry representatives, economic and social environment. Means of verification: program of promotional activity and registered letter to MECMA for including INCDIE ICPE-CA in the Forum Program.

6. Open Space Science Show, 24th September 2010, Parcul Tineretului (The Youth Park) in Bucharest. ICPE-CA was co-organiser and responsible for the Energy demonstration program (main organiser: National Institute for Research And Development (R&D) in Physics and Nuclear Engineering - Horia Hulubei and Politehica University of Bucharest). Promotional activity for spreading the knowledge and research results of the INCDIE ICPE-CA and ICPE-HYFC Laboratory toward a large mass of people: middle and high schools students and professors, university students and professors, representatives of the Ministry of Education, local authorities, economic and social environment. Fotos presented on the projects website:

<http://www.icpe-ca.ro/fp7/en/>

7. INCDIE ICPE-CA Open Gates, 30th Sept 2010 - Promotional activity for information on the RTD capacity and potential, expertise and scientific results at INCDIE ICPE-CA, toward the industry representatives, universities, local authorities, economic and social environment. Means

of verification: program of promotional activity. Fotos presented on the projects website: <http://www.icpe-ca.ro/fp7/en/>

8. Green Energy - Romania and China Workshop was organized as Promotional Event by INC DIE ICPE-CA, during 28th - 29th of June 2011, in Bucharest and Avrig City, in collaboration with General Association of Engineers in Romania (AGIR). Have been invited as special guest the Mayor of Avrig City and the delegates of China Association for Science and Technology (CAST). A number of 65 persons have been registered as participants to the workshop, from which 10 foreign participants (9 from China and 1 from Germany).

Scientific presentations and publications in the conference proceedings

1. Metal-doped conductive polymer for hydrogen storage, Authors: M. Iordoc, G. Rimbu, R. Vasilescu-Mirea, I. Stamatina, International Conference "Junior Euromat 2010", 26-30 July 2010, Lausanne, Switzerland
2. Porosity measurements for carbon nanotubes doped with some transitional metals, Authors: L. Leonat, G. Rimbu, M. Iordoc, International Conference "Junior Euromat 2010", 26-30 July 2010, Lausanne, Switzerland
3. Nanometric Al<sub>2</sub>O<sub>3</sub> Particulate-Reinforced Aluminum Composites, Authors: Violeta TSAKIRIS, Elena ENESCU, Mariana LUCACI, Georgeta ALECU, Lucia LEONAT, 1st International Conference ,,Advances in Engineering and Management'', 19-21/05/2010, Drobeta Turnu Severin, Romania, published in the conference proceeding.
4. Real time remote monitoring of air pollutants and their online transmission, Authors: Georgeta ALECU, Marius ENACHE, Violeta TSAKIRIS, 1st International Conference ,Advances in Engineering and Management, 19-21/05/2010, Drobeta Turnu Severin, Romania, published in the conference proceeding
5. Aluminum based composites reinforced with sic nanometric particulates, Authors: V. Tsakiris, E. Enescu, M. Lucaci, G. Alecu, L. Leonat, F. Albu, V. Marinescu, D. Patroi, 3rd International Conference: Advanced Composite Materials Engineering - COMAT 2010, 27-29 October 2010, Brasov, Romania.
6. Smart Ti (50-x)Al<sub>x</sub>Ni<sub>30</sub>Cu<sub>20</sub> (x=1,3,6) reinforced with coherent low-misfit nanoscale precipitates composites, Authors: Mariana Lucaci, Mihaela Valeanu, Delia Patroi, Diana Cirstea, Sorina Mitrea, 3rd International Conference: Advanced Composite Materials Engineering - COMAT 2010, 27-29 October 2010, Brasov, Romania.
7. Nonoxide ceramic composites with superior mechanical properties based on SiC and Si<sub>3</sub>N<sub>4</sub>, Authors: Fl. Albu , Cr. Seitan , Ch. Târdei, V. Tsakiris, 3rd International Conference: Advanced Composite Materials Engineering - COMAT 2010, 27-29 October 2010, Brasov, Romania.
8. Pivots for magnetically fixing of dental prosthesis obtained by diffusion welding technique, Authors: V. Tsakiris, I. Cristinel, V. Marinescu, R. Rosu, A. Petica, M. Popa, I. Chirita, 4th International Conference: Innovative technologies for Soldering the Advanced Materials, 10-11 June 2010, Timisoara, Romania
9. Attainment of hardened structures on preselected zones of a piece by new solutions and modern systems integrated on electron beam equipment, Authors: D. Neagu, W. Kappel, 4th International Conference: Innovative technologies for Soldering the Advanced Materials, 10-11 June 2010, Timisoara, Romania
10. Electrical Overhead Conductor for High Voltage Lines, Self-protective at Frost and Ice Deposition, A.Iorga, R.Saban, L.Palii, E.A.Patroi, 2nd international Exergy, Lyfe Cycle Assessment and Sustainability Workshop and Symposium ELCAS 2011, 19-21 June 2011, Nysiros Island, Greece

11. Opportunities for Scientific and Business Partnership in the Black Sea Region, Dr. Gimi A. RIMBU, Conferinta Internationala „Educatie si Guvernanta pentru Dezvoltare Sustenabila - EGSD 2011", Universitatea Ovidius din Constanta, 16/03 - 18/03/2011, Constanta, Romania.
12. Integrated solution for green energy generation based on biodegradable wastes, Allo Assmann, Carmen Mateescu, Wilhelm Kappel, Arnold G. Klingeis, Florin T. Tanasescu, Sepp Rotmayr, Maria Sinca, Silviu Nate, Conferinta Internationala „Educatie si Guvernanta pentru Dezvoltare Sustenabila - EGSD 2011", Universitatea Ovidius din Constanta, 16/03 - 18/03/2011, Constanta, Romania.
13. Al-Al<sub>2</sub>O<sub>3</sub> metallic composites consolidated by spark plasma sintering, V. Tsakiris, E. Enescu, M. Lungu, M. Lucaci, D. Savu, V. Marinescu, F. Albu, G. Alecu, D. Patroi, The 5th International Conference - Innovative technologies for joining advanced materials, 16-17 iunie 2011, Timisoara, Romania.
14. Initiative for creating the Black Sea Centre for Excellence in Renewable Energy, Gimi A. RIMBU, 3rd WG Black Sea Renewable Energy Meeting, 30 March 2011, Bruxelles, Belgium.
15. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU, Conferinta Internationala EGSD 2011 (International Conference - Education and Governance for Sustainable Development EGSD 2011), 16/03 - 18/03/2011, Constanta, Romania.
16. Initiative for creating the Black Sea Centre for Excellence in Renewable Energy, Gimi A. RIMBU, Workshop Alba Iulia Business Forum, organized by Ministry of Foreign Affairs, Alba Iulia City Council and Baden Wurttemberg Stainbeis Foundation, May 16-18, 2011, Alba Iulia, Romania.
17. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU and Iulian IORDACHE, Workshop "Biomass and renewable energies: Way to go?" and the Brokerage "Renewable Energies - Business meets public decision makers", in the frame of the event Pannonia Academy 2011 - Becoming Europe, 5th May 2011, European Centre for Renewable Energy in Gussing, Austria.
18. Expertise and interest of INCDIE ICPE-CA in fuel cells and hydrogen storage technologies, Iulian IORDACHE, Radu MIREA VASILESCU, Mihai IORDOC, Aristofan TEISANU, 7th Annual International Conference Partnering and Exhibition: Generating the Hydrogen and Fuel Cell Society, and the Brokerage Event, 30 March 2011, Birmingham, UK.
19. Expertise and interest of INCDIE ICPE-CA in renewable energy, Dr. Gimi A. RIMBU, Shanghai Expo 2010, Romanian Pavilion - Green City, 26.07 - 07.08.2010, Shanghai, China, according to the invitation no.339 / 12.02.2010 on behalf of Romanian Ministry for Economy, Commerce and Trade (MECMA).
20. Expertise and interest of INCDIE ICPE-CA in fuel cells and hydrogen storage technologies, Dr.ing. Gimi A. RIMBU, 25 March 2010, Hydrogen and Fuel Cells for Clean Cities - Vehicles and Buildings - Conference, Birmingham, UK.
21. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU, Workshop organized by General Electric, GE Research Centre, Munchen, Germany, July 14-15, 2011.
22. Expertise and interest of INCDIE ICPE-CA in renewable energy - hydropower. Kinetic energy conversion of Danube river flow, Wilhelm KAPPEL, Gimi A. RIMBU, Gheorghe NEAGU, Sergiu NICOLAE, Workshop SEE Hydropower, May 18-19, 2011, Tulcea, Romania.
23. Expertise and interest of INCDIE ICPE-CA in renewable energy, Gimi A. RIMBU, Green Energy - Romania and China Workshop 28th of June 2011, Bucharest.

24. Biomass reactor for rural applications, Carmen Mateescu, Tara Galilor (invited lecturer), Sustainable Energy Best Practice in the European Regions - Seminar Tour, 13/03/2012 - 15/03/2012, Swansea University, Wales, UK.

Publications (peer reviewed) in journals and conference proceedings, acknowledging the project

1. Ioan Viorel Branzoi, Mihai Iordoc, Florina Branzoi and Gimi Rimbu, Growth and characterization of zirconia ceramic film formed by plasma electrolytic oxidation on biomedical Zr<sub>3</sub>Ta alloy, Surf. Interface Anal. (2012), Volume 44, Issue 8, 2012, Pages 914-918;
2. Ioan Viorel Branzoi, Mihai Iordoc (corresponding author), Florina Branzoi, Gimi Rimbu (corresponding author) and Virgil Marinescu, Synthesis and characterization of high-voltage electrodeposited diamond-like carbon protective coating on TiAlV biomedical substrates, Surf. Interface Anal. (2012), Volume 44, Issue 8, 2012, Pages 1193-1197;
3. C. Banciu, A. Bara, L. Leonat, D. Patroi, Carbon Monoliths for CO<sub>2</sub> Adsorption, Optoelectronics And Advanced Materials - Rapid Communications, Vol. 5, No. 12, December 2011, Pages 1341 - 1345;
4. Violeta Tsakiris, Wilhelm Kappel, Georgeta Alecu, Diana Cirstea, Lucia Leonat, Gimi Rimbu, Dissimilar metallin junctions obtained by solid diffusion welding technique, SUDURA XXII - 1/2012, Pages 29-38;
5. V. Tsakiris, E. Enescu, M. Lungu, M. Lucaci, D. Savu, V. Marinescu, F. Albu, G. Alecu, D. Patroi, Al-Al<sub>2</sub>O<sub>3</sub> metallic composites consolidated by spark plasma sintering, published in the proceeding of the 5th International Conference - Innovative technologies for joining advanced materials, 16-17 iunie 2011, Timisoara, Romania;
6. A.Iorga, R.Saban, L.Palii, E.A.Patroi, Electrical Overhead Conductor for High Voltage Lines, Self-protective at Frost and Ice Deposition, published in the proceeding of the 2nd international Exergy, Lyfe Cycle Assessment and Sustainability Workshop and Symposium ELCAS 2011, 19-21 June 2011, Nysiros Island, Greece.

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