Aim of the Project

Clean Energy Research is a key task for the EU Agenda due to the importance of the energy independence of the European Community. The European and Anatolian plates are not rich of the fossil fuels such as coal, gas and oil. Even the carbon release from the fossil fuels prevents the European Community to use the traditional energy sources in high amounts and motivate us to improve alternative and renewable energy techniques. In this manner, the efficiency of the renewable energy devices such as solar, wind, hydro-electric and harvesters play an important role to obtain maximal power output from the nature. In addition, new trends and technological ideas on these devices should be introduced to the students in the undergraduate and graduate levels.

The priority of this project is to handle above task in order to improve the educational aspects of partnering European institutions and produce two innovative machines both for the educational aims and also for the laboratory researches. Initially, a curriculum study is performed among the partners to present the last trends in the academic research. In addition, this project provides joint research collaboration among the institutions and produces an intellectual media to produce academic research papers. The project also includes workshops and conference presentations for the exhibition of the results of laboratory researches.

Coordinating Institution

Gazi Üniversitesi, Turkey

GU is the biggest fourth university among the Turkish Higher Education Institutions. It has all branches of faculties, vocational schools, institutes, etc. The university has the third engineering education rank among the Turkish universities. It has 82,000 students and 3,500 academicians. Gazi University has not only educated the students and made the research activities for years, but also played very important role to educate the academicians for other universities in the country. Since the M.Sc. and Ph.D. opportunities and related research facilities are very powerful, many other universities send their students to get these degrees from Gazi University. Therefore, Gazi University has been declared as the "founder of universities" throughout the country.

Partner Institutions

Università degli Studi di Perugia, Italy

The University of Perugia was founded in 1308. In that year, Pope Clement V issued a bull entitled Super specula, which granted the Studium of the city the authority to engage in higher education. The bull made Perugia a leggere generaliter, giving its degree courses universal validity and recognition. Formal imperial recognition of the University was conveyed in 1355, when Emperor Charles I granted Perugia the permanent right to have a University and to award degrees to students from all nations. In the 14th century, the University offered degrees in two fields: Law and General Arts. Today, research, education and consulting activities in the various disciplines are organized in 16 Departments, with about 23,500 students, 1,100 professors and researchers and 1,000 staff members.

Universitatea din Piteşti, Romania

The university has approximately 500 staff and approximately 10,000 students. Its organization is composed of several faculties of different educational fields including Engineering and Science. It offers large educational possibilities to the young people from Romania and from other regions in the world. The priorities are directed towards the development of a high quality scientific research activity, the training of young people as future high specialists, able to find a proper job in the Romanian and European labour market.

Universidad del Pais Vasco, Spain

The UPV/EHU is a teaching and research institution officially founded in 1985. It offers many degrees, one third of these degrees having a quality mention from the Spanish Ministry of Education. According to the ranking of Shanghai, it is one of the leading universities in Europe for its teaching quality, commitment to continuous training, research. It holds agreements with over 400 international universities and has been recently recognised as “International Excellence Campus” by the Spanish Authorities. It has more than 40.000 students, more than 4.500 academicians and 1.900 of administrative staff. It offers 67 Bachelor degrees, 95 Master degrees and 71 PhD programs. Since the first Research Framework Programmes, the UPV/EHU has been very active and has participated in many collaborative projects and Marie Curie actions.

Klaipedos Universitetas, Lithuania

KU is situated in the territory with the population of 650,000 with prospective industrial and business potential as well as a rapidly developing marine metropolis and region that is famous for exclusive cultural heritage, tourism, recreation and resort facilities. It was established in 1991. Its mission is to develop the University as a modern marine Centre of research, arts, and studies in the Baltic Sea Region educating the highly qualified specialists. Present strategic priorities of the University are: Development of rational and sustainable academic structure, formation the Marine Valley - integrated research, study, and business center with its infrastructure comprised of research, education, and social facilities provided by highly qualified human resources.

Academic and research activities are organized at seven faculties. Today around 6,000 students are attending lectures at Bachelor, Master, PhD, vocational training, and other study programs. University expands its internationalization by taking part in the main academic networks across the Baltic Sea Region and Europe; it has tied agreement-based cooperation with more than 40 foreign universities. More than 190 partner universities in Europe are Erasmus Mobility partners of KU.

Who can join the programme?

- Academicians of 5 partner institutions
- Undergraduate students being in 5th term or above in Electrical Engineering and Physics Programmes.
- M.Sc. Students in relevant fields
- Ph. D. Students in relevant fields

Funded by the Erasmus+ Programme of the European Union

TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY

TÜRKİYE CUMHURİYETİ AVRUPA BİRLİĞİ BAKANLIĞI
REPUBLIC OF TURKEY MINISTRY FOR EU AFFAIRS

Coordinator:
Gazi Üniversitesi, Turkey

Partners:
Università degli Studi di Perugia, Italy
Universitatea din Piteşti, Romania
Universidad del Pais Vasco, Spain
Klaipedos Universitetas, Lithuania

Discover renewable energy systems …

EU Project No: 2015-1-TR01-KA203-021342

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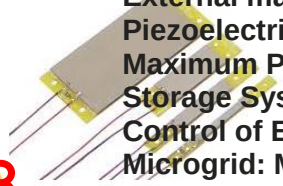
Dear Students and Colleagues,

We introduce you the joint teaching/learning programmes with cutting-edge knowledge on renewable energy systems (RES). The programme will take place within the frame of ERASMUS+.

The programme offers 4.5 ECTS credits and includes the technical courses and laboratory practices in the partner institutions. The academic staff of partner institutions welcomes you for the teaching/learning activities in five European universities in five different countries.

Curriculum

Structure of the Photovoltaic Modules
Maximum Power Point Concept and Tracking Methods
Power Electronics Converters for PV Systems
Solar Tracking Systems
Basics of the Wind Energy Conversion Systems (WECS)
Types of Generators for WECS
Power Electronics Converters for WECS
Maximum Power Point Tracking (MPPT) Methods
Basics of energy harvesting systems
Piezoelectric (PE) Materials, Modeling and Applications
External magnetic excitation of PE systems
Piezoelectric Wind-energy harvester
Maximum Power Point Tracking (MPPT) Methods
Storage Systems: Batteries, flywheels, ultracapacitors
Control of Energy Storage Systems
Microgrid: Modeling, Control and Stability
Composites for Renewable Energy Systems (RES)
Hybrid RES
Piezoelectric energy harvesting for ICT
Efficient energy usage in ecological land and sea transports



INNOVATIVE EUROPEAN STUDIES on RENEWABLE ENERGY SYSTEMS

IESRES 2015-2018

Universidad del Pais Vasco
Euskal Herriko Unibertsitatea
The University of the Basque Country

KLAIPĖDOS UNIVERSITETAS

Study Renewable Energies, Find Sustainable Jobs!