

Memorandum of Understanding

between

Texas Engineering Experiment Station
on behalf of the
**International Institute for Multifunctional Materials
for Energy Conversion (IIMEC)**
The Texas A&M University System
College Station, Texas
United States of America

And

Hacettepe University
Ankara, Turkey

A) The "International Institute for Multifunctional Materials for Energy Conversion (IIMEC)" is an NSF-funded International Material Institute, recently established at the Texas Engineering Experiment Station, a member of The Texas A&M University System, in partnership with Georgia Institute of Technology, the University of Houston and international research collaborators at universities in North Africa, the Middle East, and Mediterranean countries. The vision of the "IIMEC" is to create an active network of materials researchers, facilities and cyber infrastructure in the Middle East-Mediterranean region, focusing on transformative research on multifunctional materials exhibiting strong coupling among different fields, resulting in various forms of efficient energy conversion. By bringing high quality research and education programs on materials to the selected international regions, "IIMEC" will improve the utilization of natural resources and bring balance between renewable and non-renewable energy sources. Such efforts will ultimately contribute to the peace, stability, and sustainability of resources in the region.

The mission of "IIMEC" is to establish a communications, knowledge-base and computational/laboratory grid that will: 1) advance research in multifunctional materials for efficient energy conversion; 2) provide students and faculty from the US and participating countries with global research and international leadership experience; and 3) contribute to the transformation and advancement of materials education in all participating countries.

The research of the "IIMEC" has an overarching theme of computational materials science for multifunctional materials, which serves three specific research theme areas: 1) coupling of thermal/magnetic and mechanical properties; 2) coupling of electrical and mechanical properties; and 3) thermal and electrical, and optical and electrical coupling. The intellectual merit of this institute originates from the fact that "IIMEC" will bring together leading researchers in computational and multifunctional materials from the region and provide a new level of infrastructure to enable collaboration among these researchers with the purpose of modeling and predicting cross-coupling of multiple functionalities, eventually leading to design of new multifunctional materials with high energy conversion efficiencies.

The senior participants of the "IIMEC" are: Dimitris Lagoudas, Tahir Cagin, Ibrahim Karman, Raymundo Arroyave, Amine Benzerga and Guy Almes from Texas A&M University; Zoubeida Ounaies from Penn State University; Pradeep Sharma from the University of Houston and Mostafa El-

Sayed from Georgia Tech University. Dr. Ibrahim Karaman will be the point of contact from Texas A&M University for this MOU.

B) Hacettepe University (HU) is one of the leading universities in Turkey, which heavily contributes to social development and universal values in the fields of science, technology and art. The university was established in 1957 and currently carries on its activities with 13 colleges, 13 institutes, 2 schools, 1 conservatory, 6 vocational schools, and 41 research and application centers. HU houses the largest medical school and hospital in the middle east. HU is internationally recognized for programs in Nuclear Engineering, Applied Physics, Biomedical and Composite Materials.

C) Whereas the above named institutions recognize that cooperating would be of mutual benefit and would serve as an indication of continued interest in joint activities, it is agreed the institutions will explore:

1. Joint submission of collaboration proposals to United States, European and other agencies and industry worldwide.
2. Exchange of faculty for extended visits to work on joint research projects.
3. Joint ventures with the possible creation of spin-off companies.
4. Joint publications, workshops, presentations at conferences and other activities to promote technical exchanges and dissemination of research results.

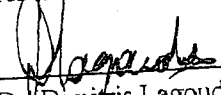
Before proceeding with any such activities, the parties shall discuss whether it is advisable to enter into a specific agreement that includes additional terms and conditions regarding costs, intellectual property, liability, and other matters as the circumstances may require.

Neither party shall have any financial obligation to the other based on this Agreement.

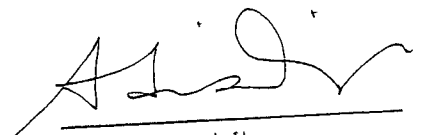
This Agreement may be terminated by either party upon sixty (60) day written notice to the other.

This Memorandum of Understanding will become effective on the final date of signature and will have a duration of three (3) years. The parties have executed this Memorandum of Understanding on the day and year last specified below:

Recommended Approval:



Dr. Dimitris Lagoudas
Director of International Institute for
Multifunctional Materials for Energy Conversion
(IIMEC)
Head of Department of Aerospace Engineering

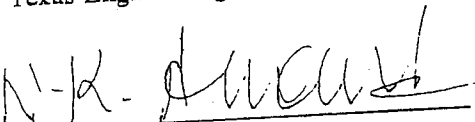


Dr. Adil Denizli
Chair, Chemistry Department
Director of Institute of Science


Authorized Representative:

Texas Engineering Experiment Station

Hacettepe University



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N. K. Anand, Ph.D., P.E.
Acting Vice Chancellor and Interim Dean
of Engineering
Acting Director, Texas Engineering
Experiment Station



Dr. Selcuk Gecim
Vice President

Date: 12.7.11

Date: 12.07.2011