

"SUMMER COURSE ON EXERGY AND ITS APPLICATIONS" (16-17 June 2008)

Description: Recently, exergy has become a new distinct discipline for system design, analysis, optimization and performance evaluation, and its use has expanded drastically. In this regard, exergy analysis appears to be a significant tool in: (a) addressing the impact of energy resource utilization on the environment, (b) furthering the goal of more efficient energy resource utilization, (c) determining locations, types and true magnitudes of wastes and losses, (d) revealing whether or not and how much it is possible to design more efficient energy systems by reducing the inefficiencies, (e) providing a sustainable development as a result of sustainably supply of energy resources, and (f) distinguishing the high-quality and low-quality energy resources. This is a timely course to serve academia and industry to provide further information and encourage people working in the area of energy to conduct exergy analysis for system design, analysis, optimization and performance evaluation in large number of applications ranging from power plants to fuel cells and from renewables to geothermal district heating systems.

PROGRAM

| Day 1: 16 June 2008 (Monday) | | |
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| Hours | Lecturer | Title |
| 08.30-09.00 | Registration | |
| 09.00-09.30 | Dr. M. Tırıs | Opening Talk |
| 09.30-10.15 | Dr. I. Dincer | Exergy vs Energy |
| 10.15-10.45 | Coffee break | |
| 10.45-11.30 | Dr. Y.A. Çengel | Thermodynamic Concepts-I |
| 11.45-12.30 | Dr. Y.A. Çengel | Thermodynamic Concepts-II |
| 12.30-14.00 | Lunch and Visit to Lab Facilities | |
| 14.00-14.45 | Dr. I. Dincer | Exergy: A Tool to Combat Global Warming |
| 15.00-15.45 | Dr. I.B. Kılış | Exergy Guided Climate Control Systems in Green Buildings |
| 15.45-16.15 | Coffee break | |
| 16.15-16.45 | Dr. A. Hepbaşlı | Exergy Management: A Way to Sustainable Development |
| 16.45-17.30 | Dr. I. B. Kılış | Low-Exergy HVAC Systems and Applications |

| Day 2: 17 June 2008 (Tuesday) | | |
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| Hours | Lecturer | Title |
| 09.00-09.45 | Dr. I. Dincer | Exergy Analyses of Hydrogen and Fuel Cell Systems |
| 09.45-10.30 | Dr. I. B. Kılış | Exergy Benefits of Combining Ground Source Heat Pumps with CHP |
| 10.30-11.00 | Coffee break | |
| 11.00-11.45 | Dr. A. Hepbaşlı | Exergetic Comparison of Various Types of Textile Drying Systems |
| 11.45-12.30 | Dr. M. Kanoğlu | Exergy Analysis of Cryogenic Systems |
| 12.30-13.30 | Lunch | |
| 13.30-14.15 | Dr. M. Kanoğlu | Exergy Analysis of Geothermal Power Plants |
| 14.15-15.00 | Dr. A. Midilli | Exergetic Role of PEMFCs for Energy Sustainability |
| 15.00-15.30 | Coffee break | |
| 15.30-16.15 | Dr. A. Midilli | Exergetic Performance of Hydrogen Use in Reducing Oil Consumption |
| 16.15-17.00 | Dr. T.H. Karakoç | Exergy Analysis of a Turbofan Aircraft Engine: GE-CF6 |
| 17:00-17.45 | Dr. T.H. Karakoç | Exergoeconomic Analysis of an Aircraft Turbofan Engine |
| 17.45-18.15 | PANEL DISCUSSION on Exergy and Education Closure | |

LECTURERS

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| Prof. Dr. İbrahim Dincer | University of Ontario Institute of Technology (UOIT), Canada |
| Prof. Dr. Yunus A. Çengel | University of Nevada, Reno, USA. |
| Prof. Dr. I. Birol Kılış | ASHRAE, Distinguished Lecturer, USA |
| Prof. Dr. Arif Hepbaşlı | Ege University (Mech. Eng. Dept.), Turkey |
| Prof. Dr. T. Hikmet Karakoç | Anadolu University (Mech. Eng. Dept.), Turkey |
| Assoc. Prof. Dr. Adnan Midilli | Nigde University (Mech Eng. Dept.), Turkey |
| Assoc. Prof. Dr. Mehmet Kanoğlu | Gaziantep University (Mech Eng. Dept.), Turkey |

Location: TÜBİTAK - Marmara Research Center (MAM), P.K. 21, 41470 Gebze, Kocaeli, Turkey (<http://www.mam.gov.tr>)

Registration fee: 65 YTL for students and public persons (including course notes, lunches and refreshments) and 125 YTL for other participants.

Notes: The deadline for registration is 5 June 2008. Although the course language is Turkish, course notes and presentation documents will be available in English. Please fill in and submit the attached application form for registration.

Organizing Committee: Assoc. Prof. Dr. Mustafa Tırıs, Assoc. Prof. Dr. Fehmi Akgün, E. Alptekin Yağmur, Prof. Dr. İbrahim Dincer and Prof. Dr. Arif Hepbaşlı

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