



PROGRAM
Summer School on “Exergy and Its Applications for Better Environment and Sustainability”
April 30-May 4, 2012
UA1350, Science Building, UOIT, Oshawa



	Monday, April 30 th	Tuesday, May 1 st	Wednesday, May 2 nd	Thursday, May 3 th	Friday, May 4 th
8:00-9:00	Registration and Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
	Chair: G. Naterer	Chair: M. Rosen	Chair: Y.A. Cengel	Chair: I. Dincer	Chair: M. Aydin
9:00-9:45	Opening Speeches	Exergy Analysis of Closed and Open Systems, I. Dincer	C4: Exergy Analysis of Fuel Cells, C.O. Colpan	Exergy Analysis of Complex Processes, G. Tsatsaronis	C12: Exergy Analysis of Hydrogen Production Systems, C. Zamfirescu
9:45-10:30	Why Exergy?, I. Dincer	Exergy Balance and Exergetic Efficiency, G. Tsatsaronis	Exergy Analysis of Distillation Processes, Y. Demirel	Advanced Exergetic Analysis, G. Tsatsaronis	Exergy Analysis of District Energy Systems, M.A. Rosen
10:30-11:00	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
	Chair: I. Dincer	Chair: T. Kaya	Chair: O. Arnas	Chair: M. Rosen	Chair: G. Tsatsaronis
11:00-11:45	Introduction to Thermodynamics Laws and Their Violation, Y.A. Cengel	Efficiency Improvement as An Energy Resource: Energy and Exergy Dimensions, Y.A. Cengel	Introduction to Exergoeconomics and Exergoenvironmental Analyses, G. Tsatsaronis	Irreversibilities in Microchannel Flows, G.F. Naterer	Exergy Analysis of Thermal Energy Storage Systems, M.A. Rosen
11:45-12:30	Introduction to the Second Law and Exergy, Y.A. Cengel	Experimental Measurement of Entropy Production and Exergy, G.F. Naterer	Entropy Generation in Engineered and Natural Systems, E. Sciuibba	Entropy Based Surface Microprofiling to Reduce Flow Exergy Losses, G.F. Naterer	Exergy Analysis of Aircraft Engines, M.A. Rosen
12:30-14:00	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
	Chair: M. Aydin	Chair: G. Tsatsaronis	Chair: O. Arnas	Chair: G. Naterer	Chair: Y.A. Cengel
14:00-14:45	Physical Interpretation of the Mathematics of Thermodynamics, O. Arnas	Green Buildings: An Exergy View, E. Sciuibba	C5: An exergy-based case study of a CHP system, C.O. Colpan C6: Exergetic-Based Multi-objective Optimization, P. Ahmadi	Thermoeconomics and Its Applications to Various Systems, Y. Demirel	Ethology and exergy, E. Sciuibba
14:45-15:30	Extended Exergy as an Environmental Indicator, E. Sciuibba	Exergy Analysis of Unit Operations, Y. Demirel	C7: Exergy Analysis of Vehicle Cooling Systems, N. Javani C8: Exergy Analysis of Thermal Management Systems for Electric Vehicles, H. Hamut	Exergy Analysis of Multi-generation Systems, I. Dincer	Equipartition Principle and Exergy, Y. Demirel
15:30-16:15	Strengths and Limitations of Exergy Concept, G. Tsatsaronis	Chemical Exergy, Y. Demirel	Campus Tour: <ul style="list-style-type: none"> • Automotive Center of Excellence (ACE), Wind Tunnel • Hydrogen Lab (CERL) 	Implications of 2 nd Law of Thermodynamics in Non-Technical Areas, Y.A. Cengel	C13: Exergetic Aspects of Solar Radiation and Performance Assessment, C. Zamfirescu
16:15-16:45	Coffee Break	Coffee Break	Free time	Coffee Break	Coffee Break
	Chair: Y. Demirel	Chair: E. Sciuibba		Chair: Y. Demirel	Moderator: E. Sciuibba
16:45-17:45	- Historical Anecdotes about Thermodynamics and Exergy, O. Arnas - Why Thermodynamic Courses need Labs?, O. Arnas	C1: Exergetic Life Cycle Assessment, A. Ozbilen C2: Multi-flash Geothermal Power Plants and Their Exergetic Optimization, R. Roberts C3: Exergy-based Design of Heat Exchangers, S. Aghahosseini		C9: Exergy Analysis of Integrated Renewable Energy Systems for Multi-outputs, T. Ratlamwala C10: Exergy Analysis of Light-driven Hydrogen Production Processes, E. Baniasadi C11: Energy and exergy analyses of a combined molten carbonate fuel cell-Gas turbine system, El-Emam	<u>Panel Discussion Session</u> on “Exergy and New Horizons”
17:45-18:00	Summary	Summary		Summary	Closing Remarks
18:00	Reception and Dinner		Banquet on Cruise		

