



Topic: **Renewable Energy From Air: The Maisotsenko Cycle**

Speaker: **Dr., Professor Valeriy S. Maisotsenko**
Chief Scientist and Founder
Idalex Inc. and Coolerado Inc., USA

Date: **18 February 2014, Tuesday**

Time: **2.00pm to 4.00pm**

Venue: **E3-06-09** (map of NUS can be found at <http://map.nus.edu.sg/>)

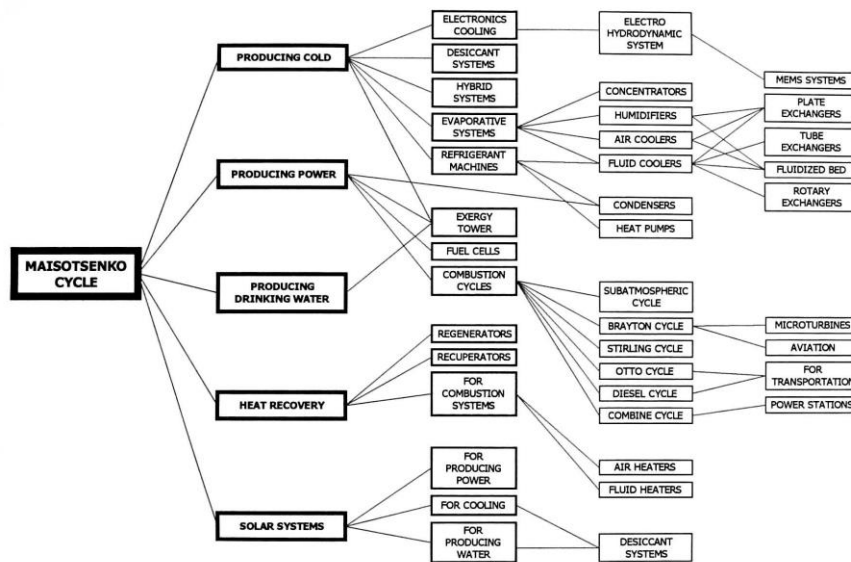
Host: **Asst. Prof. Ernest Chua**

Abstract

The Maisotsenko Cycle (M-Cycle) is the new but proven thermodynamic conception, which captures energy from air, and can be realized for many applications (see figure below)).

The first time the M-Cycle technology was proven and realized by Coolerado Corporation (USA), which produces several air conditioners (commercial, residential, solar and hybrid). As proven by National Renewable Energy Lab (NREL) Coolerado's Air Conditioners are 10 times and Coolerado's Hybrid Air Conditioners are up to 80% more efficient than traditional systems.

The M-Cycle combines the thermodynamic processes of heat exchange and evaporative cooling in a unique indirect evaporative cooler resulting in product temperatures that approach the dew point temperature (not the wet bulb temperature) of the working gas. This cycle utilizes the enthalpy difference of a gas, such as air, at its dew point temperature and the same gas saturated at a higher temperature. This enthalpy difference or potential energy is used to reject the heat from the product. Consider the cooling gas to be air and the liquid to be water; the M-Cycle allows the product fluid to be cooled in temperature ideally to the dew point temperature of the incoming air. This is due to the precooling of the air before passing it into the heat rejection stream where water is evaporated. For purposes of this paper, the product fluid is air. At no time is water evaporated into the product airstream. When exhausted, the heat rejection airstream or exhaust air is saturated and has a temperature less than the incoming air, but greater than the wet bulb temperature. This cycle is realized in a single apparatus with a much higher heat flux and lower pressure drop than has been realizable in the past due to its efficient design.



MAISOTSENKO CYCLE APPLICATIONS

Maisotsenko Cycle uses atmospheric air as a renewable source of energy
 Maisotsenko Cycle and its different applications are protected by more than
 200 patents all over the world

About the Speaker

Dr. Maisotsenko has devoted his entire professional career to developing energy efficient air conditioning and heat transfer technologies. He served as a Senior Researcher at the Odessa Civil Engineering Institute in the Ukraine. He also was a Professor the Chair of Heat Supply. In this capacity he delivered lectures on heating engineering, refrigeration engineering, heat transfer thermodynamics, air-conditioning. He became the Head of the scientific research laboratory and conducted research on the heat exchange processes, investigated and worked out new systems, apparatuses for air-conditioning and refrigeration engineering.

He was also the Emeritus Professor of the Chair of Heat Supply. In this role he continued to deliver lectures at Odessa Institute of Civil Engineering, where he led the Scientific research co-operative to develop new pure ecological technologies.

Dr. Maisotsenko is the inventor and creator of the "Maisotsenko Cycle (M-Cycle)", the patented processes, which are the bases for the producing power and cooling process for improvement any power, cooling and air conditioning systems. Dr. Maisotsenko has published more than 200 scientific works including more than 150 patents in air conditioning, desalination, refrigeration and power production. He is the author of most of his own patents. This practical experience has provided Dr. Maisotsenko a tremendous experience defending and registering patents not just in the U.S. but worldwide. Presently he holds patents in many countries including the former USSR, the United States, Japan, the European Community, Asia and Australia.

Admission is free. All are welcome to attend.