

TAKASAGO THERMAL/ENVIRONMENTAL SYSTEMS (TTES)

- Prof. Dr. Yutaka Asako, Professor (Head of iKohza)
- Assoc. Prof. Dr. Nor Azwadi Bin Che Sidik, Associate Professor
- Dr. Siti Rahmah Binti Aid, Senior Lecturer
- Dr. Tan Lit Ken, Senior Lecturer

NUMBER OF STUDENTS

- Ph.D: 8 students
- Master : 3 students
- Bachelor : 8 students

RESEARCH KEYWORDS

Low carbon, energy saving technologies, heat transfer

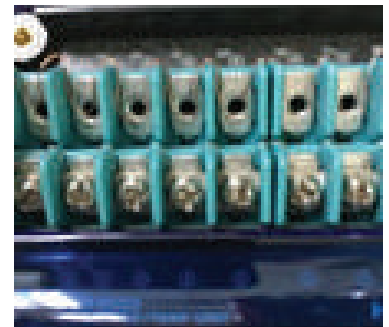
OUTLINE OF IKOHZA

Outline of ikohza: TTES iKohza is specialised in Thermal and Fluid Sciences especially Renewable Energy and Energy Saving Technologies. This laboratory is established based on generous financial support from Takasago Thermal Engineering Co. Ltd.; which is a major Japanese Air Conditioning Construction Company.

CURRENT RESEARCH

UNCERTAINTY OF MEASURED TEMPERATURE

Thermocouple is a widely used temperature sensor. Since thermoelectromotive force of the thermocouple is proportional to the junction temperatures difference, the Reference Junction Compensation (RJC) is automatically conducted in a data logger. Uncertainty of the measured temperature is required for evaluation of the measure data. To obtain the uncertainty of the measured temperature, we have to know the RJC error. However, it takes times and effort. An easier and faster way to obtain the RJC error is strongly required. A new easier and faster way to obtain the RJC error is developing in this research.



Thermocouple wire connection

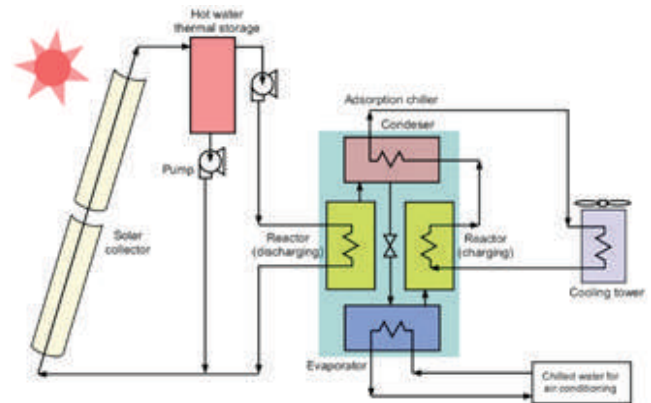


HIGHLY DOPED/ACTIVATED GE SUBSTRATE/ SYNTHESIS OF NANOPARTICLE/NANOFUID

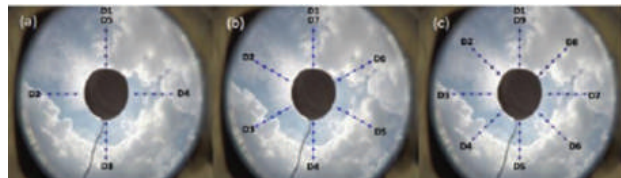
This research explores the potential to utilize germanium (Ge) substrate, and nanofluid-based optical filter in hybrid PV/T system, to cater for the urgent need for highly efficient, small, solar harvesting systems.

MERIT OF THE TECHNOLOGY

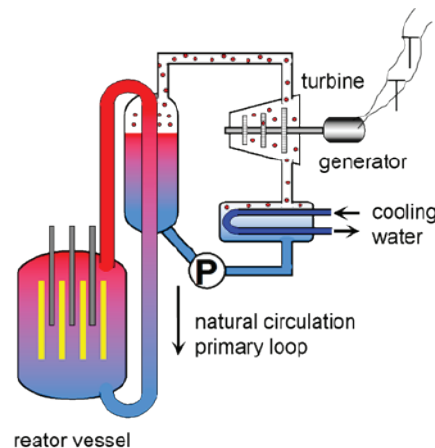
- Solar Adsorption Refrigeration Cycle



- Prediction of working fluid temperature at Solar corrector tube exit
- Prediction of Global Solar Radiation using Artificial Neural Networks



- Instability Analysis of Natural Circulation Cooling of Super Critical Water Reactor



POSSIBLE INDUSTRY APPLICATION

We publish many fundamental research papers on wide range of thermal problems in professional journals. Therefore, we could support industrial researches from the theoretical side. Also we are experts in CFD and we have own codes which handle laminar & turbulent, incompressible & compressible, subsonic and supersonic flows.

- Consultation on thermal problems
- Numerical Analysis (FLUENT, ...)
- Morphological analysis of material

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