



Thermal energy

This kit provides a basic understanding of solar thermal energy conversion. The most important component is the solar collector, which can be powered both by sunlight as well as by the infrared light source.

MAIN COMPONENTS

- a base,
- a potentiometer module,
- a solar collector,
- a reflector collector,
- an absorber tube,
- a lens module,
- an absorber module for lens,
- an absorber B/W,
- a pump module,
- a Peltier module,
- a water heat exchanger,
- a paraffin heat exchanger,
- a hose-set,
- a power supply,
- a motor module,
- a lamp,
- 2 multimeters,
- a thermometer,
- a temperature sensor,
- a propeller,
- a Borosilicate beaker glass,
- test leads
- CD with manuals



EXPERIMENTS

- the basics of thermal energy,
- absorption and reflecting ability in different materials,
- light concentration with Fresnel-lens,
- heat flow and layering,
- heat conduction,
- thermal insulation,
- the solar collector with pumping circulation and with thermo siphon circulation,
- variations of flow rate,
- collector circulation with heat exchanger and with paraffin heat storage,
- the parabolic collector with pump circulation,
- the Peltier element as thermal-electric generator,
- determination of the electric performance.

