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# THERMAL SCIENCE

## International Scientific Journal

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### DEVELOPMENT AND INVESTIGATION OF SOLAR COLLECTORS FOR CONVERSION OF SOLAR RADIATION INTO HEAT AND/OR ELECTRICITY

#### ABSTRACT

This article describes work on two projects NPEE 709300036 and NPEE 271003 titled "The model of solar collector for middle temperature conversion of solar radiation in heat" and "Development and investigation on hybrid solar collector for heat and electricity generation", respectively. This first project deals with solar collector that transfers solar radiation in heat in area of middle temperature conversion (at temperatures above 100 °C). During entire year It can realize significant saving of electric energy used for preparation of warm water and in central and district heating. During work on the second project, two hybrid solar collectors, their installation, mathematical model, software, and experimental set-up were designed and realized. The first collector had the photovoltaic panel located above the absorber and the second collector had the panel located on the absorber. For both collectors, the results show that efficiency of fossil fuel replacement is 85%.

#### KEYWORDS

[energy source](#), [solar energy](#), [concentrator](#), [hybrid solar collector](#), [heat](#), [electricity](#), [efficiency](#)

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