

(54) Title of the invention : EXPERIMENTAL INVESTIGATION OF HYBRID GAS TURBINE AND HYBRID STEAM TURBINE TO INVESTIGATE THE POSSIBILITY OF UTILIZING SOLAR ENERGY IN A COMBINED CYCLE

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## (57) Abstract :

[025] Due to the difficulties encountered by the usual approach of the hybrid gas turbine, it is necessary to propose and investigate gas turbine devices that utilize solar energy in a different way. It is interesting to consider whether devices that utilize solar heat with existing technologies can be used so that no additional cost is required to develop the components. This is a necessary condition for the further development and commercial establishment of solar thermal devices. In this context, this work proposes and considers two alternatives: a solar turbine gas turbine and a solar turbine gas turbine. Both devices aim to use solar energy in the gas turbine through the use of existing technologies. In addition, in order to utilize the discarded solar heat through the refocus of the mirrors, a hybrid device is considered where the discarded heat is used to generate steam and inject it into the combustion chamber of the hybrid gas turbine.

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