

## Second Laureate Research & Development



- **Project Title:** IGV+: MAPNA Group Package For MGT70 Gas Turbine Power Augmentation (V94.2 Series) Through IGV Modification
- **Executive Organization:** MAPNA Turbine Engineering & Manufacturing Co. (TUGA)
- **Representative:** Eshagh abbasisoureshjani
- **Collaborators:** Ali hamidavi, Mohammadreza pakatchian, hossein saeidi, habib habibiyan & ali rafiei



### Abstract:

MGT70- machines make up a large portion of the gas turbine fleet being operated in Iran and in the world. They are so attractive machines to invest in, when it comes to upgrading and maximizing power output and efficiency. It is thus considered as one of the major research and development endeavors at MAPNA Turbine, to put forth various upgrade and improvement packages for MGT70- users.

Upgrade package, IGV + as one of the newest innovations Mapna groups, improve the power output of the gas turbine in the shortest possible time and with minimal changes.

IGV+ package is based upon optimized adjustment of inlet guide vane angles in various versions of the machine. The immediate outcome of this upgrade is an increase in mass flow rate and subsequently a proportional increase in the power output.

The governing logic on this upgrade package can be altered taking into account what is required by the customer to enjoy either of the merits outlined above. Opening rate for IGVs is controlled in a way that relative increase in mass flow and the subsequent power output is materialized all over the performance interval. It enables one to decrease the turbine inlet temperature at peak loads and thereby considerably increase the life expectancy for hot section components.

