

# Heat Exchangers for Gas Turbine Cycles and Thermal Management (롤스로이스 기술개발 동향)

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## ABSTRACT

Rolls-Royce is a global company producing advanced power systems for use on land, at sea and in the air. In order to develop competitive products and services, Rolls-Royce invests in technology, infrastructure and capability with much of the research carried out in a global network of University Technology Centres, such as the UTC in Thermal management at Pusan National University.

Heat exchangers and thermal management play a critical role in today's gas turbine engines, maintaining the fuel and oil temperatures within the correct operational range. Future products are likely to place an increased duty on the thermal management system and thus require advances in heat exchanger design, installation and manufacturing.

Heat exchangers further have the potential to play a vital role in Advanced Cycle Gas Turbine products. The Intercooled and recuperated WR21 marine gas turbine engine recently entered service with the Royal Navy and is delivering very attractive fuel burn in service. The development of an advanced cycle aero-engine is a significantly greater challenge, requiring better understanding of compact and light weight heat exchanger surfaces, novel installations and ducting systems and may required novel manufacturing techniques to achieve the volume, weight and cost necessary to realise a viable advanced cycle gas turbine aero-engine.