

Abstract Submitted  
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**Characterization of Synthetic GTL Jet Fuel for use in Gas Turbine Engines**<sup>1</sup> REZA SADR, KUMARAN KANNAIYAN, Texas A&M at Qatar, ROLLS ROYCE, UK TEAM, DLR, GERMANY TEAM, SHELL, QATAR TEAM — Stringent emission regulations have instigated the search for alternative-clean source of energy. Recently, Gas-to-Liquid (GTL) fuel has grabbed the global attention by its clean combustion characteristics owing to the absence of aromatics and Sulphur. However, this will introduce potential risks and benefits. Last fall Qatar airways has proven the feasibility of using GTL as a potential alternative clean fuel by a 3200 mile flight using a fuel blend of 50% JetA + 50% GTL. Researchers from Texas A & M University at Qatar (TAMUQ) in collaboration with their counterparts in Rolls-Royce (RR), UK, and German Aerospace Laboratory (DLR) are in a joint effort to establish an in-depth characterization of the combustion performance of GTL fuel in gas turbine engines. In TAMUQ, the research focus is to investigate the spray characteristics of GTL fuels. The results will be compared with that of standard fuel and correlate with combustion results to gain insights on GTL performance. This will help designers to optimize the nozzle geometry to improve the combustor performance. The objective of this talk is to introduce this ongoing effort and to discuss the experimental facility and preliminary results.

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