Multi-hole Injector Optimization for Spark-Ignited Direct-Injection Gasoline Engines

Ronald O. Grover, Jr., Tang-Wei Kuo, Wael Elwasif, Sreekanth Pannala, K. Dean Edwards, and Robert Wagner

Direct injection (DI) engine technology is an enabler to improve engine efficiency. Managing the in-cylinder fuel-air mixing process is critically important to realize this potential. A 6-hole multi-hole injector is being experimentally tested and simulated over a range of fuel temperatures and ambient pressures. The outcome is to deliver an analytical toolset that reduces the time and cost of hardware iterations.