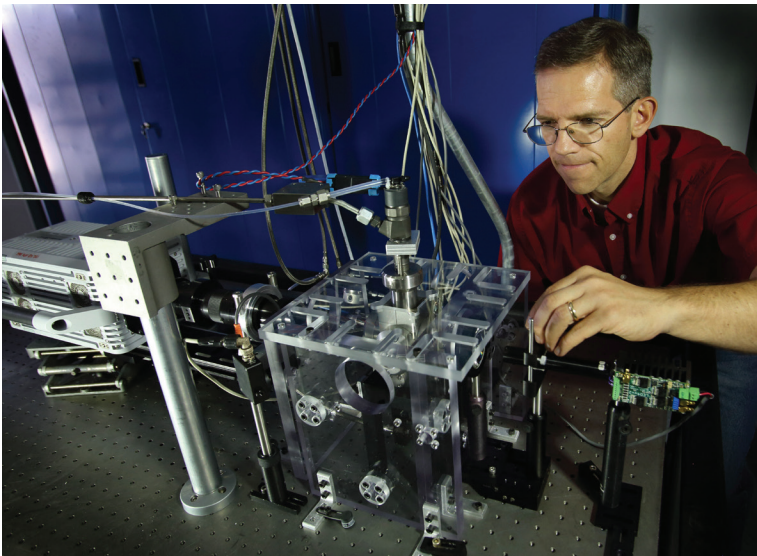


ANNOUNCING THE CONTINUATION OF THE SPRAY COMBUSTION CONSORTIUM

We invite you to join the next phase – transferring basic research into more predictive spray combustion CFD models thereby reducing development time and costs of future high-efficiency engines.



CONTACT

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BACKGROUND

The Spray Combustion Consortium (SCC) is an industry-funded activity aiming to improve engine combustion system design and optimization tools. Formed in late 2015, this industry steering committee guides SCC spray research at Sandia National Laboratories, Argonne National Laboratory, and the University of Massachusetts. The first phase of the SCC focused on transient internal nozzle flows, cavitation, and flash-boiling—and how these processes change fuel delivery. Experiments and modeling in transparent and metal diesel and gasoline nozzles realized over 15 discoveries unique to the research community. New models capturing these discoveries have been or are currently being implemented into CONVERGE software. Care is taken to ensure that the models are cost-effective and easily transferrable to current engine design practices. Industry participants in the SCC have exclusive use of these new models for a period of time. Participants also enjoy first access to new understanding and best practices for CFD, in addition to establishing future directions for SCC research. The consortium approach provides value well beyond the cost to each individual participant. As of March 2018, the SCC has 7 industry partners: Cummins, Convergent Science, Ford, Hino, Isuzu, Renault, and Toyota.

PROJECT EXTENSION

The initial three-year phase of the SCC will finish at the end of 2018, and there is strong motivation to continue and to expand the project into new areas. While the past focus was on cold, non-reacting injection, areas designated for future research include: (1) internal flow and spray development with complexities of multi-hole fuel injectors, (2) quantitative characterization of plume-to-plume interactions and mixing in hot, vaporizing environments, and (3) quantitative combustion diagnostics to assess ignition and soot formation. Detailed analysis of both experimental and simulations results will link progress in these areas to improved models implemented into commercial CFD tools.

HOW TO JOIN THE SCC

The commencement of phase 2 is a new opportunity to join as a full partner in the SCC. For new partners, an initial fee of \$50K is required to gain access to the models developed during the first phase of the project. The annual fee for continuing members will be \$125-\$150K, depending upon the total number of members. New partners agree to an existing memorandum of understanding (MOU) and new work contracts.

Please tell us of your interest by July 2018. We would be happy to share publicly available SCC research and papers, and answer other questions about the function of the SCC.

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