



Welcome to the 2020 ASME Internal Combustion Engine Fall Technical Conference, which is a virtual event now, owing to the COVID-19 pandemic. The Internal Combustion Engine (ICE) executive committee, together with the ASME staff have worked hard to make this virtual event very exciting for you. The three day event begins on the morning of Wednesday, November 4<sup>th</sup> with a welcome and keynote address, and ends with an ICE division associates meeting on the afternoon of Friday, November 6<sup>th</sup>. Technical presentations, keynote and invited talks are planned throughout Wednesday, November 4<sup>th</sup> and Thursday, November 5<sup>th</sup>. The annual awards ceremony will also be held virtually on November 4<sup>th</sup> evening. A special workshop will be hosted by AVL entitled “Real time engine and after-treatment modeling” on the morning of Friday, November 6<sup>th</sup>. Due to the virtual nature of the conference, actual networking may be a little less fluid than usual, especially for early-career attendees who may be attending for the first time. To ensure that this essential quality of this conference is preserved, we are offering an organized “networking session” on November 5<sup>th</sup> for early career researchers to chat with the ASME ICE executive committee and other key leaders in industry, academia and national labs. We hope that young researchers will take advantage of this exciting opportunity to grow their networks and explore the wide range of career options in this field.

This conference is intended to provide a collegial atmosphere to discuss and exchange information related to the science and engineering of internal combustion engines. It provides a forum for experts from members of industry, academia, and governments from all over the world to share and discuss the latest technological developments. The conference program is distributed into seven technical tracks with multiple concurrent sessions, spread over two days. The sessions cover a wide range of topics across 7 technical sessions: (1) Large Bore Engines; (2) Fuels; (3) Advanced Combustion; (4) Powertrain and Emissions Systems; (5) Fuel Injection and Sprays; (6) Numerical Simulation; and (7) Engine Design and Mechanical Development. In addition to high quality technical presentations, the conference features three keynote talks on Wednesday and Thursday, presentations by winners of the undergraduate student competition during lunchtime on Wednesday.

The plenary keynote on Wednesday, November 4<sup>th</sup> morning will be delivered by Dr. John Farrell, Laboratory Program Manager for Vehicle Technologies at National Renewable Energy Laboratory. The keynote address on Wednesday afternoon will be delivered by Dr. Prith Banerjee, Chief Technology Officer of ANSYS. Our Thursday morning speaker will be Prof. Bryan Willson who is the Executive Director of the Energy Institute at Colorado State University.

This is also the eight year of the undergraduate student competition, which is designed to engage and promote the next generation of internal combustion engine engineers and researchers. This competition has attracted steady participation over the years. The two winners this year are Chaimaa Maghfour from Marquette University and Austin Pearson from The University of Alabama. Their winning presentations will be on Thursday afternoon.

We are especially grateful for the participation of the many volunteers who ensure the high technical standards of the conference and an engaging program. The virtual meeting has been made possible by the contributions of our session chairs and organizers, technical reviewers, and the authors of the papers. We are thankful to all our speakers for agreeing to participate and share their expertise and knowledge with the community.

During these unprecedented times, we are looking forward to your support and participation for our first virtual ASME ICE conference. While working remotely has posed many challenges for all of us, we are glad that your favorite conference is still “on”. We hope you enjoy the content offering of the conference, learn from the excellent keynotes and 85+ technical presentations and the workshop.

Stay home and stay safe!

Sincerely,



**Dr. Sibendu Som**

Manager and Principal Computational Scientist

Energy Systems Division

Argonne National Laboratory

Conference Chair



**Prof. Caroline Genzale**

Associate Professor

Mechanical Engineering, Georgia Institute of Technology

Conference Co-Chair