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Engineering & Scientific Consulting

Andrew Di Mauro, Ph.D., CFEI

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Professional Profile

Dr. Di Mauro focuses on applying fundamental engineering principles to investigations and analyses of incidents involving chemical processes, fires, explosions, and failure of consumer products. Dr. Di Mauro also has extensive experience with the principles of fundamental combustion, thermodynamics, and fuel formulation effects on flame structure, emissions, and combustion processes under varying environments.

Dr. Di Mauro received his B.A. in Applied Mathematics, with a concentration in Mechanical Engineering, from the University of California, Berkeley. As an undergraduate he established a background in fundamental combustion. He conducted research on effects of atmospheric conditions on the flammability of PMMA and Nomex at the University of California, Berkeley. Additional experience was gained as a visiting research scholar at the University of California, Irvine, where he studied the structure of Methane-Hydrate flames.

Dr. Di Mauro received his M.S.E. and Ph.D. in Mechanical Engineering from the University of Michigan. As a graduate student he investigated the ability of neural networks to predict cycle-to-cycle variability in a spark ignited engine. His dissertation focused fuel formulation effects in a gasoline compression ignition engine. The work utilized diesel, gasoline, and gasoline-like fuels to study the effect of viscosity, distillation boiling points, and autoignition characteristics on the combustions processes within the engine along with engine emissions. Throughout his graduate work, Dr. Di Mauro frequently collaborated with automotive OEMs and fuel formulators.

Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, University of Michigan, Ann Arbor, 2022

M.S., Mechanical Engineering, University of Michigan, Ann Arbor, 2018

B.A., Applied Mathematics, University of California, Berkeley, 2015

Tau Beta Pi Member – Engineering Honor Society

SigmaXi Member – Scientific Research Honor Society

Rackham Engineering Award Recipient, 2016-2022

NSF GRFP Honorable Mention, 2015

UC LEADS Scholar, 2012-2015

Licenses and Certifications

Certified Fire and Explosion Investigator (CFEI)

Professional Affiliations

National Fire Protection Association (NFPA) Member

National Association of Fire Investigators (NAFI)

American Society of Mechanical Engineers

Publications

Di Mauro A, Chen H, Sick V, Neural network prediction of cycle-to-cycle power variability in a spark-ignited internal combustion engine, Proceedings of the Combustion Institute, Volume 37, Issue 4, 2019, Pages 4937-4944, ISSN 1540-7489, https://doi.org/10.1016/j.proci.2018.08.058.

Presentations

Di Maruo A, Chen H, Sick V. Neural network prediction of cycle-to-cycle power variability in a spark-ignited internal combustion engine. PowerPoint presentation, 37th International Combustion Symposium, Dublin, Ireland, 2018.

Di Mauro A, Padilia R, Dunn-Rankin D. The structure of water-laden methane-air diffusion flames. Poster presentation, 2015 UC LEADS statewide conference, Merced, CA, 2015.

Di Mauro A, Link S, Fernandez-Pello C. Pilot ignition of PMMA under varying heat fluxes, air compositions, and air flows. Poster presentation, 2014 UC LEADS statewide conference, Riverside, CA, 2014.