**Tarek Echekki’s Bio**

Dr. Tarek Echekki is a Professor at the Department of Mechanical and Aerospace Engineering at North Carolina State University (NC State) since 2002. He received his PhD in Mechanical Engineering from Stanford University in 1993. Subsequently he held different research positions at the French Petroleum Institute (92-94), Sandia National Laboratories (94-96, 98-01) and the University of California at Berkeley (97-98). Prof. Echekki’s research interests are in combustion theory, direct numerical simulations, and turbulent combustion modeling. His most recent work has focused on the development of multiscale and data-based modeling frameworks to overcome challenges in turbulent combustion closure and to accelerate the simulation of turbulent reacting flows. The multiscale frameworks are based on coupling the coarse large-eddy simulation (LES) approach for momentum transport with the fine-grained, low-dimensional, stochastic model, one-dimensional turbulence (ODT), to capture subgrid (turbulence-chemistry and turbulence-radiation) interactions. The data-based frameworks use simulation or experimental data to develop low-dimensional manifolds and efficient solutions of combustion problems through the transport of the manifold moments.

Prof. Echekki is a Fellow of the American Society of Mechanical Engineers and an Associate Fellow of the American Institute of Aeronautics and Astronautics. He is the co-editor, with Prof. Epaminondas Mastorakos (University of Cambridge), of “Turbulent Combustion Modeling – Advances, New Trends and Perspectives” (Springer, 2011). He also serves as Associate Editor for ASME Journal of Heat Transfer.