

## **Combustion Dynamics in the Next-Generation Rocket and Air-Breathing Propulsion Systems (Research Needs and Challenges)**

**Vigor Yang**

**Distinguished Professor of Mechanical Engineering  
The Pennsylvania State University  
104 Research Building East  
University Park, PA 16802, U.S.A.**

*Distinguished Professor of Mechanical Engineering at the Pennsylvania State University, received his B.S. from the National Tsing Hua University and Ph.D. from the California Institute of Technology. His research interests include combustion instabilities in propulsion systems, chemically reacting flows in air-breathing and rocket engines, combustion of energetic materials, high-pressure thermodynamics and transport, and active combustion control for gas-turbine engines. He is the author or co-author of more than one hundred and seventy technical papers in the areas of propulsion and combustion, and has published five comprehensive volumes on solid and liquid rocket propulsion. Dr. Yang has been the editor-in-chief of the AIAA Journal of Propulsion and Power since 2000. He also serves on the editorial advisory boards of the AIAA Progress in Astronautics and Aeronautics and the Russian Journal of Combustion, Explosion, and Shock Waves. He has been a consultant to many U.S. rocket and gas-turbine engine companies as well as government organizations. Dr. Yang is a Fellow of the AIAA and American Society of Mechanical Engineers (ASME).*