Prof. A-Man Zhang

Prof. A-Man ZHANG is a Distinguished Professor of Changjiang Scholars at Harbin Engineering University. He was funded by the National Science Foundation for Distinguished Young Scholars and was selected as the Science and Technology Innovation Leading Talent by the National "Ten Thousand Talents Program". The main research interest of him includes bubble dynamics and fluid-structure interaction. In this area of research, he has managed over 40 research projects, including the Key Projects sponsored by the National Key R&D Program of China, the National Natural Science Foundation of China and so on. He has published over 200 articles in journals including JFM, JCP, PRF and POF, etc and serves as the Associate Editor for the journal CMES and as a member in the editor board of APOR, JHD, etc. With more than 6000 citations, he was selected as one of the most highly-cited researchers in China. Due to his contribution in the research area, he was rewarded with the National Innovation & Competition Award, the Xplorer Prize, the Second-Class Prize of the National Award for Technological Invention, the National Prize for Progress in Science and Technology, and so on.

Keynote Presentation 7:
High-pressure gas bubble dynamics and its applications

High-pressure bubbles have wide and important applications in shipbuilding, ocean engineering and other fields. However, due to the complexity of bubble dynamics, many difficult mechanical problems still remain unsolved. For this reason, targeted at problems in the field of shipbuilding and ocean engineering such as underwater explosion bubble and structure damage, exploration of deep-sea resources with high-pressure air-gun bubbles, ice breaking with bubbles, and high-speed object cross-media water entry, we established models and methods of near-boundary bubble dynamics combining theoretical analysis, numerical calculation and model tests, revealed dynamical behavior and load properties of high-pressure bubbles near boundaries, unveiled mechanical laws and mechanisms of structure damage subject to bubbles, and presented corresponding engineering applications, with an aim to provide references for related researches in bubble dynamics.