Jian Cao

Professor

Northwestern University (USA)

McCormick School of Engineering and Applied Science

Biographic Summary

A. Education

Ph.D. Mechanical Engineering, MIT, Cambridge, MA

M.S. Mechanical Engineering, MIT, Cambridge, MA

B.S. Materials Science and Engineering & Automatic Control, Shanghai JiaoTong University, Shanghai, China

B. Research Interests

Prof. Cao's major research interests include innovative manufacturing processes and systems, particularly in the areas of deformation-based processes and laser processes. Her work has made fundamental contributions to the characterization of the effects of material structure on forming behavior of metals and woven composites. Her research has integrated analytical and numerical simulation methods, control and sensors, design methodologies to advance manufacturing processes. Prof. Cao's research group has designed unique manufacturing equipment for microforming, dieless sheet forming, and additive manufacturing. Current research has direct impacts on energy-efficient manufacturing, surface engineering, and distributed manufacturing. Prof. Cao has published over 300 technical articles, including more than 200 journal articles, 10 book chapters, and 15 patents. She has given over 150 invited talks.

C. Significant Professional Services

Member, Board of Directors, mHub, Chicago, May 2016 - present

Editor-in-Chief, Journal of Materials Processing Technology -present

Editor, ASME Journal of Micro- and Nano-Manufacturing, 2012–2017

Chair, STC-F, The International Academy for Production Engineering (CIRP), 2017 - 2019

Past President of NAMRI/SME (North American Manufacturing Research Institution of SME)

Past Chair of the Manufacturing Engineering Division of ASME

Associate Editor, ASME Journal of Applied Mechanics, 2005-2011

Associate Editor, ASME Journal of Manufacturing Science and Engineering, 2003-2010

Guest editor, ASME Journal of Engineering Materials and Technology, October, 2001

D. Significant Recognition

ASME Milton C. Shaw Manufacturing Research Medal – to recognize significant fundamental contributions to the science and technology of manufacturing processes, 2020

SME Gold Medal, to recognize outstanding service to the manufacturing engineering profession in technical communications through published literature, technical writings or lectures, 2020

Vannevar Bush Faculty Fellow, US Department of Defense, 2019 – most prestigious and competitive single investigator research award by DoD

Distinguished Achievement Team Award, DOE EERE Vehicle Technologies Office, 2019 – to recognize outstanding industry-university-government partnerships, with Ford, Dow Chemical and NIST.