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Department of Mechanical and Materials Engineering  
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## Research Interests

Wall-bounded turbulence, wavelet applications in rough-wall turbulence, turbulence control, unsteady aerodynamics of flapping wing flight, bio-mimic flows, bio-fluids, micro/nano fluidics, multiphase reactive flows, renewable energy.

## Education

- *Ph.D. in Theoretical and Applied Mechanics*, UIUC, Urbana, IL, 2008
- *M.S. in Mechanical Engineering*, University of New Mexico, Albuquerque, NM, 2004
- *B.Eng. in Engineering Thermophysics*, Tianjin University, Tianjin, China, 1997
- *B.A. in English of Science and Technology*, Tianjin University, Tianjin, China, 1997

## Professional Experience

- *Assistant Professor*, Department of Mechanical and Materials Engineering, Wright State University, 09/2008-Present
- *Postdoctoral Research Associate*, Department of Mechanical Science and Engineering, UIUC, 05/2008-07/2008
- *Graduate Research Assistant*, Department of Theoretical and Applied Mechanics, UIUC, 01/2004-05/2008
- *Graduate Research Assistant*, Department of Mechanical Engineering, University of New Mexico, 01/2002-01/2004
- *Satellite Thermal Control Engineer*, Beijing Institute of Spacecraft System Engineering, Beijing, China, 1997-2001

## Archival Journal Publications

1. **Wu, Y.** & Christensen, K.T. 2007. Outer-layer similarity in the presence of a practical rough-wall topography. *Phys. Fluids*, **19**, 085108.

2. Natrajan, V.K., **Wu, Y.** & Christensen, K.T. 2007. Spatial signatures of retrograde spanwise vortices in wall turbulence. *J. Fluid Mech.*, **574**, 155-167.
3. **Wu, Y.** & Christensen, K.T. 2006. Population trends of small-scale spanwise vortices in wall turbulence. *J. Fluid Mech.*, **568**, 55-76.
4. **Wu, Y.** & Christensen, K.T. 2006. Reynolds-stress enhancement associated with a short fetch of roughness in wall turbulence. *AIAA J.*, **44**, (12), 3098-3106.
5. Christensen, K.T. & **Wu, Y.** 2005. Visualization and characterization of small-scale spanwise vortices in turbulent channel flow. *J. Visualization*, **8:2**, 177-185.

## Conference Papers

1. **Wu, Y.** and Christensen, K.T. 2008. Turbulence modifications in the roughness sublayer of flow over a highly irregular surface topology. *AIAA Paper 2008-0648*.
2. **Wu, Y.** and Christensen, K.T. 2007. The validity of outer-layer similarity in the presence of highly-irregular surface roughness. *AIAA Paper 2007-0528*.
3. **Wu, Y.** and Christensen, K.T. 2006. Reynolds-stress enhancement associated with a short fetch of roughness in wall turbulence. *AIAA Paper 2006-1117*.
4. Christensen, K.T. and **Wu, Y.** 2005. Characteristics of vortex organization in the outer layer of wall turbulence. *4th International Symposium on Turbulence and Shear Flow Phenomena*.
5. Christensen, K.T. and **Wu, Y.** 2004. A population study of small-scale spanwise vortices in turbulent channel flow. *Proc. 11th Int'l Symp. on Flow Visualization*.
6. Christensen, K.T. and **Wu, Y.** 2004. Direct assessment of the accuracy of stereoscopic PIV in turbulent channel flow. *ASME Paper HT-FED 2004-56055*.
7. Christensen, K.T., **Wu, Y.**, Adrian, R.J., Lai, W. 2004. Statistical imprints of structure in wall turbulence. *AIAA Paper 2004-1116*

## Professional Service

- Manuscript Reviewer for *Measurement Science and Technology*

## Professional Memberships

- American Institute of Aeronautics and Astronautics
- American Physical Society

- American Society of Mechanical Engineers