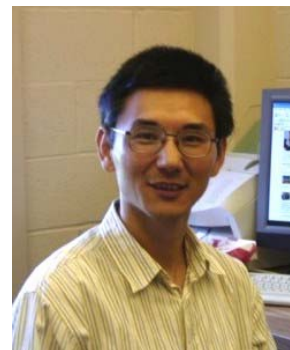


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Brief Biography

Dr. Ju received his undergraduate BSE and MSE from Tsinghua University in 1986 and 1988, and his PhD degree from Tohoku University in 1994. He was appointed to the assistant and associate professor ranks at Tohoku in 1995 and 1998, respectively. He came to Princeton University as a Professional Researcher in 1999 and after his appointment as a Yangzi River Professor at Tsinghua in 2000, was appointed as an assistant professor at Princeton. He is a member of the thermal sciences group at Princeton.

Relevant Experience and Interests

Prof. Ju's research interests include high pressure and high temperature combustion, plasma enhanced supersonic combustion, microscale combustion, coal-syngas combustion, direct numerical simulation, chemical kinetics, radiation-flame interaction, nanoparticle synthesis, NO_x emissions, and microgravity combustion. He has published more than 70 refereed publications. He has developed a new magnetic controlled pressure release type high pressure bomb for both high pressure and high temperature flame speed measurements. He also developed a new Fitted Statistical Narrow Band correlated-k (FSNB-CK) model to predict accurately the radiation heat loss and absorption which is essential for flame speed measurement using spherical bomb at high pressures and near the burning limit. In addition, he also jointly developed the CCSP algorithm and high dimensional fitting approach for kinetic minimization at Princeton. Moreover, he has developed several compressible and incompressible codes for multi-dimensional flame modeling with detailed chemistry.

Five Publications Relevant to the Present Subject Area

1. Z. Chen, X. Qin, B. Xu, Y. Ju, and F. Liu (2007). "Studies of Radiation Absorption on Flame Speed and Flammability Limit of CO₂ Diluted Methane Flames at Elevated Pressures," *Proc. Combust. Inst.* 31, 2693-2700.
2. K. Takita, N. Abe, G. Masuya, and Y. Ju (2007). "Ignition Enhancement by Using a Plasma Torch of N₂/O₂ Feedstock in a Supersonic Flow," *Proc. Combust. Inst.* 31, 2489-2496.
3. Z. Chen, X. Qin, Y. Ju, Z. Zhao, M. Chaos, and F. L. Dryer (2007). "High Temperature Ignition and Combustion Enhancement by Dimethyl Ether Addition to Methane-Air Flames," *Proc. Combust. Inst.* 31, 1215-1222.
4. Y. Xue and Y. Ju (2006). "Studies on the Lutoff Properties of Dimethyl Ether Jet Diffusion Flames," *Combust. Sci. Tech.* 178, 2219-2247.
5. J. Yuan, Y. Ju, and C.K. Law (2005). "Coupled Hydrodynamic and Diffusional-Thermal Instabilities in Flame Propagation at Small Lewis Numbers," *Physics of Fluids* 17, Article 074106.

Other Selected Publications

1. J. Yuan, Y. Ju, and C.K. Law (2006). "Pulsating and Hydrodynamic Instabilities at Large Lewis Numbers," *Combust. Flame* 144, 386-397.
2. Y. Ju and Y. Xue (2005). "Extinction and Flame Bifurcations of Stretched Dimethyl-Ether Premixed Flames," *Proc. Combust. Inst.* 30, 295-301.
3. S. Minaev, R. Fursenko, Y. Ju, and C.K. Law (2003). "Stability Analyses of Near-Limit Stretched Premixed Flames," *J. Fluid Mech.* 488, 225-244.
4. T. Lu, Y. Ju, and C. K. Law (2001). "Complex CSP for Chemistry Reduction and Analysis," *Combust. Flame* 126, 1445-1455.