Chung K. Law

Education

1968	B. Sc. (Physics)	University of Alberta
1970	M.A.Sc. (Aerospace Studies)	University of Toronto
1973	Ph.D. (Engineering Physics)	University of California at San Diego

Faculty Appointments

1988-present	Professor (1988-1995), Robert H. Goddard Professor (1995-present), Department of Mechanical and Aerospace Engineering Princeton University
1984-1988	Professor (Step V, 1984-87; Step VI, 1987-88) Department of Mechanical Engineering University of California at Davis
1976-1984	Associate Professor (1976-1981), Professor (1981-1984) Department of Mechanical and Nuclear Engineering Northwestern University

Research Statistics

- Major areas of research specialization: Combustion and propulsion, heat and mass transfer, energy, alternate fuels, pollution and the environment.
- Academic and research supervision: Supervised the dissertation research of over 30 doctoral students; supervised the research of over 50 post-doctoral and junior visiting fellows.
- Publication Statistics (as of September, 2015):
  - Over 450 journal papers; SCI h-Index: 56; Google h-index: 80; SCI citation by others: over 8,500; Google citation: over 22,000.
  - ISI Highly Cited Author (top 100), in Engineering; first recognized in 2000.
  - Most published author in Combustion and Flame, 2008-2012.
  - Thomson-Reuters Highly Cited Researchers worldwide in all disciplines, 2014, 2015.
  - Author of *Combustion Physics*, Cambridge University Press, 2006.
- Invited lectures
  - Over 50 conference-wide plenary/keynote lectures and named/major institutional lectures.
  - Over 150 invited departmental seminars and invited lectures at technical sessions.

Synergistic Activities

1. Directorship of the DOE-BES Combustion Energy Frontier Research Center (CEFRC, 2009-2016), headquartered at Princeton University, with the goal of: "Development of a validated, predictive, multi-scale, combustion modeling capability to optimize the design and operation of evolving fuels in advanced engines for transportation applications."
2. Organizer of two annual Summer Schools on Combustion, held at Princeton University and at Tsinghua University in China, with very positive responses.
3. Served in various editorial roles of high impact journals

Selected Honors, Awards, and Recognitions

- Fellow, American Society of Mechanical Engineers (ASME), 1989.
- Fellow, American Institute of Aeronautics and Astronautics (AIAA), 1992.

- Member, National Academy of Engineering (NAE), 2002.
- Fellow, American Physical Society (APS), 2006.
- Fellow, American Academy of Arts and Sciences (AAAS), 2010.
- Fellow, American Association for the Advancement of Science (AAAS), 2012.
- Curtis W. McGraw Research Award, American Society for Engineering Education (ASEE), 1984.
- Silver Medal, the Combustion Institute, 1992.
- Propellants and Combustion Award, AIAA, 1994.
- Heat Transfer Memorial Award, in Science, ASME, 1997.
- Energy Systems Award, AIAA, 1999.
- Pendray Aerospace Literature Award, AIAA, 2004.
- Egerton Gold Medal, the Combustion Institute, 2006.
- Hottel Lecturer, the Combustion Institute, 2006.
- Dryden Lecturer, AIAA, 2011.
- Outstanding Alumnus Award, School of Engineering, University of California at San Diego, 2000.
- Outstanding Alumnus Award, Hong Kong Polytechnic University, 2007.
- Doctor of Engineering, *honoris causa*, Hong Kong Polytechnic University, 2012.

Selected publications (from >450 publications):

1. Wu C.K. & Law C.K. (1985). On the determination of laminar flame speeds from stretched flames, *Proc. Combustion Inst.* 20, 1941-1949.
2. Law C.K. & Egolfopoulos F.N. (1992). A unified chain-thermal theory of fundamental flammability limits, *Proc. Combustion Inst.* 24, 137-144.
3. Law C.K., Sung C.J., Yu G. & Axelbaum R.L. (1994). On the structural sensitivity of purely-strained planar premixed flames to strain rate variations, *Combustion and Flame* 98, 139-154.
4. Qian J. & Law C.K. (1997). Regimes of coalescence and separation in droplet collision, *J. Fluid Mech.* 331, 59.
5. Lu T.F. & Law C.K. (2005). A directed relation graph method for mechanism reduction, *Proc. Combustion Inst.* 30, 1333-1341.
6. Lu T.F. & Law C.K. (2009). Toward accommodating realistic fuel chemistry in large-scale computations, *Prog Energy Combust Sci* 35, 192-215.
7. Gao Y. & Law C.K. (2011). Detonative propagation and accelerative expansion of the Crab Nebula shock front, *Phys. Rev. Lett.* 107, 171102.
8. Chaudhuri S., Wu F., Zhu D. & Law C.K. (2012). Flame speed and self-similar propagation of expanding turbulent premixed flames, *Phys. Rev. Lett.* 108, 044503.
9. Deng S., Zhao P., Zhu D. & Law C.K. (2014). NTC-affected ignition and low-temperature flames in nonpremixed DME/air counterflow, *Combust. Flame*. 161, 1993-1997.
10. Wu F., Saha A., Chaudhuri S. & Law C.K. (2014). Facilitated ignition in turbulence through differential diffusion, *Phys. Rev. Lett.* 113, 024503.