



Chung L. Tang

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B.S. 1955 (Washington at Seattle); M.S. 1956 (California Institute of Technology); Ph.D. 1960 (Harvard)

Biography

Tang was at the Technical University, in Aachen, Germany, as the John Parker Traveling Fellow from Harvard in 1959-60. He was a research staff member, and later principal research scientist, in the Research Division of the Raytheon Company from 1960 through 1964, when he joined the Cornell faculty. At the university he is a member of the Materials Science Center. During his sabbatical leave in 1970-71, he was an NSF Senior Postdoctoral Fellow at Harvard and a consultant at the Naval Research Laboratory. In 1979-80, he was a visiting professor at the University of Washington and a Scientific Consultant-at-Large at the Laboratoire d'Optique Quantique du C.N.R.S. in Paris. He was a Visiting McKay Professor at the University of California at Berkeley in 1985. Tang edited the volume on quantum electronics in the *Methods of Experimental Physics* series and was coeditor of the volumes on nonlinear optics in the *Treatise on Quantum Electronics*, both published by Academic Press. He was an associate editor of the *IEEE Journal of Quantum Electronics* and an associate editor of *Optics Letters*. In 1996 he was presented the Charles Hard Townes Award by the Optical Society of America. He is a member of the National Academy of Engineering, a fellow of the American Physical Society, the American Optical Society, and the Institute of Electrical and Electronics Engineers, and a member of Phi Beta Kappa and Tau Beta Pi.

Research Interests

The objective of our research program is to search for and study new optical materials and processes that are suitable for application in the generation, modulation, and detection of electromagnetic radiation from the infrared to the ultraviolet. Emphasis is on lasers, electro-optic devices, and nonlinear and coherent optical processes.

Current Research Projects

Femtosecond Sources and Ultrafast Processes (*National Science Foundation*)

Femtosecond Laser Studies of Ultrafast Processes in Compound Semiconductors (*Joint Services Electronics Program*)

Optical Switching and Two-mode Bistability in Semiconductor Lasers (*Advanced Research Projects Agency*)

Selected Publications

- Tang, C. L. 1990. Ultrafast optical pulses. Invited review, *Encyclopedia of Physics*, 2nd ed., ed. R. G. Lerner and G. L. Trigg. New York: VCH Publishers.
- Ozeki, Y., J. E. Johnson, and C. L. Tang. 1991. Polarization bistability in semiconductor-lasers with intracavity multiple quantum-well saturable absorbers. *Applied Physics Letters*. 58(18):1958-60.
- Pelouch, W. S., R. J. Ellingson, P. E. Powers, C. L. Tang, D. H. Levi, and A. J. Novzik. 1992. Hot carrier relaxation in quantum well and bulk GaAs at high carrier densities: Femtoseconds to nanoseconds. In *Ultrafast lasers probe phenomena in semiconductors and superconductors*, pp. 260-71. Proceedings of SPIE, vol. 1677. Bellingham, WA: SPIE.
- Pelouch, W. S., P. E. Powers, and C. L. Tang. 1992. Ti:sapphire pumped, high-repetition-rate femtosecond optical parametric oscillator. *Optics Letters* 17:1070-72.

- Tang, C. L., W. R. Bosenberg, T. Ukachi, R. J. Lang, and L. K. Cheng. 1992. Optical parametric oscillators. *Proceedings of the IEEE* 80:365-74.
- Ellingson, R. J., and C. L. Tang. 1993. High-power, high-repetition-rate femtosecond pulses tunable in the visible. *Optics Letters* 18:438-40.
- Lin, C. F., and C. L. Tang. 1993. Generation of ultrashort pulses from a superluminescent diode with a monolithically integrated absorber in a coupled-cavity configuration. *Applied Physics Letters* 63:2594-96.
- Powers, P. E., R. J. Ellingson, W. S. Pelouch, and C. L. Tang. 1993. Recent advances of the Ti:sapphire-pumped high-repetition-rate femtosecond optical parametric oscillator. *Journal of the Optical Society of America B* 10:2162-67.
- Rosenwaks, Y., B. R. Thacker, A. J. Nozik, R. J. Ellingson, K. C. Burr, and C. L. Tang. 1994. Ultrafast photoinduced electron transfer across semiconductor-liquid interfaces in the presence of electric fields. *Journal of Physical Chemistry* 98:2739-41.
- Tang, C. L. 1994. Nonlinear optics. In *American Optical Society optics handbook*, vol. 2, pt. 5, chapt. 38. New York: McGraw-Hill.
- Shire, D. B., M. A. Parker, and C. L. Tang. 1996. Multiple-input optical control of vertical cavity surface emitting lasers using intracavity coupled in-plane lasers. *IEEE Photonics Letters* 8:188.
- Tang, C. L., and L. K. Cheng. 1996. *Fundamentals of optical parametric processes and oscillators*. Amsterdam: Harwood Academic.
- Burr, K. C., C. L. Tang, M. A. Arbore, and M. M. Fejer. 1997. High repetition rate femtosecond optical parametric oscillator based on periodically poled LiNbO₃. *Applied Physics Letters* 70:3341-43.

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