

University of Wisconsin–Madison, Physics Department

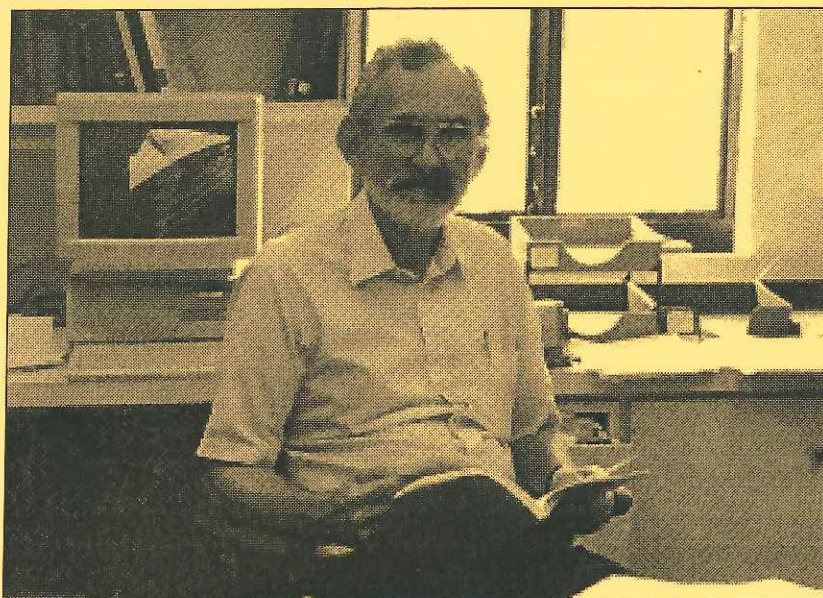
2000 JULIAN E. MACK LECTURE

Infrared Laser Spectroscopy

Robert F. Curl

Nobel Laureate

Professor of Chemistry, Rice University



The infrared kinetic spectroscopy method, which uses tunable infrared laser sources to investigate the spectroscopy and kinetics of small, highly reactive free radical species, will be described. Tunable infrared laser sources based upon difference frequency generation (DFG) in nonlinear crystals were developed for this infrared kinetic spectroscopy work. This has led primarily through the initiative of my colleague Frank Tittel to the development of atmospheric monitoring devices using tunable infrared laser sources based upon DFG. The current status of this device development will be described and some applications of these monitors will be discussed. We have recently started using quantum cascade lasers for monitoring purposes. Some of our experiences with these devices will be described.

1300 Sterling Hall • 4:00 P.M. • Friday, February 18, 2000