Race to the Diode Laser

On 9 July 1962, at the Solid State Device Research Conference in Durham, NH, USA, Robert J. Keyes of MIT Lincoln Laboratory reported observing intense luminescence with a quantum efficiency of ~85% from GaAs junctions at 77 K. Within months, four research teams would independently develop and demonstrate injection lasers. For a look at diode lasers today, see this month’s cover story (p. 28).

16 September 1962: Robert N. Hall and team at General Electric Schenectady operate the first semiconductor diode laser

24 September 1962: Paper received by Physical Review Letters

12 October 1962: Robert Rediker and Ted Quist at MIT Lincoln Lab spot intense filaments showing laser operation when examining a diode output with an infrared viewer


The first semiconductor lasers were homojunction devices that operated only when cooled. The race continued for a diode laser that could emit continuously at room temperature. For more on the story of the first diode lasers and what followed, see "The Breakthrough Birth of Diode Lasers, OPTN," July/August 2007, p. 38.