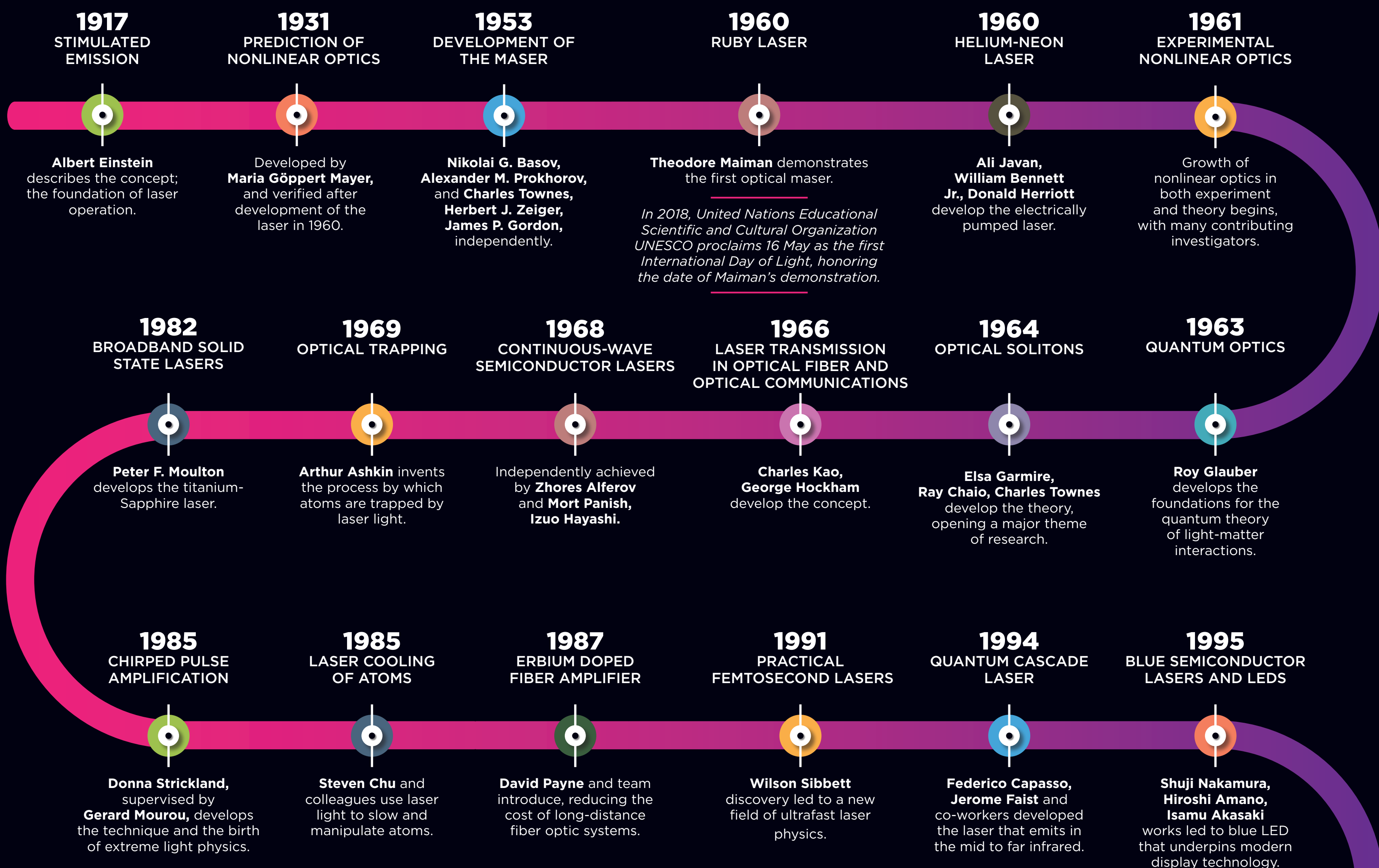




60 years of  
**LASER**  
INNOVATION

# CELEBRATING THE HISTORY OF THE LASER

The year 2020 marks 60 years since the construction and firing of the first laser. SPIE pays tribute to the many scientists and engineers who have changed lives with the development of this technology.



## Nobel Prizes for laser related discoveries

- 1953: PHYSICS**  
Nikolai G. Basov, Alexander M. Prokhorov, Charles Townes  
*The maser*
- 1963: PHYSICS**  
Maria Göppert Mayer  
*The prediction of nonlinear optics*
- 1981: PHYSICS**  
Nicolaas Bloembergen, Arthur L. Schawlow  
*Experimental nonlinear optics*
- 1997: PHYSICS**  
Steven Chu, Claude N. Cohen-Tannoudji, William D. Phillips  
*Laser cooling of atoms*
- 1999: CHEMISTRY**  
Ahmed Zewail  
*Femtosecond spectroscopy*
- 2000: PHYSICS**  
Zhores Alferov, Jack Kilby, Herbert Kroemer  
*Continuous-wave semiconductor lasers*
- 2005: PHYSICS**  
Roy J. Glauber  
*Quantum optics*
- 2005: PHYSICS**  
Theodor W. Hänsch, John L. Hall  
*Laser-based optical frequency comb*
- 2009: PHYSICS**  
George Smith, Willard Boyle, Charles K. Kao  
*Laser transmission in optical fiber and optical communications*
- 2014: PHYSICS**  
Shuji Nakamura, Hiroshi Amano, Isamu Akasaki  
*Blue LED*
- 2014: CHEMISTRY**  
Eric Betzig, William Moerner, Stefan Hell  
*Super-resolved fluorescence microscopy*
- 2017: PHYSICS**  
Rainer Weiss, Kip Thorne, Barry C. Barish  
*LIGO detector and observation of gravitational waves*
- 2018: PHYSICS**  
Arthur Ashkin  
*Optical trapping*
- 2018: PHYSICS**  
Gérard Mourou, Donna Strickland  
*Chirped pulse amplification*

