

Conferències

2010/09/23

LASERFEST Lecture

MAJID EBRAHIM-ZADEH 'The Laser: From Maiman to Modern Times'

MAJID EBRAHIM-ZADEH

Optical parametric oscillators group

ICFO-The Institute of Photonic Sciences, SPAIN



Majid Ebrahim-Zadeh

The first demonstration of a laser employed ruby (trivalent chromium, a transition metal, doped in sapphire.) Subsequent development of other lasers led to a major revolution in the field of optics, impacting first science, then engineering and finally the technology of much of the modern, digital world. With the author's invention of the Ti:sapphire laser (trivalent titanium in sapphire) a new active ion found life in an old host crystal, one with especially favorable properties. The Ti:sapphire laser has found significant uses in science (three Nobel prizes to date) and in technology.

In this talk we will review the developments in transition-metal-doped solid state lasers and show their impact in more detail.

Since its first demonstration by Theodore Maiman 50 years ago, the Laser has become an indispensable tool capable of transforming light from its naturally incoherent state to a highly coherent state in space and time. The impact of this "optical coherence transformer" on the field of Optics can be considered at least as important as that of the "transistor" on the field of Electronics. The important characteristics of laser light with regard to intensity, spectral purity, spatial coherence, and directionality have led to the establishment of a new branch of optical science and technology now referred to as Photonics. Many new applications in previously unexplored areas of fundamental and applied science have become possible because of the laser. The laser has permeated almost every aspect of our daily lives, from compact disc players and desktop printers to laser light shows, motorcars, and bar code scanners at supermarket checkouts. In this talk, we will explore some of the most important developments in the 50-year history of the laser, from the demonstration of the first working laser to the major landmarks in laser technology and the impact of this unique optical tool on modern life.

Seminar, September 23, 2010, 12:00. ICFO's Auditorium

[« Back](#)
[INICI](#)[L'ICFO](#)[▶ ACTUALITAT](#)[Notícies](#)[Conferències](#)[Colloquia](#)[Activitats](#)[ICFO als Mitjans](#)[Newsletter](#)[L4H Seminars](#)[RECERCA](#)[PROGRAMES](#)[DIRECTORI](#)[FORMACIÓ](#)[PUBLICACIONS](#)[COL-LABORACIÓ](#)[EMPRESARIAL](#)[PARTNERSHIPS](#)[INSTAL·LACIONS](#)[ADMIN & SERVEIS](#)[OFERTES DE FEINA](#)[BEQUES](#)[ENLLAÇOS](#)