

50th anniversary of the laser

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On July, 7, 1960 a press conference at Huyghes announced that Maiman had assembled and put into operation the first laser. It was the very pulsed ruby laser that everybody knows today. The announcement came as a bomb. Nobody expected that in an unknown laboratory, new to the race to build a laser, this result could be obtained. It was such an unexpected result that many still today maintain that the true laser was discovered at Bell by Shawlow. This result was achieved through a long story which passed by the Townes maser and many tentative experiments and discussions both in the USA and Soviet Union. In this special issue we present a collection of papers which provide further information as to what happened after Einstein introduced the concept of stimulated emission.

The first paper is a short paper by Townes [1] on the development of the physics of microwaves following the creation of the maser. When the laser came on the stage one of its properties was the inherent coherence of the emitted light. Emil Wolf's contribution [2] enlightens the early days of coherence to which he so much contributed and the very timely first Rochester Conference which was held on June 27-29, 1960 a few days before the Times announcement of the Maiman achievement. Important contributions were given by Soviet Scientists and, Svetlana Lukishova's contributions [3] helps us understand the work of Valentin Fabrikant which was mostly unknown to western scientists. At the end of his life, Maiman went to Vancouver in Canada and Andrew H. Rawicz gives his testimoniancy of his friendship there [4]. Coherence and the statistical properties of laser light were much studied and we have two exceptional papers by Roy Pike [5] and Jan Perina [6] discussing these arguments. The issue also contains three more papers presenting some earlier achievements in the construction of multi-quantum well laser (M. L. Dotor, P. Huertas, P. A. Postigo, D. Golmayo and F. Briones) [7], the first measurements on very short pulses (H. P. Weber

and R. Dändliker) [8] and spatial coherence (D. P. Barato and M. L. Calvo) [9].

References

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