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## High pulse repetition rate copper vapour laser with subnanosecond pumping leading front

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It was proposed long ago that under pumping by the rectangular pulses an efficiency of copper laser may exceed 15% at linear output power of hundreds Watts and pulse repetition rate up to 50 kHz. These parameters are quite competitive with diode pumped solid state lasers, but Cu-laser excess ones owing to high beam quality, narrow lasing line, less expensive, etc. The problem for copper vapor laser is the lack of fast high power switches with subnanosecond leading front. In the presentation it is demonstrated that fast switches developed on the open discharge base can operate on pulse repetition rate at least 100 kHz with leading front 0.5 ns. Laser tube 48 cm long and 2 cm in diameter was used in the experiments. It was demonstrated that up to 30 kHz is observed linear dependence of output power versus pulse repetition rate. Results of experiments to reach high efficiency will be reported.

### Biography

P A Bokhan is a Principal Scientist in the Institute of Semiconductor Physics (ISP) Siberian Branch of Russian Academy of Science (SB RAS). From 1975-1972, he was senior Scientist of IAO. Along with his colleagues he developed the technologies to produce a lot of other isotopes of different elements, for example rubidium, calcium, ytterbium and so on. From 2008-2000, he was the Head of Quantum Electronics Division. Currently, he is a Principal Scientist in the Institute of Semiconductor Physics (ISP) Siberian Branch of Russian Academy of Science (SB RAS). He is actively involved in the field of generation of powerful electric and electron beam pulses with subnanosecond rise time at high repetition rate (up to 50kHz), and pumping different lasers, especially semiconductor lasers and metal vapour lasers since 2008. His fields of investigations are: physics of gaseous and semiconductor laser, laser isotope separation, physics of gas discharge, electron emission from cold cathodes, atomic collisions and fast processes in plasma physics.

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