

New world record:

“Output power beyond 100W from a semiconductor disk laser”

NAsP III/V GmbH has demonstrated in close cooperation with the University of Marburg (Department of Physics, Marburg), University of Arizona (College of Optical Sciences, Tucson) and the company Nonlinear Control Strategies Inc. (Tucson) world record output power of 106W from a Vertical-external-cavity surface-emitting laser (VECSEL) at an emission wavelength of 1028nm.

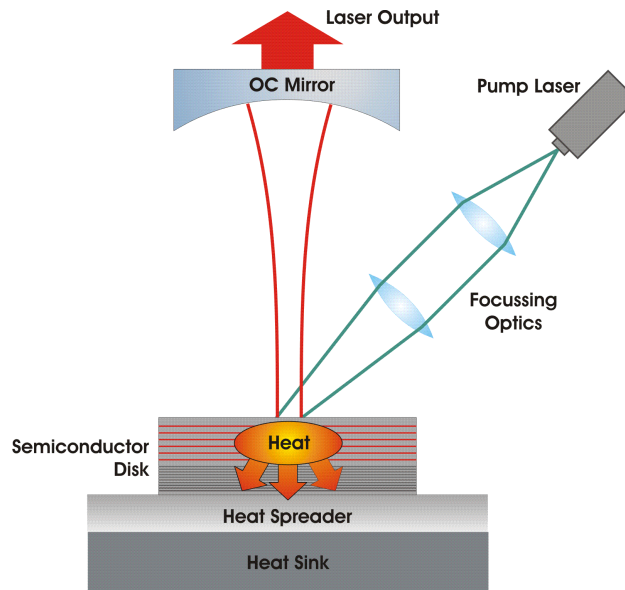


Figure 1: Principle sketch of a VECSEL setup.

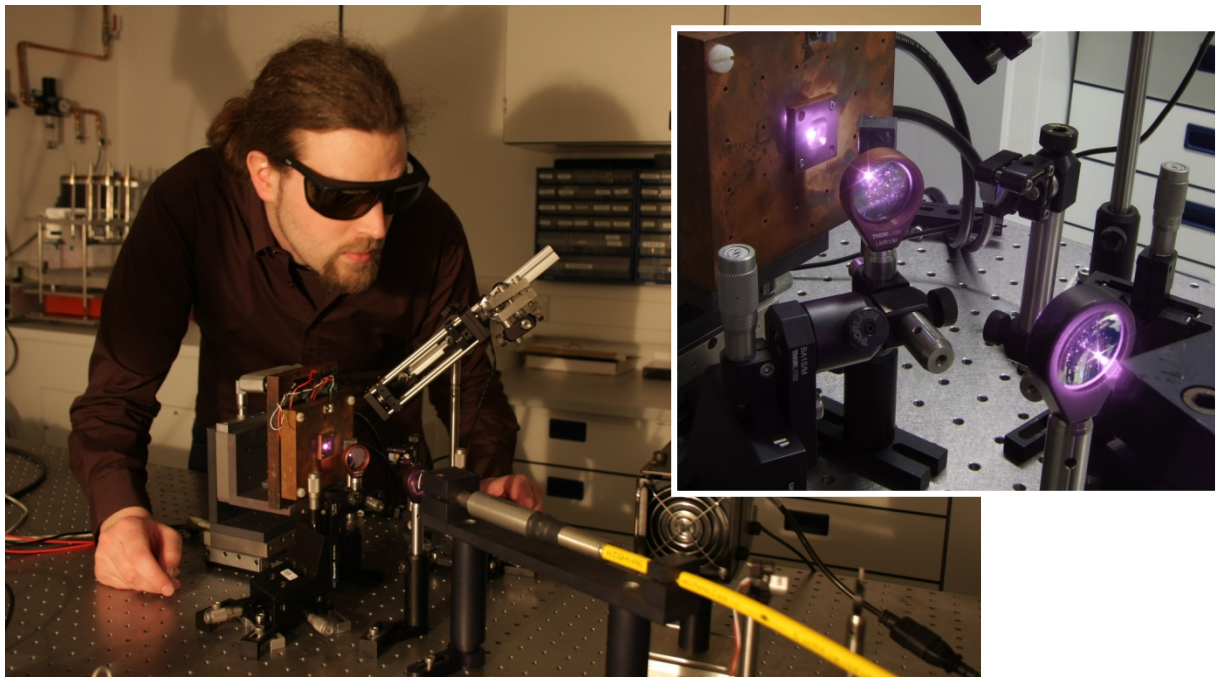


Figure 2: Ph.D. student Bernd Heinen with the experimental laser setup at the University of Marburg. Inset: VECSEL-Chip mounted to the heat sink.

Experimental results:

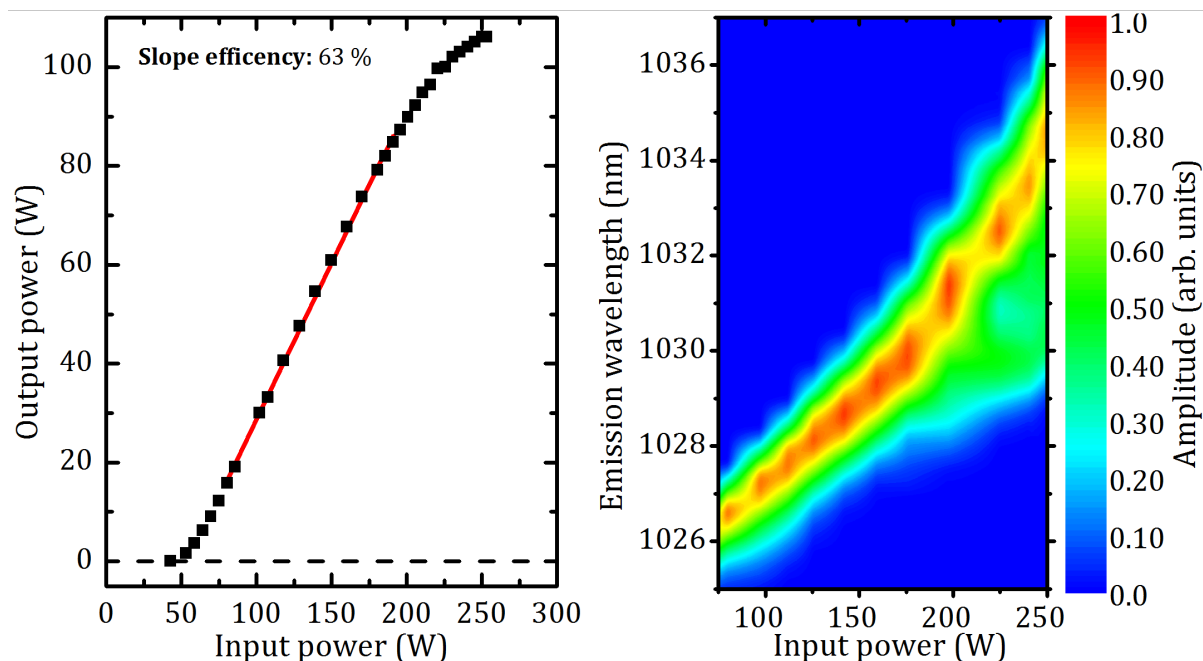


Figure 3: Left: Output power versus input power at a holder temperature of 3°C. Right: Emission spectrum versus input power (linear scale normalized to 1)

For more information please see the following publication:

“106 W continuous wave output power from a vertical-external-cavity surface-emitting laser (VECSEL)”, B. Heinen, T. L. Wang, M. Sparenberg, A. Weber, B. Kunert, J. Hader, S. W. Koch, J. V. Moloney, M. Koch and W. Stolz
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