



## Breakthrough in Laser Harmonic Generation

Research on second harmonic generation led by Prof. Majid Ebrahim-Zadeh is World News in Laser Focus World.

February 14, 2011

The January 2011 issue of Laser Focus World highlights new research results on second harmonic generation of cw lasers at record efficiency by the OPO group at ICFO led by ICREA Prof. Majid Ebrahim-Zadeh.

The research is motivated by the low efficiency of harmonic generation in cw lasers and complexities of techniques used to date. In the new approach, multiple crystals are used in a single-pass scheme to control thermal dephasing and conversion in each stage to obtain maximum overall efficiency. Using this technique, ICFO researchers achieved a record efficiency of 56% in harmonic generation of a cw Yb fiber laser, providing >13 W of green power at 532 nm.



The results were published in Optics Letters by former Postdoctoral Researcher, Dr. Goutam Samanta, ICFO PhD Students Chaitanya Kumar and Kavita Devi, and Prof. Ebrahim-Zadeh.