Power Scaling of Nonlinear Frequency Converted Tapered Diode Lasers for Biophotonics -
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Diode lasers have proven to be versatile light sources for a wide range of applications. Nonlinear frequency conversion of high brightness diode lasers has recently resulted in visible light power levels in the watts range enabling an increasing number of applications within biophotonics. This review provides an overview of the developments within nonlinear frequency converted high power laser diodes in the visible spectral range. Single-pass nonlinear frequency doubling is presented as a nonsophisticated method to achieve watt-level output powers and possible routes to higher power and efficiency are included. Application examples within pumping of mode-locked Ti:sapphire lasers and implementation of such lasers in optical coherence tomography are presented showing the application potential of these lasers.

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