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Editorial

Although the potential of continuous-wave optical parametric oscillators (cw OPOs) has been recognized for more than three decades, the devices have only very recently matured sufficiently for practical applications.

Thanks to improvements and new developments that have occurred within the last few years in several areas, such as nonlinear materials, pump sources, dielectric coatings, frequency stabilization techniques, and device configurations and optimization, cw OPOs are now able to generate radiation from the near-IR to the mid-IR and even in the visible, in part with substantial power and frequency stability. The door to applications of practical relevance has finally opened. Thus, a special issue reporting on the most recent developments in the field appeared timely, both to present the state of the art and to stimulate further developments and uses of cw OPOs.

The issue contains 12 original theoretical and experimental contributions presenting properties and applications of various types of cw OPOs, both singly and doubly resonant. Classical and quantum effects are discussed. It is hoped that this collection will be useful both to specialists and to the general audience interested in an overview of the field.

We dedicate this special issue to our Ph.D. student Klaus Schneider, who died on March 30, 1998, following a tragic mountaineering accident. In his short career, he contributed substantially to the field of cw OPOs and would have continued to be active in this field after the completion of his doctorate. His death is a great loss to our community.

We thank Prof. Träger for the opportunity to create this issue and Mrs. U. Hentzen for her help in preparing it.

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S. Schiller, J. Mlynek
Guest editors