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Light Focusing and Optical Vortices

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Message from the Guest Editor

Dear Colleagues,

Solving a problem that is as fundamental as controlling the state of light is a one of the most important areas of study in modern optics and nanophotonics. To achieve this goal, it is essential to understand the physical effects that arise during the propagation of laser beams, including during their focusing, as well as the possibility of predicting these effects. This is possible by developing a theory which describes the characteristics of laser light. Singular optics, which studies vortex optical beams, can be called upon to answer these questions.

This Special Issue aims to present state-of-the-art articles regarding both theoretical and experimental studies on the generation, propagation, focusing and measurement of light beams and applications of structured beams. Topics include, but are not limited to:

- The design, simulation, and manufacturing of optical devices for light focusing (metasurfaces, zone plates, plasmonic lenses, etc.);
- Properties of tightly focused light;
- Photonic nanojet;
- Light bullet;
- Overcoming the diffraction limit;
- Applications of tightly focused light;
- Singular optics;
- The generation of optical vortices;

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Special Issue