



Quantum Effect in Interaction between Femtosecond Pulse and Matters

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Message from the Guest Editor

Dear Colleagues,

The interaction between femtosecond laser pulses and matters leads to numerous nonlinear and quantum optics phenomena, such as multiphoton/tunneling ionization, fluorescence, terahertz, high-order harmonic generation. The pulse shaping technique makes the femtosecond pulses more powerful to study the interaction between femtosecond pulses and matters. Especially, the emergence of optical vortex endowed the femtosecond pulses with orbital angular momentum. Since the light intrinsically carries spin angular momentum, as femtosecond pulses carry orbital angular momentum and interact with matters (atoms, molecules, and material with micro-nano structure, etc.), spin-orbital coupling occurs, which brings about new quantum and nonlinear effects. This opens up tremendous new applications in optical tweezers and particle trapping, microscopy and imaging, high-capacity optical communication and cryptography and so on.





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Message from the Editor-in-Chief

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