

## Special Issue

# Light-Controlled Modulation and Analysis of Neuronal Functions

### Message from the Guest Editors

Contemporary research has been enriched by new directions in which light plays a key role as a tool for the modulation of cellular activity and the invasive monitoring of intracellular ions and other components. The progress in molecular biology, imaging techniques and other modern technologies has led to the emergence of three main areas in which light is the main tool: optogenetics, photopharmacology and optosensorics. The main advantages of these approaches are the possibilities to investigate the functions of cells; modulate the activity of ion channels, synaptic transmission and neuronal circuits; measure concentrations of ions and other cellular components; and even control the behaviour of organisms. This Special Issue is intended to highlight the latest experimental and methodological advances in these areas, as well as to present review articles with a primary focus on light-based analysis and control of neuronal functions. A discussion of the difficulties and limitations of using light as a modulator of cellular activity is also planned.

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### Guest Editors

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### Deadline for manuscript submissions

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## International Journal of Molecular Sciences

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