Special Issue

Design and Synthesis of Functional Deuterated Biomaterials

Message from the Guest Editor

Deuterium-labelled compounds have found extensive applications in such research areas as pharmaceutical, bioanalytical, neutron diffraction, inelastic neutron scattering, and in the analysis of drug metabolism using mass spectrometry (MS) and the structure of biomolecules using NMR. In most cases, deuterated compounds have very similar physical and chemical properties to their naturally occurring pronated parent compounds. Deuterium labelling, however, does alter a number of the properties that can be used in some experimental techniques. For these reasons, the interest in new methodologies for the deuterium labelling of biomolecules and the extent of their applications are equally rising. Per-deuteration is often not possible on the whole molecule due to the presence of some functional groups like amines, hydroxyl, aldehyde, ether, or ketone. Therefore, the proper synthetic transformation of functional groups from a deuterated precursor is often necessary in a fashion that achieves the functionality of the desired compound with the desired deuteration levels.

Guest Editor

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