

Stable Radicals and Radicaloids: Open-shell Molecules for Innovative Materials

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Radicals are open-shell molecules containing one or more unpaired electron(s), and hence exhibit unique optical, electronic, and magnetic properties; making them highly promising materials for spintronics, optoelectronics, and energy applications. The inherent thermal instability of radicals due to their high chemical reactivity is, however, a major challenge that limits their practical utility. Advanced approaches for accessing thermally stable radicals with readily adaptable structural and electronic features are crucial to exploit the full potential of these highly promising species. The focus of this talk is to provide an overview of our research endeavors devoted to access and explore stable organic as well as main-group element radicals, diradicals, diradicaloids, radical cations etc.