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Novel Nanotherapeutic Strategies: Fabrication Approaches, Application and Clinical Challenges

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Advances in nanotechnology have revolutionized traditional therapies by improving the diagnosis and effectiveness of drug delivery due to a number of advantages presented by these novel systems. As drug vehicles, nanocarriers can improve drug loading efficiency by conjugating or encapsulating them, enhancing drug stability and *in vivo* circulation time, targeting to the disease site and on-demand drug release after fabrication with stimuli-responsive functionalities. Moreover, encapsulated drugs in nanoformulations may be combined with diagnostic and imaging agents to develop theranostic systems. The availability of several characterization techniques and functionalization chemistry of biomaterials further adds to the advancement in this research area. Nonetheless, despite the enormous research efforts being performed in the development of these novel systems, translating nanomedicines into commercial products remains challenging.

This special issue: 'Novel Nanotherapeutic Strategies: Fabrication Approaches, Application, and Clinical Challenges' of *Drug Discovery Today* focuses on advances, applications, key challenges and recent progress made towards nanoformulation development and its ability to improve therapeutic potential. This special issue has assembled key opinion leaders in drug delivery research, highlighting current and future nanotherapeutic approaches and delivery systems for diseases as diverse as HIV, cancer and CNS disorders. Before moving to briefly highlighting each of the excellent contributions received to this special issue, the Guest Editors take this opportunity to thank Dr. Stephen Carney, Editor-in-Chief of *Drug Discovery Today,* for giving us the opportunity to develop this special issue and for his constant support throughout the process.