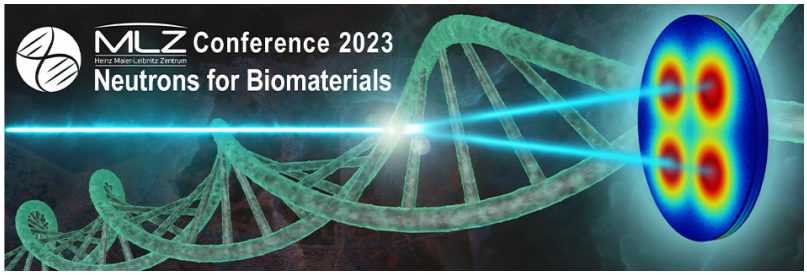

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Redefining our understanding of drug loaded polymer micelles using neutron, synthesis and molecular modelling

Monday, 22 May 2023 16:40 (20 minutes)

Over the last decades, our understanding of drug loaded micelles was simple. The core dissolves and protects the drugs, the micelle corona ensures stealth properties and ensures colloidal stability. Using a wide variety of analytical tools, including neutron scattering, NMR spectroscopy, synthetic variations and in silico molecular modeling, we have found conclusive evidence that this simplistic view does not reflect experimental realities. Accordingly, we suggest to significantly overhaul our view, models and cartoons of drug loaded to reflect on updated vision, wherein the hydrophilic corona is actively engaged in drug interactions and thereby critical for drug solubilization, biodistribution and therapeutic efficacy.

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