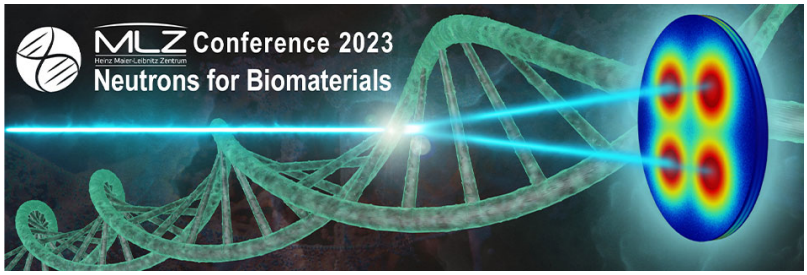

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Application of X-ray and neutron scattering within development of RNA nanopharmaceuticals

Monday, 22 May 2023 15:40 (40 minutes)

The recent success of messenger RNA (mRNA) nanoparticles for vaccination against Covid-19 has highlighted the great potential of nanoparticulate pharmaceutical products for application in a wide variety of indications, including cancer.
Nanoparticles can be formed from different materials, including lipids (liposomes, lipid nanoparticles) polymers, as well as inorganic materials or hybrid formats. All of them are characterized by their colloidal nature, and their intrinsic complexity poses great challenges within pharmaceutical development.
Extended physicochemical characterization, including advanced techniques such as SAXS/SANS measurements, can contribute to the understanding of structural and functional coherencies inside these systems and provide a basis for successful development into clinical practice.
In this presentation, taking selected RNA nanoparticle formats as examples, key characteristics are described, and options to control and improve physicochemical parameters related to activity are outlined.

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