Virtual DCMIC Seminar Series 2021

In the last years, increasing discoveries in biology are revealing that cells can form membraneless compartments by liquid-liquid phase separation of proteins and nucleic acids. These compartments underlie several important functions and can act as microreactors, in which environment and composition are carefully regulated in space and time. These observations inspired us to mimic these membraneless compartments on the bench. Using modern engineering tools, including microfluidic technology, we investigate how biomolecular condensation affects biochemical functions such as enzymatic reactions and formation of pathological amyloid fibrils. Our studies have implications towards the development of high-performance microreactors as well as on increasing our fundamental understanding of functional biology and aberrant aggregates involved in devastating neurodegenerative disorders.

References:
1) Faltova L. et al, ACS Nano, 2018, 12, 9991-9999
2) Küffner A.M. et al., ChemSystemsChem, 2, 2020
3) Linsenmeier M.et al., Angewandte Chemie Int. Ed., 2019, 58, 1-7
4) Capasso Palmiero U. et al., Angewandte Chemie Int. Ed., 2020, 59, 8138-8142
5) Küffner A.M. et al., Chemical Science, 2021, 12, 4373-4382

Seminar #2.9
May 7, 2021, 11:30 am

Membraneless compartments based on intrinsically disordered proteins: from biology towards new protein materials

Paolo Arosio
ETH Zurich

Registration: Form
More info: www.cmic.polimi.it