Séminaire

Mardi 8 avril 2025 à 10h30

Amphithéâtre Henri Benoît

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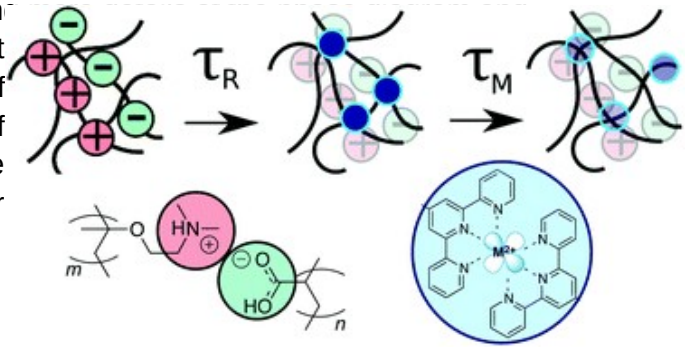
Equipe IRIS, ICS

Non-covalent Bonds for the Control of the Viscoelasticity of Polyelectrolyte Complexes

Polyelectrolyte complexes are aqueous, polymer-rich phases that exhibit a unique set of properties: they form from oppositely charged, highly hydrophilic polymers, yet they are water-insoluble. Because salt acts as a plasticizer for these systems, achieving specific material properties at a given salt concentration is nearly impossible.

During my PhD thesis, I developed a platform to formulate coacervate complexes bearing metal-binding moieties that introduce physical crosslinks. I will present how the choice of metal ion controls the viscoelasticity of the resulting metal-ligand-polyelectrolyte hybrid complexes. Furthermore, I will discuss improvements in high-strain amplitude (nonlinear) behavior in these hybrids—an aspect highly relevant to application-driven research in polymer materials.

The science of complex coacervates is maturing, with more and relaxation mechanisms documented. Nonetheless, significant knowledge gaps remain regarding the structure of polyelectrolyte complexes, which complicate interpretation of scattering and rheological data. I will highlight several of these gaps, which I hope will provide stimulating discussion for researchers in the polymer field.



Les personnes souhaitant rencontrer Aljosha sont priées de prendre contact avec lui.