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Interaction between Oppositely Charged Polymers ANISHA SHAKYA, JOHN KING, IBS Center for Soft and Living Matter, Ulsan, South Korea — When allowed to interact, oppositely charged polymers are known to form a variety of different phases ranging from soluble colloidal/nanoparticulate complexes, insoluble complexes, and liquid-like phase separated complex coacervates. The interactions in such complexes are of relevance to different fields such as industrial application of synthetic polyelectrolyte polymers, therapeutic nucleic acid delivery, and biology in order to understand formation and function of membraneless organelles in cells. Owing to their polyanionic nature, nucleic acids can form complex phases with positively charged polymers. Using a combination of experimental techniques, we explore such complexes in order to understand their structural organization, complex microenvironments, internal dynamics, and their response to changing extrinsic environment.

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