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**Complex
coacervate-based adhesives
and scaffolds**

**Wednesday, 11th September
12.00 p.m.**

CIC biomaGUNE - Seminar Room

The threads produced by velvet worms are remarkably sticky and stiff; the beak of a jumbo squid is extremely hard; and spider silk is incredibly tough. The extraordinary material properties found in these natural systems have been of interest to researchers for a long time. However, only recently, biologists discovered that a crucial element in the processing of many of these materials are coacervates. Complex coacervation is an associative liquid-liquid phase separation phenomenon driven by electrostatic attraction between oppositely charged macro-ions (e.g. polysaccharides, proteins etc.) and counterion release, resulting in a polymer rich aqueous phase in equilibrium with a polymer poor phase. For a given polyelectrolyte couple, depending on the salt concentration of the medium, a complex coacervate either behaves as a free-flowing viscoelastic fluid or a rigid polyelectrolyte complex solid or anything in between. This outstanding versatility has made polyelectrolyte complexes good candidates for a wide range of applications.

In the Kamperman group we are dedicated to improve and engineer complex coacervates to introduce novel advanced functional materials. In this presentation I will focus on our efforts to develop coacervate-based adhesive agents and inks for 3D bioprinting.