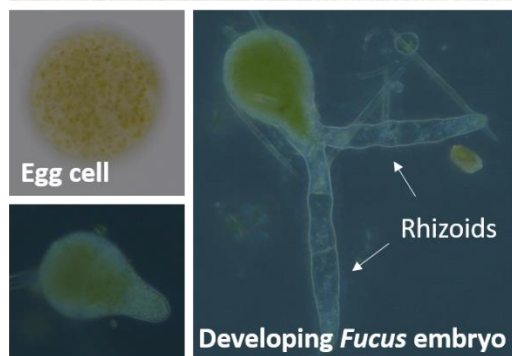


The Department of Sustainable and Bioinspired Materials (Director Prof. Dr. Silvia Vignolini) at the Max Planck Institute of Colloids and Interfaces in Potsdam, Germany, invites applications from outstanding young scientists for a

## PhD project on Underwater Adhesion of Brown algae *Fucus* sp. (m/f/d)

**THE PROJECT:** Similar to other sessile marine organisms, brown macroalgae form strong attachments to rocky substrates in order to resist drag forces produced by crashing waves. Therefore, they secrete a glue that is able to adhere underwater, a characteristic current man-made glues do not possess. This underwater glue is already secreted in the early development of brown algae in order to stick the fertilized egg to the substrate from which the algae will grow. In this project, we aim to understand the chemical and structural composition of this glue as well as to characterize its adhesive properties. The first step is to successfully cultivate the algae in the lab and analyze the secreted carbohydrates and polyphenols. Furthermore, we want to determine the adhesive properties of the developing holdfast after different time points and to different surface chemistries. The focus of this study is to characterize the molecular interactions between the various components on the surface. Insights into the brown algae adhesives can help to develop new more sustainable solutions for underwater glues relevant in medical and industrial applications.



**REQUIREMENTS:** The candidate should have a degree in Biochemistry, Chemistry or closely related fields with an outstanding profile, a strong background, and interests in

- Compositional, structural and mechanical characterization
- Understanding molecular-surface interactions
- Polysaccharides and Polyphenols

**The position is available starting in late 2023 or early 2024.**

To apply please follow the link:

<https://jobs.mpikg.mpg.de/jobposting/975e165d6a1165808fc437e3735c356e2f14f15b0>