



# Berliner Physikalisches Kolloquium

im Magnus-Haus, Am Kupfergraben 7, 10117 Berlin

Eine gemeinsame Veranstaltung der Physikalischen Gesellschaft zu Berlin e.V.,  
der Freien Universität Berlin, der Humboldt-Universität zu Berlin,  
der Technischen Universität Berlin und der Universität Potsdam  
– gefördert durch die Wilhelm und Else Heraeus-Stiftung –

Am Donnerstag, dem **7. Oktober 2021**, um **18:30 Uhr**

spricht

**Prof. Dr. Philipp Kukura**

**Physical and Theoretical Chemistry Laboratory, Department of  
Chemistry, University of Oxford, United Kingdom,**

über das Thema

**„Mass photometry: weighing molecules with light“**

Moderation: Karsten Heyne, Freie Universität Berlin

Interactions between biomolecules control the processes of life in health, and their malfunction in disease, making their characterization and quantification essential to our understanding of the underlying molecular mechanisms. I will introduce mass photometry, the accurate mass measurement of individual molecules in solution by light scattering, as a general approach for studying biomolecular mechanisms, bridging mass spectrometry and light microscopy. This unique combination of measurement principles and obtainable information results in broad applicability with the ability to accurately determine the relative amounts of species in complex mixtures without the need for labels or other sample modifications enabling study of interaction stoichiometries, energetics and kinetics. I will demonstrate the power of these measurements by revealing the molecular mechanisms, enabled by the measurement of the underlying physicochemical parameters, of fundamental processes in biology such as filament formation and self-assembly on membranes. These results establish mass photometry as a powerful, solution-based, label-free, yet single molecule method to quantify and thereby study biomolecular structure and interactions. In combination with future improvements in both technical capabilities and assays, mass photometry could make significant headway towards the ultimate goal of revealing biomolecular mechanisms directly at the molecular level.

Auch zu lesen im Internet: <http://www.pgzb.tu-berlin.de/>