

第15回講演会

〈MNTC特別セミナー〉

RESEARCH CENTER JUELICH

DR. SIMONE WIEGAND

2015年8月28日(金)

15:00~17:00

東海大学湘南校舎12号館1階

マイクロ・ナノ研究開発センター



Thermophoresis: how it can be used in Soft Matter systems

Simone Wiegand

Research Center Juelich, ICS – Soft condensed matter, D-52425 Juelich, Germany

It turns out that a simple non-equilibrium environment created by a temperature gradient can be used to monitor the reaction kinetics of large proteins with small substrate molecules. This is probably caused by a change in the hydration layer of the protein which is influenced by subtle conformations changes induced by the binding of the substrate molecule. To get a better understanding of phenomenon we investigated systematically various small molecules, microemulsions and colloids by a holographic grating method called infrared thermal diffusion forced Rayleigh scattering (IR-TDFRS). Looking at the various systems we can identify certain rules of thumb which will be discussed. Open questions such as the radial dependence of the thermal diffusion coefficient and its relation with the interfacial tension and charge effects are considered.

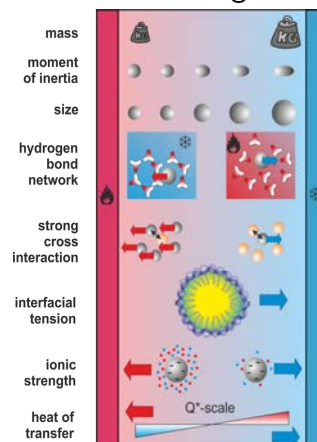


Figure 1 "Rules of thumb" influencing the thermophoretic motion of solute molecules

問合せ先：社会連携イノベーションセンター 熊田
(Ext_4790 Email_kumada@tokai.ac.jp)