

第 257 回化学コロキウムのお知らせ

日時：平成28年5月20日(金) 14:30~16:30

場所：首都大学東京11号館103室

演者：Ulf Olsson 教授

(Physical Chemistry, Lund University, Sweden)

演題：On Cellulose Dissolution and Gelation

Abstract: Cellulose is the World's most abundant biopolymer and an important renewable raw material for many materials. For applications like textile fibers it is necessary to first dissolve the cellulose pulp. However, dissolving cellulose turns out to be a challenge. This crystalline polymer is insoluble in most classical polar and non-polar solvents, but soluble in certain ionic liquids and also (partly) in concentrated NaOH. Replacing sodium with the larger and more hydrophobic/amphiphilic tetrabutyl ammonium cation, increases the solubility. Cellulose solutions can turn into gels. The reason for this appears to involve the issue of crystal polymorphism. While natural (wood) cellulose, so called Cellulose I dissolves, solutions may become supersaturated with respect to the more stable Cellulose II. Recrystallizing polymers from semi-dilute solutions may lead to gelation as chains can participate in more than one nucleus.

連絡先：首都大学東京 理工学研究科 分子物質化学専攻 加藤 直 (内 3435)

kato-tadashi@tmu.ac.jp