2022年度 物質生命理工学科コロキウム

上智大学 理工学部 物質生命理工学科 主催

理工学部・理工学振興会 共催

Beyond segmental motion
– Influencing ion transport in unexpected (?) ways –

Dr. Jonas Mindemark (Uppsala University)

2022年 5月14日（土曜日）　13:00-14:30

場所：4-475

要旨

Currently established models on ion transport in polymer matrices emphasize how the transport of cations is coupled to the segmental motions of the amorphous chains. However, recent efforts utilizing a broader range of materials have indicated that it is in fact a “trifecta” of effects that govern cation movement, adding the polymer architecture and the coordination between the cations and the polymer chains on top of the segmental dynamics. This realization has allowed us to approach ion conduction in polymers from new angles, and we have begun the work to map the influence of these factors on the ion transport dynamics of the system. Through the use of new methodology to study the interaction strength, electrophoretic NMR to get reliable data on the ion dynamics, molecular dynamics (MD) simulations and a range of materials with different coordination properties, we are starting to uncover the details of these effects on ion dynamics. This has enabled us to explain previously observed trends, predict behavior that is difficult to assess experimentally, and will eventually also enable us to complement the theoretical framework to a complete model of ion transport in amorphous polymer matrices.

学外の方の聴講歓迎・申込不要・参加無料

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