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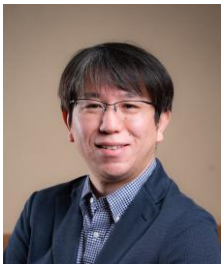

Alkyl-π Liquids Toward Deformable Vibration Sensors

The development of optoelectronically-active soft materials draws attention to the application of soft electronics. Solvent-free alkyl-π liquids at room temperature, created by modifying a π-conjugated unit with bulky yet flexible branched alkyl chains, are promising functional soft materials. The π-conjugated units responsible for optoelectronic functions are protected by insulating alkyl chains, which allow the inherent optoelectronic abilities of π-conjugated molecules to be expressed even in a bulk liquid state. Various optically functional liquids have been developed, including those with advanced luminescence,[1] singlet oxygen generation,[2] and so on. Meanwhile, we have succeeded in developing liquid electrets that stably hold electrostatic charges both inside and on the surface of alkyl-π liquids, along with freely deformable electret devices,[3] especially weak vibration sensors.[4] In this presentation, I will mainly focus on studies of liquid electrets.

1) Guo, Z., Pan, C., Shinohara, A., Nakanishi, T., *Sci. Technol. Adv. Mater.*, **26**, 2515007 (2025).

2) Gupta, R. K., Nakanishi, T., Payne, D. T., *Chem. Eur. J.*, **31**, e202500739 (2025).

3) Ghosh, A., Nakanishi, T., and others, *Nat. Commun.*, **10**, 4210 (2019).

4) Tateyama, A., Nagura, K., Yamanaka, M., Nakanishi, T., *Angew. Chem., Int. Ed.*, **63**, e202402874 (2024).