

1E07

## Floquet Engineeringによる凝縮相分子系の量子ダイナミクス制御

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### Control of Quantum Dynamics in Condensed-Phase Molecular Systems by Floquet Engineering

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**【Abstract】** Controlling physical properties of various types of quantum systems holds the key to many promising quantum technologies including quantum computation, quantum simulation, and quantum sensing, etc. How that quantum control can be used to manipulate such a noisy open quantum system as systems of molecules in condensed phase is, however, still elusive due to the effects of the system's strong coupling with a huge number of dynamic degrees of freedom in the environment. In this presentation, I will show that this challenging task can be accomplished by exploiting a peculiar combination of quantum and classical effects of the controlling protocol. In particular, the so-called Floquet engineering, in which the system's Hamiltonian is time periodically modulated, can be used to enhance the function, probe the dynamics of the environment [1], and create new features in condensed-phase molecular systems [2].

#### 【参考文献】

[1] N. T. Phuc and A. Ishizaki *J. Phys. Chem. Lett.* **9**, 1243 (2018).

[2] N. T. Phuc and A. Ishizaki, *Control of quantum dynamics in condensed-phase molecular networks: a combination of quantum and classical effects* (in preparation).