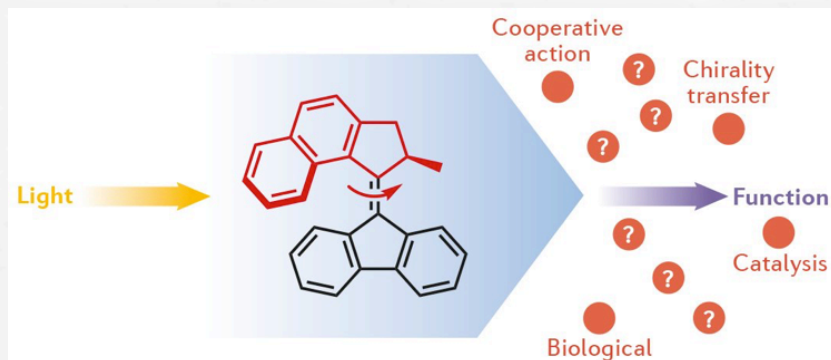


## 講演会のお知らせ

# Light-driven molecular motors: Dynamic control of binding, self-assembly, and rotary motion

Prof. Dr. Sander J. Wezenberg

Stratingh Institute for Chemistry, University of Groningen



日時：7月27日(金)

14:30 ~ 16:30

場所：R1棟 第1会議室

連絡先：福島 孝典 (5220)

### ABSTRACT and REFERENCES

Stimuli-responsive molecular systems that mimic the highly complex and dynamic functions found in nature (e.g. allostericity, signal processing, motion and transport) are receiving major interest and will form the basis of future nanomachines. In this context, molecular motors that are activated by light are emerging as powerful tools to control the properties of materials as well as biological functions.<sup>[1]</sup> Light offers the advantage that it can be applied with high spatiotemporal control without producing waste.

In this presentation, synthetic systems in which control of motion at the molecular level is coupled to specific functions will be discussed. Particular focus is on the use of light-driven molecular rotary motors as multi-state switches for the modulation of receptor-ligand interactions and self-assembly processes.<sup>[2]</sup> Finally, strategies to regulate the speed of rotation and to red-shift the excitation wavelength of these molecular motors are illustrated.<sup>[3]</sup>

[1] T. van Leeuwen, A. S. Lubbe, P. Štacko, S. J. Wezenberg, B. L. Feringa, *Nat. Rev. Chem.* **2017**, *1*, 0096.

[2] S. J. Wezenberg, M. Vlatković, J. C. M. Kistemaker, B. L. Feringa, *J. Am. Chem. Soc.* **2014**, *136*, 16784; M. Vlatković, B. L. Feringa, S. J. Wezenberg, *Angew. Chem. Int. Ed.* **2016**, *55*, 1001-1004; S. J. Wezenberg, B. L. Feringa, *Nat. Commun.* **2018**, in press.

[3] S. J. Wezenberg, K.-Y. Chen, B. L. Feringa, *Angew. Chem. Int. Ed.* **2015**, *54*, 11457; A. Faulkner, T. van Leeuwen, B. L. Feringa, S. J. Wezenberg, *J. Am. Chem. Soc.* **2016**, *138*, 13597.