# Symposium Quantum Optics and Quantum Information with Rigid Rotors (SYQR)

jointly organised by
the Quantum Information Division (QI),
the Quantum Optics and Photonics Division (Q), and
the Molecular Physics Division (MO)

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This symposium aims at highlighting the potential offered by the intrinsic anharmonicity and non-commutativity of quantum rigid rotor dynamics for future technologies. Note that the associated session MO18/Q52/QI33 takes place already on Thurday, 14:30–16:30, in F102.

## Overview of Invited Talks and Sessions

(Lecture hall E415)

### Invited Talks

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| SYQR 1.1 | Fri | 11:00–11:30 | E415 | **Femtosecond timed imaging of rotation and vibration of alkali dimers on the surface of helium nanodroplets** — •Henrik Stapelfeldt |
| SYQR 1.2 | Fri | 11:30–12:00 | E415 | **Quantum toolbox for molecular state spaces** — Eric Kubischta, Shubham Jain, Ian Teixeira, Eric R. Hudson, Wesley C. Campbell, Mikhail Lemeshko, •Victor V. Albert |
| SYQR 1.3 | Fri | 12:00–12:30 | E415 | **Coherent rotational state control of chiral molecules** — •Sandra Eibenberger-Arias |
| SYQR 1.4 | Fri | 12:30–13:00 | E415 | **Optically levitated rotors: potential control and optimal measurement** — •Martin Frimmer |
| SYQR 2.1 | Fri | 14:30–15:00 | E415 | **Rotational optomechanics with levitated nanodumbbells** — •Tongcang Li |
| SYQR 2.2 | Fri | 15:00–15:30 | E415 | **Quantum rotations of nanoparticles** — •Benjamin A. Stickler |
| SYQR 2.3 | Fri | 15:30–16:00 | E415 | **Quantum control of trapped molecular ions** — •Stefan Willitsch |
| SYQR 2.4 | Fri | 16:00–16:30 | E415 | **Full control over randomly oriented quantum rotors: controllability analysis and application to chiral observables** — •Monika Leibscher |

### Sessions

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| SYQR 1.1–1.4 | Fri | 11:00–13:00 | E415 | **Quantum Optics and Quantum Information with Rigid Rotors 1** |
| SYQR 2.1–2.4 | Fri | 14:30–16:30 | E415 | **Quantum Optics and Quantum Information with Rigid Rotors 2** |