



Canadian Association  
of Physicists

Association canadienne  
des physiciens et physiciennes

Contribution ID: 4552

Type: **Invited Speaker** / **Conférencier(ère) invité(e)**

## Designing protein-based artificial molecular motors

*Tuesday 28 May 2024 15:15 (30 minutes)*

Molecular motors are nanoscale machines capable of transducing chemical energy into mechanical work. Inspired by biology, our transnational team has conceived different designs of artificial motors comprised of protein building blocks –proteins, because these are Nature’s choice of such functional units. We have recently characterized the motility of one of these designs –the Lawnmower –and found that its dynamics demonstrate motor-like properties. I’ll describe the burnt-bridge ratchet principle of Lawnmower motility and our simulations and experiments that explore its motion.

Work in my group on this project led by PhD graduate Chapin Korosec, with funding from NSERC.

Publication: Korosec et al., Nature Communications 15, 1511 (2024)

### Keyword-1

Molecular motors design

### Keyword-2

Active matter

### Keyword-3

Instrumentation

**Author:** FORDE, Nancy (Department of Physics, Simon Fraser University)

**Presenter:** FORDE, Nancy (Department of Physics, Simon Fraser University)

**Session Classification:** (DPMB) T2-3 Active Matter | Matières actives (DPMB)

**Track Classification:** Technical Sessions / Sessions techniques: Physics in Medicine and Biology / Physique en médecine et en biologie (DPMB-DPMB)