

The caption of Movie. S1:

Movie. S1. Movement of micro particle actuated by a bio-syncretic tweezer with *Pandorina morum* cells in light-spot induced mode.

The caption of Movie. S2:

Movie. S2. Movement of micro half-cylinder actuated by a bio-syncretic tweezer with *Chlamydomonas reinhardtii* cells in geometric shape-induced mode.

The caption of Movie. S3:

Movie. S3. Movement of micro half-cylinder actuated by a bio-syncretic tweezer with *Pandorina morum* cells in geometric shape-induced mode.

The caption of Movie. S4:

Movie. S4. Rotation of micro gear with wide teeth actuated by a bio-syncretic tweezer with *Pandorina morum* cells in geometric shape-induced mode.

The caption of Movie. S5:

Movie. S5. Rotation of micro gear with narrow teeth actuated by a bio-syncretic tweezer with *Pandorina morum* cells in geometric shape-induced mode.