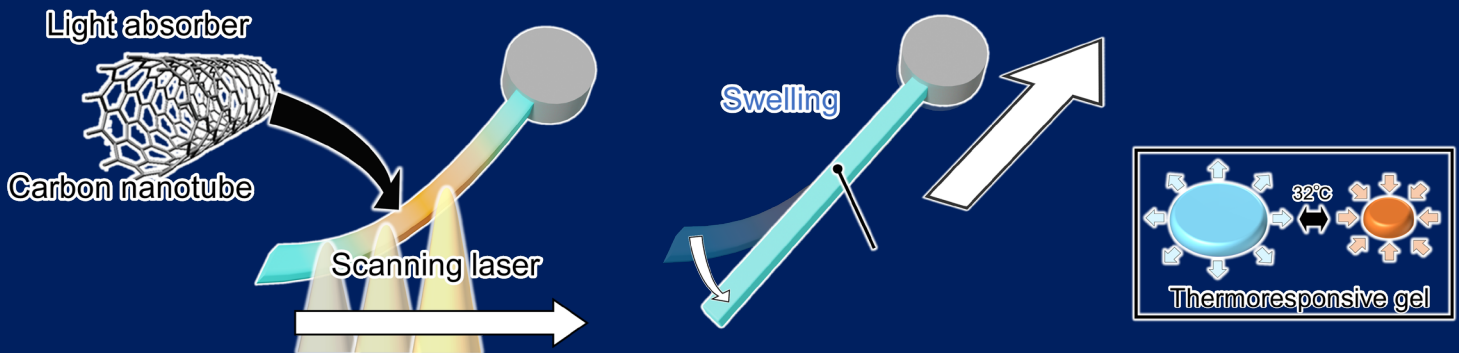


微生物模倣型ソフトマイクロロボットの創成

研究代表者 早川 健 研究員

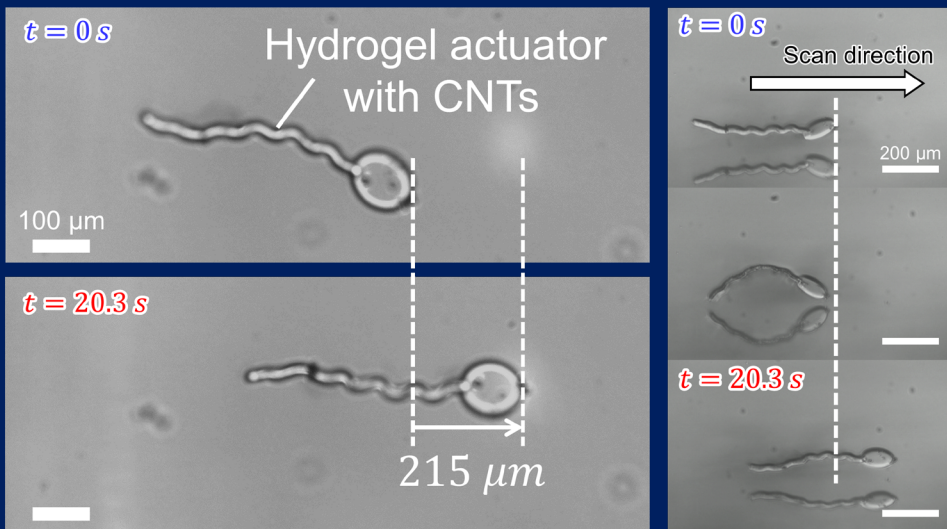
Concept of micro-gel robot



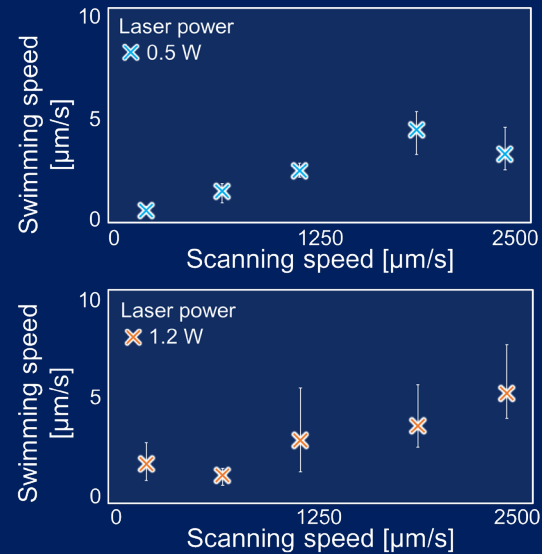
Purpose

Realize swimming of microrobot and observe flow around them

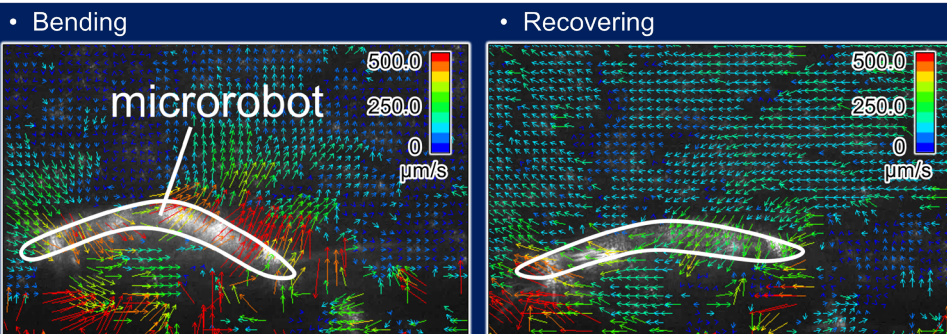
Swimming of micro-gel robot



Swim vs scan speed



Analyze of flow



Design background

Reynolds number

$$Re = \frac{LU}{\nu} = \frac{L^2\omega}{\nu}$$

L : Characteristic length
 U : Characteristic velocity
 ν : Kinematic viscosity
 ω : angular frequency

Euglena



Paramecium



$Re \sim 10^{-2}$

$Re \sim 10^{-1}$

Conclusion

Succeeded in swimming of microrobot