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**Enhanced swimming motion of nematode in a non-Newtonian fluid** JIN-SUNG PARK, Department of Physics and School of Engineering and Applied Sciences, Harvard University, DAEYEON KIM, JENNIFER SHIN, School of Mechanical, Aerospace and Systems Engineering, Division of Mechanical Engineering, Korea Advanced Institute of Science and Technology, DAVID WEITZ, Department of Physics and School of Engineering and Applied Sciences, Harvard University — Small organisms navigate their complex terrestrial substrates, which have the property of non-Newtonian complex fluids. Although a large body of literature exists on the locomotion of these organisms, the previous studies are mostly limited in simple Newtonian systems. Here we present experimental results on the locomotion of *Caenorhabditis elegans* (*C. elegans*), especially investigated in colloidal suspensions that exhibit the behavior of shear thinning fluid in the range of shear rate of undulating nematode. Interestingly, we observed that the swimming speed of nematodes was gradually increased with an increase of particle volume fraction in suspensions, and this enhanced motion of nematode is closely related to the shear thinning in the fluid viscosity.

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