

Supporting Information

Ultrasmall Pt NPs-modified Flasklike Colloidal Motors with High Mobility and Enhanced Ion Tolerance

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Video S1: The quasi-linear motion of Pt-FCMs in 5% H₂O₂.

Video S2: The quasi-circular motion of Pt-FCMs in 5% H₂O₂.

Video S3: The motion of Pt-FCMs in 50% fetal bovine serum containing
5% H₂O₂.

Video S4: The motion of Pt-FCMs in 5% H₂O₂ with CTAB.

Video S5: The motion of Pt-FCMs in 5% H₂O₂ with SDS.

Table S1: Summary of chemically powered flasklike colloidal motors

Materials	Shape	Size (nm)	Propulsion mechanism	Fuel	V ($\mu\text{m/s}$) or D ($\mu\text{m}^2/\text{s}$)	Velocity in bodylengths per second	Ref.
Pt/carbonaceous	Flask	766	Self-diffusiophoresis	5% H_2O_2	23.32 $\mu\text{m/s}$	30	This work
Pt/carbonaceous	Flask	850	Bubble propulsion	5% H_2O_2	15 $\mu\text{m/s}$	17.6	22
Pt/carbonaceous	Flask	1080	Self-diffusiophoresis or bubble propulsion	5% H_2O_2	18.81 $\mu\text{m/s}$	17.41	23
Enzyme/carbonaceous	Flask	844	Self-diffusiophoresis	400 mM glucose	3.89 $\mu\text{m/s}$	4.6	28
Pt/ SiO_2	Flask	720	Bubble propulsion	5% H_2O_2	18.2 $\mu\text{m}^2/\text{s}$ (D)	\	29
Pt/ SiO_2	Flask	350	Bubble propulsion	3% H_2O_2	68.8 $\mu\text{m/s}$	196	30
Enzyme-Au/ SiO_2	Tadpole-like	320		1.5% H_2O_2	3.11 $\mu\text{m}^2/\text{s}$ (D)	\	31
Pt/polymersomes	Stomatocyte	152	Self-diffusiophoresis and bubble propulsion	0.35% H_2O_2	23 $\mu\text{m/s}$	151	32
Pt/polymersomes	Stomatocyte	341	Self-diffusiophoresis and bubble propulsion	0.017% H_2O_2	35 $\mu\text{m/s}$ (30°C)	102	33
MnO_2 /polymersomes	Stomatocyte	ca.400	Bubble propulsion	0.17% H_2O_2	20 $\mu\text{m/s}$	50	34