Electronic supplementary information (ESI) for PCCP.

## Supporting Information

# Chemical magnetism – surface force to move motors

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# 1. Supporting Videos

**Video S1:** Movement of paramagnetic nanoparticles $Fe_3O_4$ in the magnetic field of CM ( $Cu-Zn$, $CoSO_4$). The video is accelerated by a factor of 9 ×.

**Video S2:** Movement of paramagnetic nanoparticles $Fe_3O_4$ in the magnetic field of CM ($Cu-Al$, $CuSO_4$). The video is accelerated by a factor of 8 ×.

**Video S3:** Movement of swimmer $Fe-Ni$ in a non-uniform magnetic field on a copper sulfate solution surface. The video in real time.

**Video S4:** Movement of swimmer $Fe-Ni$ in a non-uniform magnetic field on a copper sulfate solution surface when the swimmer is turned by $180^{\circ}$. The video is accelerated by a factor of 2 ×.

**Video S5:** Movement of swimmer $Fe-Ni$ in a non-uniform magnetic field on a copper sulfate solution surface when changing the polarity of the coil. The video in real time.

**Video S6:** Movement of swimmer $Fe-Ni$ in a non-uniform magnetic field on a copper sulfate solution surface when changing the polarity of the coil and turning the swimmer by $180^{\circ}$. The video is accelerated by a factor of 2 ×.

## 2. Supporting figure

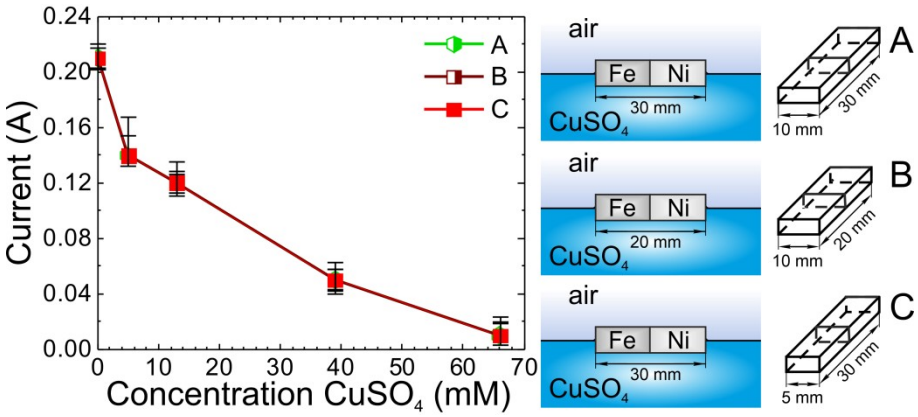


**Fig. S1.** Dependence of the minimum current through the coil, corresponding to the start of motor movement, on the geometric dimensions of the CM ($22$ ℃, copper sulfate, $Fe-Ni$, coil №1).