

Self-powered microbots towards a “Fantastic Voyage”

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Self-powered micro-motors are currently subject of a growing interest due to their visionary but also potential applications in robotics, biosensing, nanomedicine, microfluidics, and environmental field [1]. These micromotors are autonomous since they do not need external sources of energy in order to move. Instead, self-powered microrobots propel by decomposition of the fuel where they swim.

These tiny motors swim through the water and can clean up contaminants or can swim through blood to one day transport medicines to a targeted part of the body -like taken from a science fiction movie Fantastic Voyage-.

Those artificial nanomotors act collectively [2] reacting to external stimuli like chemotactic behaviour [3] and are capable to clean polluted water [4,5]. Future operations of autonomous intelligent multi-functional nanomachines will combine the sensing of hazardous chemicals using bio-inspired search strategies. With continuous innovations we expect that man-made nano/microscale motors will have profound impact upon in several fields such as drug delivery, biosensing and environmental remediation, among other visions.

References

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