

INVITATION (MASTER'S PROJECT)

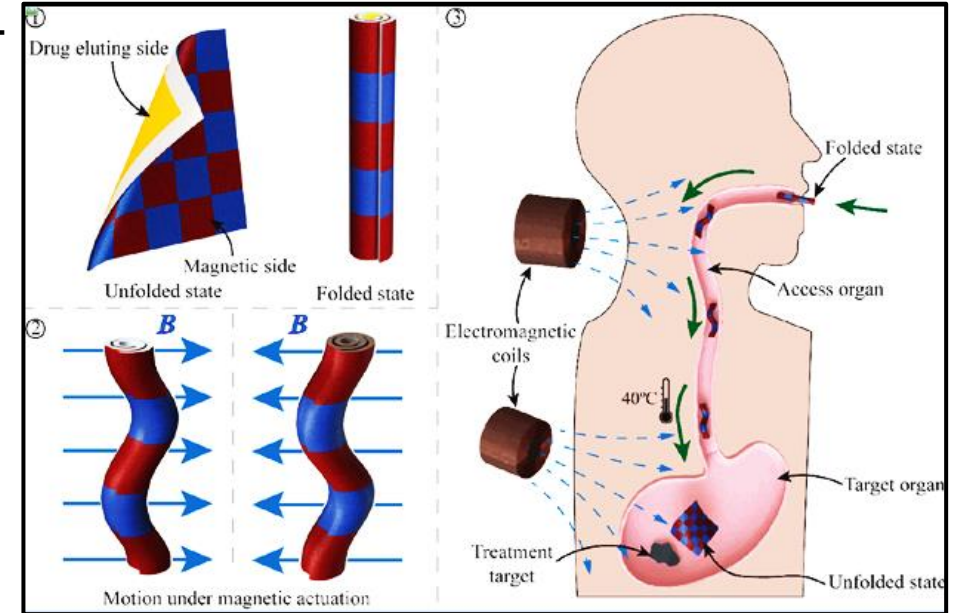
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Project title: Design of an origami-inspired magnetically-actuated bio-compatible robot designed for gastrointestinal surgery

Background: The availability of more reliable robotic technologies for the miniaturization of size and integration of functions has allowed to conceive and develop robotic devices for the early screening of the digestive tract, with dramatic potential advantages for patients, endoscopists, and healthcare systems. This particular robot should be able to enter the body through a small incision, move to a remote site within the body, transport necessary cargo, perform a specific surgical procedure, and if necessary, be retrieved with no adverse effects to the patient.

Tasks:

- Design a small-scale, multi-functional, human-safe robot capable of substantial shape-change
- Shape transformation may be inspired by origami-type structures
- Fabricate a mechanical structure that is deployable to perform a surgical function (cutting, puncturing, latching, etc.)
- Demonstrate working prototype in benchtop experiments



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