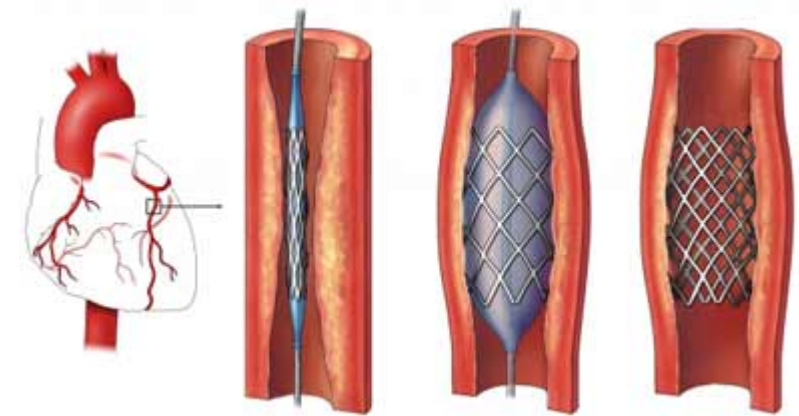


BACHELOR'S PROJECT INVITATION

SUPERVISORS: V. KALPATHY VENKITESWARAN¹ & PROF. S. MISRA²

Project title: Origami-based design of flexible surgical capsule

Background: Origami-based engineering allows the development of flexible devices that are capable of dramatic shape change. We aim to harness the advantages of origami design and develop new tools for surgical interventions. Example applications include stenting, diagnostic imaging and drug delivery. This project will focus on optimizing the mechanical structure of an origami capsule by identifying patterns that enable flexibility. The suitability of the design to minimally invasive surgical procedures will be considered.



Stenting in arteries

Tasks:

- Survey literature on origami patterns
- Conceptual design of surgical capsule
- Calculations and/or simulations to develop working designs
- Fabrication of prototypes using paper and 3D printing
- Experiments with phantom blood vessels or organs



Shape-changing origami structures

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