

Master Thesis Research Opportunity

Surface Finishing of Biodegradable Stents

The objective of this research is to use Magnetic Abrasive Finishing (MAF) to improve the surface quality of biodegradable stents. A biodegradable stent opens a narrowed arterial vessel and then dissolves after the vessel is formed into the desired shape. The stent surface needs to be smoothly finished to prevent damage to the arterial vessel. This project involves the development of novel finishing processes to smooth the entire stent without degrading its mechanical properties. This includes the customization of existing equipment and surface finishing experiments.

The research agenda includes the following:

- a) Perform surface finishing experiments.
- b) Analyze the material removal mechanism.
- c) Characterize the corrosion resistance of stents and determine the effects of tool motion on the surface roughness and mechanical properties.
- d) Prepare a final report.

This project challenges and breaks through the limitations of existing technologies. It can only be successful through the determination and perseverance of all members of the project team, so self-motivation is highly desired. If you enjoy hands-on design projects and are interested in being a part of this research, please contact me via e-mail with your resume. If you have any questions, please contact me.

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