

Low-Temperature Plasma for Treatment of Endocarditis & Atherosclerosis

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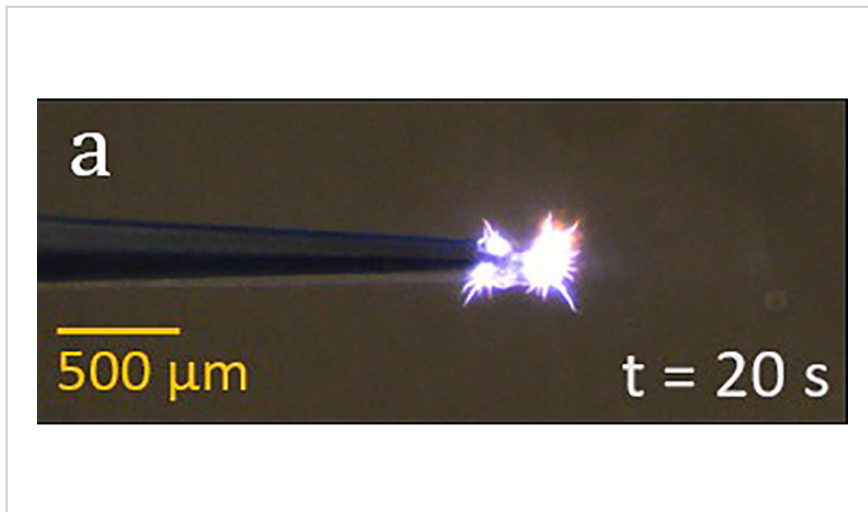


Fig. (a): Image of plasma discharge

Technology Summary

Endocarditis and atherosclerosis are common cardiovascular (CV) maladies. Bacterial endocarditis often results from the presence of biofilms on prosthetic implants in the CV system (e.g. prosthetic valves, stents, etc.). Often antibiotics are unsuccessful in treating endocarditis and atherosclerosis remains difficult to treat. A less invasive option for treating these CV related ailments is the biological application of low-temperature corona discharge (LTP), referred to as plasma medicine. This new field is being recognized as having vast potential to solve biomedical problems through a physics- and engineering-based approach. This invention is the first to use LTP to treat infectious biofilms, thrombus control, and atherosclerosis through controllable, localized production of reactive species in liquids such as human blood.

Application & Market Utility

This invention is the application of LTP production in liquids, such as blood, that results in the generation of chemically-reactive species that can treat infectious bacterial growths on tissue and prosthetic biomedical implants in the cardiovascular (CV) system such as coronary stents and prosthetic heart valves. Thereby, the invention is a treatment that is less-invasive than surgical procedures. Moreover, the method of the invention results in no thermal effect, meaning that LTP can be applied to living tissue without thermal damage.

Next Steps

The research team seeks funding for future development, collaboration, and licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Investment | Licensing | Research

Keywords

- Low-temperature plasma
- reactive oxygen
- catheter
- atmospheric plasma

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