TECHNOLOGY

Teleoperated Robotic System for Image Guided Radiofrequency Ablation and Biopsy

OVERVIEW

This invention will lead to the development of a multi-degree of freedom, tele-operated robotic system. This system will be compatible with any imaging modality such as, but not limited to, Magnetic Resonance Imaging, for performing radio frequency ablation, biopsy or any other intervention while under continuous image guidance. The robotic system will be operated using a haptic (sense of touch) feedback device to obtain force feedback from the tissue that is biopsied or RF ablated. The system produces images (either continuously or on demand) to ensure biopsy and/or RF ablation accuracy.

In one such embodiment of this system, the robot performs breast biopsy under the teleoperated control from the haptic feedback device while the patient breast is simultaneously imaged. On successful completion of the biopsy and identification of tumor, the RF ablation tool attached to the robot's end-effector can be teleoperatively guided by the medical personnel to the location within the breast for ablation to provide therapeutic intervention.

The goal of this invention is to be able to perform biopsy followed by therapeutic intervention in "one session" during continuous MRI guidance.

CONTACT INFO

UM Ventures
0134 Lee Building
7809 Regents Drive
College Park, MD 20742
Email: umdtechtransfer@umd.edu
Phone: (301) 405-3947 | Fax: (301) 314-9502

Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Biological
- Robotics
- Surgical devices

EXTERNAL RESOURCES

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