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## The clinical trial study of microwave thermal ablation robot

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Microwave(MW) thermal ablation is a high and new technology emerging through the combination of modern physics and medicine in the 1970s. It has been widely used to cure benign and malignant tumors since the 1990s when this technology was put into use in the clinic. However, inaccurate manual placement of the ablator tool and the resulting skill requirement of the surgeon limit further application of the thermal ablative therapy. Compared with the manual procedure, the robotic-assisted surgical system is an appealing alternative technique, enabling the surgeon to perform consistent, accurate operation with improved treatment effectiveness. Moreover, the MW thermal field distribution should be modelled to identify appropriate MW intensity and coagulation time for the treatment, ensuring that the complete coagulated necrosis volume will cover the entire tumour. Therefore, a medical robotic system capable of precise needle placement and accurate estimation of the MW thermal field distribution is desired for improved MW ablation of tumours. This presentation briefly introduces a few robotic systems in aspects including diagnostics, navigation, telesurgery, medical robotics, virtual and augmented reality.

### Biography

Hou Rui has been a doctor working in the Ultrasound Department of Si Ping Central Hospital since 2001. She got Master Degree of Medical Imaging and Nuclear Medicine in Da Lian Medical University, P.R. China. She has been Visiting Physician in ultrasound diagnostics department, People's Liberation Army General Hospital, Beijing, and Chinese Academy of Medical Sciences Cancer Institute / Cancer Hospital, Beijing, and visiting scholar in Prince of Wales Hospital, Chinese University of Hong Kong, P.R. China.

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