Abstract

An Intelligent Apparatus for Cancer Visualization and Localization

The present invention relates to an intelligent cancer visualization and localization apparatus to help surgeon finding cancer and then making a surgical plan and perform the therapy for the cancer safely, accurately and effectively. The apparatus comprises three functional components: image reconstruction unit, robotic manipulator, and floating table. Any medical images such as from ultrasound transducer, CT, MRI, PET and so on with DICOM format can be collected or imported into the image reconstruction unit by means of robotic manipulator to form a three dimension model. The three dimension reconstructed image can be registered by means of fixed markers in the image space and transformed into the physical space, such that the detail cancer information can be visualized and localized clearly. The cancer information can be used real-time to guide the surgical procedure for both diagnosis and therapy. The information can also be saved in digital format to review later, which can perform an effective procedure for active surveillance on the cancer and perform the best procedure for the cancer.

[Fig 1]