

6th International Conference and Exhibition on

Materials Science and Engineering

September 12-14, 2016 Atlanta, USA

The design, synthesis and application of microwave susceptible agents for tumor microwave thermotherapy based on confinement mechanism

Xianwei Meng

Chinese Academy of Sciences, China

As the technology developed, thermal therapy of tumors has been widely applied in clinical field. Especially, the microwave thermal therapy of tumors has attracted much interest recently due to the maneuverability, faster heat generation from microwave radiation, depth of penetration in tissues, less susceptibility to local heat tissues and perfect ability of killing tumor cells. Because it is difficult to limit the microwave into tumor region without damaging normal tissues, the microwave heating dose cannot be controlled accurately during the microwave thermal therapy procedure. This greatly restricts the development of microwave thermal therapy technology. Based on the confinement efficiency, we packaged microwave susceptible unit into hollow micron or nano-sized structure, to enhance the microwave thermal conversion efficiency and resolved the difficulty of targeted heating tumor region. Simultaneously, we combined CT imaging unit for CT imaging guided microwave thermal therapy, which can control the microwave heating dose accurately.

Biography

Xianwei Meng received his PhD in Biomedical Engineering from the Sichuan University in 2001. He became an Assistant Professor at the Technical Institute of Physics and Chemistry, Chinese Academy of Sciences in 2001 and Associate Professor in 2006. He holds 25 patents and has published over 100 journal articles. His research focuses on the synthesis and applications of nanomaterials.

mengxw@mail.ipc.ac.cn**Notes:**