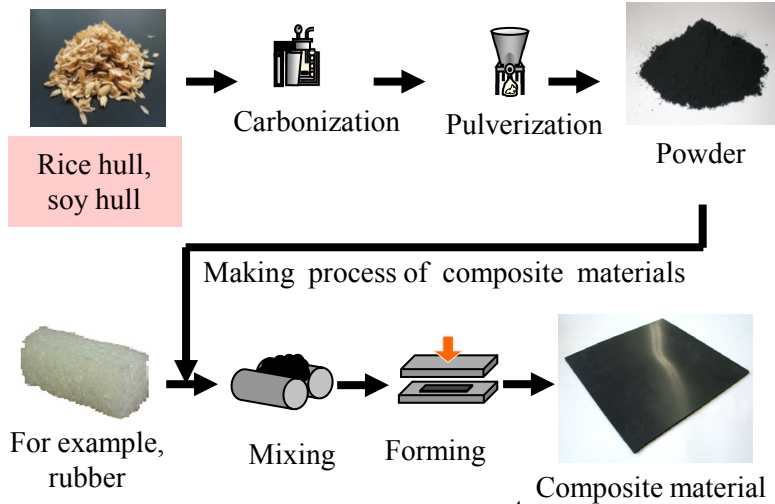
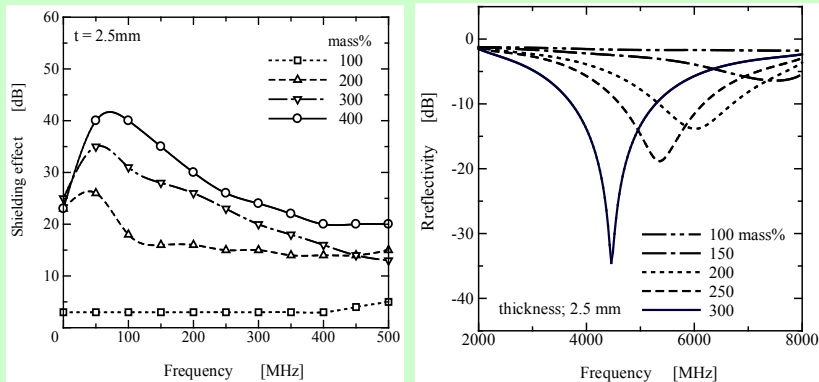


Development of Plant Origin Carbon Materials

Professor Hiroshi Iizuka



Electromagnetic Shielding and Absorption Properties



Content :

Many amount of **agricultural by-products** (residues), for example the rice bran, the rice hull, the soy hull and so on, are produced in our consuming society. We are focusing on the useful utilization of these residues, especially the rice hull and the soy hull.

The plant has an unique porous structure and contains some mineral constituents. As shown in the upper part of the figure, our laboratory has manufactured some **porous carbon powders** from the rice hull and the soy hull. The carbonization is performed at high temperature in nitrogen atmosphere. The manufactured powder is then mixed with rubbers or plastics to make the composite materials. The fascinating point is that they are the **plant origin carbons**.

Generically, the carbon has some unique properties such as the lightness, the excellent friction and electric conductivity properties. These properties are retained in the plant origin carbon powders. The **electromagnetic wave shielding and absorption** properties are shown in the lower part of the figure. High shielding effect of about 40dB is achieved at the radio frequency band. The high absorption property is also utilizable for industrial application.

Yamagata University Graduate School of Science and Engineering
Research Interest : Strength of Materials

E-mail : h-iizuka@yz.yamagata-u.ac.jp

Tel : +81-238-26-3212

Fax : +81-238-26-3212

HP : http://iizukalab_hp.yz.yamagata-u.ac.jp/

