

**DR. ISMAYADI ISMAIL**

Research Officer, Nanomaterials Synthesis and Characterisation Laboratory

Expertise: Magnetic Materials, EM-wave Absorbing Materials, Carbon Nanostructures

Email: ismayadi@upm.edu.my

Phone: +603.9769.7546



ORCID

Google Scholar: [Link](#)

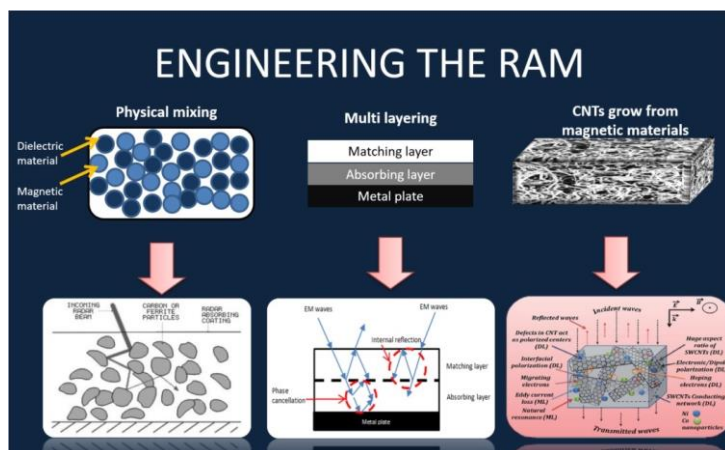
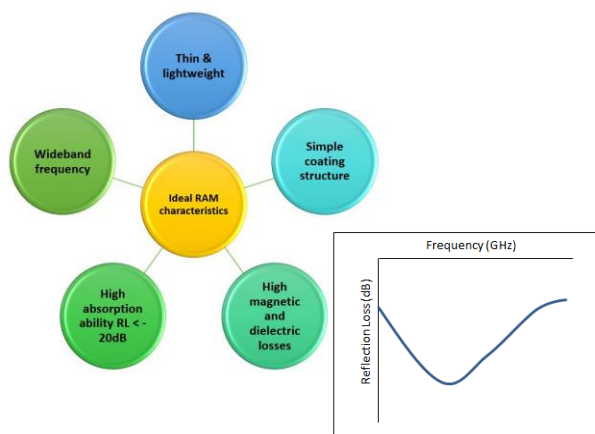
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RESEARCH HIGHLIGHTS

1. STEALTH TECHNOLOGY: Fabrication and Characterisation of Microwave Absorbing Nanomaterials-Containing Paint

Radar absorbing materials (RAM) are particularly used in stealth technology for antiradar system by suppressing the reflected EM energy incident on the surface of the absorber and dissipating the EM wave into heat. The more effective RAM, the reflected EM wave become lower to be detected by radar (more invisible). Radar absorbing material (RAM) is designed aiming to improve their performance in terms of high absorption level by effectively reduce the reflection of electromagnetic signals, operating in a broad frequency range, have simple coating-layer structure, thin and lightweight as possible.



2. Bio-based Carbon Nanotubes (CNT) Cotton for Smart Textiles

We have recycled waste cooking oil as carbon source for synthesizing carbon nanostructures via CVD floating catalyst method by using waste cooking oil as the carbon source, ferrocene as the catalyst and thiophene as the growth rate enhancer. A process for bio-based CNT cotton synthesis has been developed in a close collecting chamber via a batch process. The CNT cotton was then used to develop an improved microstrip patch antenna. The bio-based CNT cotton was pressed and turned into film form. It was then cut into a certain shape and used as microstrip patch antenna. Variations of parameter were used to study its performance in absorbing the electromagnetic signal. The CNT cotton can also be used as a host for embedding other sensing nanomaterials and works as smart textiles.

