

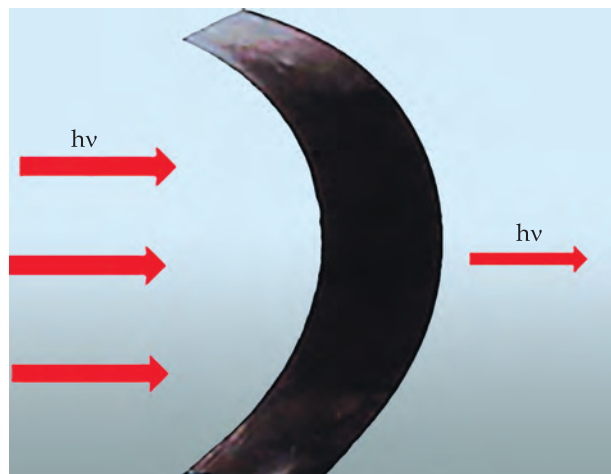
## HYBRID FLEXIBLE FILM COMPOSITE MATERIALS FOR ELECTROSTATIC AND ELECTROMAGNETIC PROTECTION

### Areas of Application

The materials are designed for protection of environment, electronic equipment, personnel, and information storage devices from electromagnetic fields and static electricity

### Specification

The materials contain conductive polymer, carbon nanotubes, and magnetic nanoparticles, which are distributed in commercial polymer matrix; 1 mm-thick films of these composite materials show a high conductivity ( $\sim 1.3 \text{ S/cm}$ ), an electromagnetic shielding efficiency up to -45 dB within the range of 10 MHz-20 GHz, and a quite low specific gravity



Scheme of electromagnetic shielding by composite material film (photo of real film sample)

### Advantages

These film materials do not have analogs in Ukraine. As compared with foreign counterparts, in particular, the fabrics containing metallic threads, these materials are notable for a small content of conductive and magnetic components, a low specific gravity, percolating electrical properties, and a significant absorption of electromagnetic radiation

### Stage of Development.

#### Suggestions for Commercialization

IRL3, TRL4

Manufacture of trial samples, tests in customer operating conditions, support in design and organization of manufacture, upon request

### IPR Protection

IPR1, IPR3

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