

FAPERIN, S.L.

AN ELECTRIC CONDUCTIVE PLASTIC FOR THE AUTOMOTIVE INDUSTRY

Formulating and processing conventional injection moulding plastics with improved electrical properties

Within the context of the EU Polycond project, the main work was aimed to improve the electrical properties of plastics without compromising the physical ones. It was obtained adding carbon nanotubes (CNT) via melt compounding to different thermoplastics. The project objectives were to reach final parts with electrostatic dissipative properties (ESD) and electromagnetic interference shielding (EMI) properties. AIMPLAS took on the challenge of formulating compounds with different polymers that final converter companies like Faperin injected as final parts, as case study to check the reliability of the



materials. The polymer compounds that were developed achieved optimal electrical properties without compromising their physical properties, at a competitive Price and with the capacity to be processed by conventional equipment. To achieve this good electrical properties CNT, stainless steel fibres (SSF) or graphites were melt compounded with different blends of intrinsically conducting polymers (ICPs) and conventional polymers (specially polypropylene). FAPERIN's interest lay mainly in the metal parts of car wing mirrors. These metal elements were replaced with PP with ICP and carbon nanotubes in order to reduce weight, increase recycling potential and give good anti-static properties. The project also developed parts for medical equipment, cases for military radios and earth elements for electrical sockets.