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**National Research&Development Institute for Chemistry
and Petrochemistry - ICECHIM Bucharest**

RO.153.

Title Phonoabsorbant structure from polyurethane wastes
Authors Rodica – Mariana Ion, Laurentiu Marin, Nelu Ion
Institution ICECHIM, Bucharest
Patent no. A 2020-00057/07.02.2020

Description The invention relates to a stratified type structure and its process for obtaining it. According to the invention, the structure consists of gypsum panels between which an anti-breakage element such as fiberglass mesh bonded together with a polyurethane binder and a sound-absorbing layer made up of mills of polyurethane foam having the particle size of 7 ... 10 mm and polyurethane binder in 50:50 gravimetric proportion, used in civil or industrial constructions, Fig.1. The process of obtaining the sound-absorbing structure according to the invention consists in bonding the plates with fiberglass nets, preparing and depositing the mixture of polyurethane foam milling polymeric binder between the plates and drying the structure.

Class 7

RO.154.

Title Recycling process of non-metallic wastes of printed circuit board and recovered polypropylene as shock-resistant composites
Authors Paul Niculae Ghioca, Ramona-Marina Grigorescu, Lorena Iancu, Rodica Mariana Ion, Nelu Ion, Mădălina-Elena David, Elena Ramona Andrei, Mircea Ioan Filipescu, Bogdan Norocel Spurcaci
Institution ICECHIM, Bucharest
Patent no. A2020 -0080/17.02.2020

Description The invention describes a process for simultaneous recycling of non-metallic fraction of waste printed circuit boards and of recovered polypropylene as impact-strength composites. The recycling of these polymers is a stringent requirement both for the protection of the environment and for reducing the use of fossil materials. Extraction and processing of these fossil resources are costly and polluting. Polypropylene is one of the most used polymers and its industry was highly developed. It is known that most of polypropylene sorts have a low impact-strength, property that becomes even more

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deficient for the recovered polymer due to the degradation of the products during their exploitation. The process according to the invention removes this disadvantage by melt modifying the recovered polypropylene together with the non-metallic fraction of printed circuit boards and with a mixture of two styrene-butadiene block-copolymers. Thus, polypropylene composites with similar impact strength with the assortments available on the market, but cheaper are obtained by an ecological method. Another advantage of the invention is the use of a powder from printed circuit boards waste with a size of 0.2 ... 0.8 mm, whose less advanced milling is achieved with reduced energy consumption. The polypropylene composites obtained according to the invention can be used in the production of technical parts and packages.

Class 1

RO.155.

Title **Alginate microcapsules with encapsulated magnetite for photocatalytic degradation of anti-tumoral drugs**

Authors Ana –Alexandra Sorescu, Alexandrina Nuță, Rodica Mariana Ion, Nelu Ion

Institution ICECHIM, Bucharest

Patent **A2020-00029/23.01.2020**

Description The present invention relates to a process for obtaining magnetite nanoparticles for use in the retention / destruction of antitumor drugs present in wastewater. According to the invention, the process of obtaining involves two steps, as follows: the extraction of phytocomponents from vegetal-source as non-toxic resources, followed by the contact with the precursors of Fe^{3+} and Fe^{2+} at a pH appropriate to obtain the iron-ferric oxide, isolation and drying.

Class 1

RO.156.

Title **Elastomeric films for the degradation of anti-tumor drug wastes in photocatalytic reactors**

Authors Rodica Mariana Ion, Paul Niculae Ghioca, Ramona-Marina Grigorescu, Lorena Iancu, Madalina -Elena David, Nelu Ion

Institution ICECHIM, Bucharest

Patent **A2020-00030/23.01.2020**

Description The invention provides an elastomeric film used for the

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