advantages of the SH-synthesis is the ability to manage the process of synthesis at different stages [2]. It is also worth noting that the high resource efficiency of this method is compared to traditional methods of powder metallurgy.

Mechanical activation of the starting components is a method of controlling the synthesis reaction in the preparatory phase, is widely used in SHS. This method is a transfer of mechanical energy to sample with the aim of deformation and fracture of a solid body by the accumulation of point defects and dislocations, allowing not only to receive objects with linear dimensions in the range from tens of micrometers to a few nanometers, but also speed up chemical reactions in the synthesis of solid-phase compounds [3].

In this study, the sample used powders La_2O_3. Mechanical activation was carried out in a planetary ball mill AGO-2C, where the metal balls with a diameter of 6 mm are used as grinding bodies. The influence of the centripetal acceleration of the grinding bodies under the machining of lanthanum oxide was investigated, and also the effect of machining time was studied.

Is a result of the research the dependence of the particle size parameters of mechanical activation (time, centripetal acceleration) was revealed, which can be used to establish the optimum mode of mechanical activation in a planetary ball mill.

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MATERIALS USED IN IMPLANTOLOGY

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Metals have long been used in medicine as a material for implantation. The first metal implant was invented in the 18th century; during the second half of the 19th century silver wire was used increasingly for fixing. After the creation of stainless V2A-steels (Cr-Ni-steels; Krupp), new opportunities for the use of steel alloys in surgery appeared. In 1936 Co-Cr-alloys ("Vitallium") for osteosynthesis and dental applications were introduced. Titanium and its alloys have been applied since 1950-s. All materials are corrodible. It means that all of them may be oxidized in some cases. As a result of corrosion loss of material takes place. Therefore, experts use metals forming a passive oxide layer which is capable (ideally) of repairing itself if damaged.

Ceramics - products from inorganic, nonmetallic materials (clay, for example) and its mixtures with mineral additives, is manufactured at high temperature and cooled then. The use of ceramic prostheses and implants in medicine is one of the new areas that have received significant development in the last decade due to advances in the field of structural ceramics, production of high-purity powders, the processes of their formation and processing of ceramic products.

Aluminum oxide (α-Al_2O_3; corundum) – biologically indestructible ceramic, mainly used for implants, withstand mechanical load.

Dental ceramics are widely, used in dental technology for facing metal dentures (dental bridges and crowns) and for artificial teeth modeling. The first porcelain dentures were made in XVII century; first porcelain teeth - in the early XIX century. After the discovery of rubber vulcanization, soft material which could capture ceramic teeth on the plate was invented. First individual dental porcelain crowns were made at the end of XIX century. At the end of the World War II metal bridges were widely used.

Calcium phosphates are used for bone replacement. Titanium implants are used for tooth replacement and hip joint implants coated with calcium to increase the mechanical stability of the implant due to bone ingrowth.

Polymers have been used clinically since 1960. From the chemical point of view polymers are long chain molecules consisting of repetitive small particles (monomers). The number of monomer units in the polymer is denoted as the degree of polymerization. Short chains are called oligomers. If monomer units are equal, the polymer is referred to as a homopolymer. If they are different, it is called a copolymer. The polymers have many useful properties and characteristics: elasticity, ductility, hardness, creep, weariness, wear.

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POLYMERIC MATERIALS MODIFICATION

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Nowadays medicine is progressing rapidly, and one of many directions of modern science is development, research and improvement of the biomedical devices, intended for a contact with the living organism. For these purposes special polymers are widely used in reconstructive and regenerative medicine. One of the most widely used biopolymers is poly- L- suckling acid (PLLA, PLA). However, this biopolymer has disadvantages: hydropathy, slow degradation and others. For the solution of these problems, there are methods of volume and superficial retrofitting of polymers, such as copolymerizing, plasma treatment, and radiation of different types: gamma-radiation, radiation of electrons and ions beam etc. These methods play an important role in the obtaining of given properties of coating in medicine. One of the methods of volume retrofitting is radiation treatment based on the influence of impulsive electronic beam. This method allows getting the required properties of polymeric materials, affecting molecular structure of substance, causing excitation and molecules ionizing.

The objective of this work is to study radiation absorbed dose measured with a sample of polymeric material as a result of the influence of impulsive electronic beam and the exposure of optimal method of measuring. The sample irradiation was carried out at the DEG-500 accelerator (TPU, Tomsk). Two methods of evaluation of the radiation absorbed dose were used: using faraday cup and <<POR>> dosimetric films.

Measuring of radiation absorbed dose with the faraday cup is based on voltage scanning at the oscillograph. A charge passed through the cylinder is calculated from this integral $q = \int Idt$, where $I = \frac{U}{R} = \frac{Sk}{R}$; S – a square under the curve showed by oscillograph. Having graphed $S(t)$ according to function values in every 2 ns and having integrated it with the «Origin 8.1» program, a charge value is calculated. The general formula for calculation is $D = \frac{E}{m} = \frac{NE_{\bar{e}}\bar{e}}{m} = \frac{SkE_{\bar{e}}}{Rm}$, where $R = 0{,}05\ Ohm\ and\ k = 9{,}3$ – the constructive multiplier of amplification and voltage value showed by the