ABSTRACT

The bachelor work contains: 87 pages, 15 tables, 42 figures, 34 references.

The object of research – photopolymer resin for melting models

The subject of research – technological process parameters

The goal of the work – to minimize the consumption of photopolymer resin

Research methodology – DLP printing, profilometry

The results of the research – the roughness of the surface of 3D models was determined; the ash content of the photopolymer resin was determined

The main indicators – the ash content of the material under study is 0.98 %, the minimum permissible wall thickness of the printed model should be 1.0 mm the surface roughness of the printed models is Ra 2.2 μm, and the roughness of the castings is in the range of Ra 9.1-9.3 μm

The degree of implementation – samples of photopolymer material were produced and tested in the laboratories of the institute.

Field of application – metallurgy, foundry, jewelry and art casting.

Economic efficiency – conditional economic effect UAH 144,659.2.

Predicted assumptions regarding the development of the research object - the transition from classic and time-consuming methods of foundry production to the latest - 3D printing

INVESTMENT CASTING; FORM-MONOLITH; PHOTOPOLYMER RESIN; ARTISTIC CASTING; JEWELRY CASTING; 3D PRINTING; DLP PRINTING