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GRAIN REFINEMENT OF MAGNESIUM ALLOYS

The mechanical properties of as-cast Mg-Li alloy after grain refinement by TiBor and AlSr modifiers were studied. The addition of 0.2 wt% TiBor and AlSr to analysed single β-phase Mg-Li ultralight alloys refined the structure, which resulted in the improvement of mechanical properties and compressive strength. The fine microstructures introduced by applied modifiers significantly improved the mechanical properties. The results showed that the addition of TiBor master alloy reduced the grain size of Mg-12Li-1.5Al cast alloy from 628 μm to 385 μm, while the addition of AlSr master alloy reduced the grain size of Mg-12Li-1.5Al cast alloy to 483 μm, while the addition of TiBor and AlSr simultaneously decreased the average grain size to 394 μm. Hardness was improved from 70 HRF to 79 HRF after modification by TiBor. Compressive strength was enhanced. The addition of grain refinements caused in improved of compressive strength from 180 MPa for the unmodified alloy to 229 MPa for alloy after modification on TiBor and AlSr simultaneously.

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CLOUD TECHNOLOGIES AS A TOOL FOR HUMAN, SOCIETY AND ECONOMY DEVELOPMENT

Modern labor markets are undergoing significant transformations caused by new technologies. Digital technologies used in digital economy provide speed in receiving and processing information; the ability to analyze large amounts of data, reduce the likelihood of error due to the human factor. Processing and use of large amounts of digital data can increase efficiency, quality and productivity in various types of production, technologies, equipment, storage, sales, delivery and consumption of goods and services.

One of the driving forces of digital economy is the proliferation of digital platforms that use data-driven business models and transform existing sectors of the economy. The power of these platforms is evidenced by the fact that seven of the eight largest companies in the world by market capitalization use platform business models.

Digital platforms act as mechanisms that allow different parties to interact online. There are differences between operating and innovation platforms. Operating platforms are bilateral / multilateral markets with an infrastructure that operates online and provides transactions between different parties. They have become the main business model for large digital corporations (such as Amazon, Alibaba, Facebook, and eBay), as well as for corporations in sectors where digital technologies are widely used, such as Uber, "Didi Chusin" or "Airbnb"). Innovative platforms are an environment in which code and content developers create applications and software, for example, in the form of operating systems (such as "Android" or "Linux") or technology standards (such as the MPEG format for video files) [1]. The growth of digital platforms is directly related to their ability to collect and analyze digital data, but their interests and working methods largely depend on how they monetize this data to generate revenue.

Businesses that work on platforms have significant advantages in a data-driven economy. Acting as intermediaries and infrastructure platforms, they provide opportunities to register and retrieve all data related to online activity and transactions between platform users.

The European Union is paying close attention to the introduction of next-generation digital technologies in business, such as the Internet of Things, cloud computing, big data and data analytics, robotics and 3D printing. These technologies open new horizons for the development of innovative products and services [2].

Cloud technologies is a method of distributed data processing in which computer resources and capacity are provided to the user as an Internet service. In fact, the cloud is an electronic repository of user data on the Internet, which allows you to store, edit, and use the necessary programs and services from any computer or smartphone available to him.

Domestic companies began to use cloud services quite creatively. During 2017-2019, their number increased by 1,072 enterprises, or by 25.9%. Most of the company's cloud services used e-mail and financial or accounting applications. The number of companies that used clouds to host office software, to store large files, and to host an enterprise database has increased. In addition, cloud computing services were used to manage customer relationships and in general for the operation of enterprise software.

In 2020, the use of cloud technologies has significantly increased, especially among small and medium enterprises. According to Gartner, the global market for cloud technology has exceeded a total of $ 330 billion. According to CloudTech, the cost of public clouds is expected to grow from $ 229 billion in 2019 to $ 500 billion by 2023, with an expected total annual growth rate (CAGR) of 22.3% [3].

In 2021, main trends in the cloud market will be:

cloudless server method is a technique for implementing functions in the cloud on the required basis. Businesses will rely on server-free computing because they will be able to work with the main product without the need to operate or manage servers;

most companies will implement hybrid clouds in their IT infrastructure. The main reason for this is its position on the control and security of private networks, as well as the expansion of the universality of the public cloud.

As implementation of any technologies, working with cloud has its drawbacks as well. Among them are the following:

company needs constant and stable access to the Internet;

threat to information security: for corporate data, their integrity and confidentiality, the company that provides cloud computing services is responsible;

lack of flexibility: not every cloud product can be fully customized to your goals and objectives;

complexity of planning. Many cloud services are now available for free or at very reasonable prices. However, it is not clear that they will remain so forever or will always be provided for the same price (and with the same functionality). Potentially, the same service in the future may be provided on completely different terms.

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MODERN TECHNOLOGIES OF MOTOR VEHICLE BODYWORK AND PAINT REPAIRS

Nowadays, many times in refinishing, conventional paints are still used, in which about 84% is solvent. Car painters motivate the usage of this type of material, believing that water-solvent-based paints do not meet the requirements to which the paint surface coating is exposed (atmospheric, chemical, mechanical), which is not true. The automotive industry, repair shops should be convinced to use the most modern technology of car paint materials - paints based on a water-soluble basis.

The use of paints based on a water-soluble basis is a new approach in bodywork and repairs painting. The technical advantages of this color line allow repair shops to reduce the emission of Volatile Organic Compounds, but also to improve the plant's efficiency and, most importantly, to reduce the exposure of paint shop workers to hazardous substances that have a negative impact on their health, while maintaining the expected result of repair quality.

Waterborne paints have the option of drying with an IR lamp, which in turn can "slow down" the spray booth, which can be used for the next task. Such important matters are reflected in the efficiency of the entire plant, and assuming that the profitability of this type of company is esti-