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*Corresponding author

Shpenev AG, Ishlinsky Institute for Problems in Mechanics RAS, Pr.Vernadskogo, Moscow, Russia

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Opinion Article

Promising Areas of Composite Materials Study after the Epidemic

Shpenev AG*

Ishlinsky Institute for Problems in Mechanics RAS, Pr.Vernadskogo, Moscow, Russia

Opinion

Coronavirus pandemic and global recession will have long-term consequences, even after the quarantine ends. Furthermore, changes, possibly, will affect scientific and engineering research. This paper will consider the possible implications for the study and creation of composite materials. Composite materials are promising materials that are continuously gaining an increasing share of the industry and technology. The ability to control their properties and create materials that are optimal for each specific site and application made it possible to respond to the ever-growing demands of technology. However, if growth slows down, optimization and economy issues come to the fore, including such specific ones as locality of production and availability of sales. In this light, a number of directions in the study of composite materials can be distinguished, which seem to be the most promising. First of all, the aerospace direction should be noted. Crisis, resulting in the political plane, cause considerable public spending on space exploration, which continuously requires new materials. First of all, temperature and chemically resistant composites are relevant. Also in this area, the development of mesh structures based on carbon fiber reinforced plastics and specialized 3D printing may be interesting, due to the extreme demands of spacecrafts on the mass of their structure [1-5]. The next area is construction, especially the construction of private houses. Quarantine measures can push people to purchase their own housing, and technologies that make such construction cheaper and faster will be in demand. Improvement of materials such as sandwich-structured composites, insulated and reinforced concretes, wood composites will be relevant in the near future [6-10].

The third area, which actively overlaps with the previous one, may be the study of composites based on natural materials or waste. These materials meet the challenges of protecting the environment, reducing the cost of production and localizing the supply of raw materials, which can also become relevant when the conditions of world trade deteriorate [11-16]. In the context of global economic growth and increasingly complex technology, industry has consistently demonstrated the demand for more advanced materials. Any improvement in the parameters of the composite could find its place and its customer. In today's conditions, it is important to focus on areas for improving materials, which, first of all, will help to reduce the cost of production and reduce the burden on the environment. The present work was supported by the Ministry of Science and Higher Education within the framework of the Russian State Assignment under contract No. AAAA-A20-120011690132-4.

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