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## PROSPECTS FOR CREATING COMPOSITE MIXTURES BASED ON SYNTHETIC POLYMERS REINFORCED WITH FIBERS OF NATURAL ORIGIN

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Natural fibers, which differ in their biodegradability, high level of orientation, strength, flexibility and significant specific stiffness, are of great interest for use as reinforcing elements. Their additional benefits are non-toxicity, effective insulation properties, minimal wear and tear and reparability.

During the development of composites with natural fibers, it is necessary to take into account the unique features of their structure and geometry, relatively low mechanical characteristics, weak interaction between hydrophilic fibers and hydrophobic matrix, as well as limited heat resistance. A careful study of the mechanical, thermal, electrical, and physicochemical properties of such composites, as well as their ability to absorb water, opens up opportunities for purposeful creation of reinforced composites with the required characteristics [1].

Composite polymers based on thermoplastics, which include finely divided natural fibers, thermoplastic polymers such as polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), and special chemical additives to improve technical characteristics, show significant potential. These materials allow the production of semi-finished products and finished products of various shapes from a combination of natural fiber and plastic by means of extrusion or pressing, ensuring the productivity characteristic of plastic production. Currently, extrusion, injection, rotary and press methods are used for the production of parts from these composite mixtures [2]. Particularly promising is the use of extrusion equipment, including 3D printers, for printing with composite mixtures [3].

### References

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