

Brief information about the project

Name of the project	AP14871403 «Development of technology for the production of rubber compounds with specified characteristics»
Relevance	<p>1) an annual growth in demand for rubber products in various industries by 15-16%;</p> <p>2) a significant decline in the production of the main types of rubber products, and complete absence of tire production;</p> <p>3) the annual increase in the cost of all types of manufactured rubber products;</p> <p>4) significant reserves of technogenic raw materials – shungite, the Bakyrchik deposit, more than 20 million tons, which can be used as a reinforcing filler in rubber mixtures up to 60-70% by weight, instead of carbon black.</p> <p>The main results of the project will be the developed formulations of rubber compounds for the manufacture of rubber products for special purposes. The optimal methods for obtaining rubber mixtures using shungite material will be determined experimentally, the selection of formulations for specific types of rubber products with specified characteristics will be carried out; the study of the basic physico-mechanical and physico-chemical properties (conditional tensile strength, elongation at break, Shore A hardness, etc.) of manufactured rubber products will be carried out.</p> <p>The results of the research obtained within the framework of the project will make it possible to expand the range of rubber compounds obtained using shungite material; to conduct research to develop formulations of rubber compounds aimed at the development of the tire industry, which is planned to be created in Kazakhstan.</p> <p>The results of the conducted research will find wide practical application to improve the environmental situation in the East Kazakhstan region; to expand the arsenal of rubber products; will give impetus to the development of domestic production, as well as reduce the cost of rubber products.</p>
Purpose	Develop formulations of rubber mixtures using a reinforcing filler – shungite to produce special rubber products
Objectives	<ol style="list-style-type: none">1. Development of formulations of special-purpose rubber compounds using shungite material, manufacture of vulcanizates.2. Determination of the basic physico-mechanical and physico-chemical parameters of rubber compounds on standard samples.3. Determination of radio shielding properties of rubber compounds using shungite materials.4. Development of a basic technological scheme to produce special-purpose rubber mixtures using shungite materials.5. Conducting pilot tests based on the partner company of the Project "AIM Lab" LLP.
Expected and achieved results	<p>Expected results:</p> <ul style="list-style-type: none">• new formulations of rubber compounds using shungite materials will be developed and created;• existing formulations of rubber compounds will be optimized;

	<ul style="list-style-type: none"> • standard samples of industrial products will be produced for testing; • on the basis of the partner company of the Project, the physico-mechanical and physico-chemical parameters of standard samples will be studied according to GOST methods; • the developed new formulations of rubber compounds will be recommended to the production. <p>Publications:</p> <p>1) An article will be published in a journal indexed in the Science Citation Index Expanded of the Web of Science database and (or) having a CiteScore percentile in the Scopus database of at least 65 (sixty-five);</p> <p>2) An article will be published in a journal indexed in the Science Citation Index Expanded of the Web of Science database and (or) having a CiteScore percentile in the Scopus database of at least 65 (sixty-five).</p>
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List of publications with links to them	
Patents	





