

Method of Electroomic Conversion of Energy Using Electric Currents with Turbulent Character

Anatoly Ashcheulov¹, Mykola Derevianchuk², and Dmytro Lavreniuk²

¹Institute of Thermoelectricity of National Academy of Sciences and Ministry of Education and Science of Ukraine

²Yuriy Fedkovych Chernivtsi National University

June 13, 2022

Abstract

During the twentieth century, scientific and technological progress has led to a sharp increase in energy consumption. Since the beginning of the XXI century, hydrocarbon raw materials have become the basis of energy generation. Scientists around the world are currently working on the development and implementation of new alternative methods of energy generation. The share of ecological generation is growing every year, but such growth does not keep up with the increase in consumption. With this in mind, the article conducted a study proposing a new approach to electricity generation. The operation of the proposed devices is based on the conversion of electric current by an anisotropic electrically conductive medium characterized by different p- and n-types of conductivity in selected crystallographic directions under ohmic contact. It is shown that in the case of an external sinusoidal electric current flowing through a device based on an anisotropic rectangular plate, vortices of electric current occur in its volume. Such electric vortices with turbulent flow are an effective mechanism that pumps energy between the environment and in our case, the anisotropic plate.

Hosted file

\selectlanguage{russian}Ashcheulov et al..docx available at <https://authorea.com/users/488805/articles/572792-method-of-electroomic-conversion-of-energy-using-electric-currents-with-turbulent-character>





