Practicality and Efficiency of Piezoelectricity As a Major Energy Source

Brian T. Alloway

Quantitative Methods in rocks and Minerals

Steve Teeter

Summer Ventures in Science in Mathematics

The University of North Carolina at Charlotte

Abstract:

Because of all of the negative effects caused by current unclean energy sources it is essential that other, cleaner energy sources are found and used. One of these clean energy sources could possibly be achieved through the process of piezoelectricity. Piezoelectricity is the energy obtained from certain minerals when they are strained. This energy can be obtained by placing a piezoelectric mineral in an environment in which it would be subject to strain, and then storing that produced energy for further use. The creation of this energy would be "clean", and the resulting energy would also be "clean". Having this as a possible energy source would greatly reduce pollution and would not have the environmental drawbacks of current energy sources. Through research it was found that if the minerals were used in a way that would put them under strain, than they would create enough energy to make their production cost efficient. This process has been shown through other applications of piezoelectricity to be a viable option for harnessing a significant sum of energy.

This research paper will examine the different ways that piezoelectricity is and could be used to solve some of the world's current energy and pollution crises.