Homopolar Motor

Tvisha Bhanushali (Hillsborough Middle School, USA), Kovid@designerlightingandfan.com

Abstract

Good afternoon! My name is Tvisha Faria and I am currently an 8th grader studying at Hillsborough Middle School. I am part of Professor Littman's Engineering Projects in Community Service program at Princeton University. Using the vast concepts of science, we duplicate original experiments and share them via our events which occur in local schools, libraries as well as community programs. I have recreated a project known as the homopolar motor. My essential goal for this presentation is to teach individuals about the homopolar motor. I doubt many people know about the homopolar motor and I would like to inform people about their capabilities. or Faraday's motor uses electromagnetism to create a rotational movement around a battery. Michael Faraday, the creator of the motor, was an English scientist of the 19th century, known for studying electromagnetism and electrochemistry. The homopolar motor essentially uses Lorentz force, a combination of electric and magnetic force, to spin a copper coiled wire around a battery and three magnets. This invention led to the making of motors and the discovery of electromagnetism in 1821. My poster board will include information about the history and the science behind homopolar motors. Students will also be able to learn about homopolar motors through innovation and interactive experiments. My group and I have done this project in the past and have presented it in front of other individuals. My presentation will include mini-experiments using the homopolar motor concept. Some of these experiments may include the battery and copper wire rotation or the circular battery motion on aluminum foil. My poster will include research about homopolar motors: their origin, evolution, fun facts, and more. My future goals are to continue to teach all about homopolar motors to people. My team and I often go to different locations to expose people to the realms of engineering and science. Homopolar motors fall under this category, and I am exotic to teach individuals about how they work. Also, I have a younger sister at home who loves learning about circuits. In the future, I would like to show her this experiment, which could be incorporated in her life. Her elementary school hosts an annual science fair every year, which is when I can teach her this project in such a way that she can share it with her classmates. Essentially, my goal is to show people how homopolar motors work. I would like to show people how interesting science and engineering is. Thank you, Tvisha Faria tvishafaria@gmail.com