

Joshua

Can innovative manipulation of magnetic lines of force lead to high efficiency electrical power generation?

This project investigates a patented, but little known technology developed by Joe Flynn of Flynn Research Inc. Parallel Path Magnetic Technology and a power conversion device using this technology were investigated to validate data presented as part of their unique approach. This explores the possibilities of manipulating magnetic field lines to produce more field strength than expected as in a conventional system. Also this project, in Phase 2, explores the use of this technology for ultra efficient power conversion.

The researcher's project offers a method to redistribute magnetic field lines without them coupling. Testing was accomplished using different setups of a single test apparatus in a single test fixture. The test apparatus consists of two armatures, two pole pieces, two magnet stacks, two drive coils (in series) and various plastic shims.

Pull-off tests were conducted to determine field strength changes caused by varying shim thickness, armature and magnet placement, and power to the drive coils. Comparable test configurations yielded the following interesting results. Armature pull-tests with no magnets, 0.070" shim and 394 mA of current in the 1,200 turn coils produced 3.72 newtons of force. The same test setup using permanent magnets and no power to the coils created 8.75 newtons of force. Combining the powered coils and the permanent magnets in the same test configuration the pull-off force increased dramatically to 22.82 newtons. All tests substantiated claims by the inventor. Research has begun on constructing and testing a power conversion device based on this technology. Initial testing is promising.

Category
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- Microbiology
- Physics
- Zoology
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1. As a part of this research project, the student directly handled, manipulated, or interacted with (check ALL that apply): human subjects pathogenic agents recombinant DNA
 non-human vertebrate animals controlled substances human/animal tissue
2. Student independently performed all procedures as outline in this abstract. Yes No
3. This project was conducted at a Registered Research Institution. Yes No
4. Is this project a continuation? Yes No
5. My display board includes photographs/visual depictions of humans (other than myself or my family): Yes No

I/We hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I/We also attest that the above properly reflects my/our own work.

Finalist or Team Leader Signature

Date

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This embossed seal attests that this project is in compliance with all federal and state laws and regulations and that all appropriate reviews and approvals have been obtained including the final clearance by the Intel ISEF Scientific Review Committee.

