Project Name – "Electro Kick" – Electricity Generating Shoes

Problem Statement- To make shoes which can charge your phone anytime.

Project Budget- INR 5,000

Description-

Following the same logic as the electricity road I thought that pressure from our feet can also be converted into electricity. However, the voltage wouldn't be enough, to solve this problem I connected the piezo electric crystals on a sole of a shoe and sandwiched it between another sole.

After finishing the custom sole, I tested it and it worked. I needed a war to store the power and use it. I could've made my own circuit but to save time and effort I used an old power bank. Since these uses nickel metal hydrate batteries which can be charged with any voltage above 3.7 volts it was the optimum choice. I hooked a homemade bridge rectifier circuit with a 7805-power regulator IC and a capacitor. When I stepped on the sole a couple of times it didn't do anything, but I kept repeating it and then once the capacitor gained charge it started charging the power bank.

I retrofitted the sole in an old pair of converse shoes and wore them to school. People thought it was an ankle bracelet. The power bank I completely discharged in the morning. In the evening when I plugged in my phone it showed that the power bank was full and charged my phone successfully. However due to sweat and lateral pressure the sole with the crystals was completely ruined. But it did work once flawlessly. Proving the concept worked

Materials Consumed-

1. A converse shoe
2. Insole
3. Piezo Electric Crystals
4. Tabbing Wires
5. Diodes
6. 7805 IC
7. Power Bank
8. Zip Ties
9. Glue Gun
10. Wires