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santhosh_r (/member/santhosh_r/)
Santhosh (http://eco-electronics.blogspot.com/)
(/member/santhosh_r/)
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Bio: My name is santhosh. I am a higher secondary student.I love electronics!.I started learing electronics since 2008.I like programming PICs.

More by santhosh_r

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Hi friends,
This is my first Instructable!!!
"ELECTRICITY FROM WALKING",looks like a weird title!!.But it is true that you can generate electricity by just walking over.
The principle is very simple,when you apply a pressure on ***piezoelectric*** crystals electricity is developed over the crystal lattice!.
When you walk a pressure is applied to the ground ,utilising this pressure electricity is generated.
You can read the full details from

The Transportation of the Future, HEV Bus (/id/The-Transportation-of-the-Future-HEV-Bus/)

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http://www.scribd.com/doc/22975115/Project-Building-Instructions-ELECTRICITY-FROM-WALKING (http://www.scribd.com/doc/22975115/Project-Building-Instructions-ELECTRICITY-FROM-WALKING)
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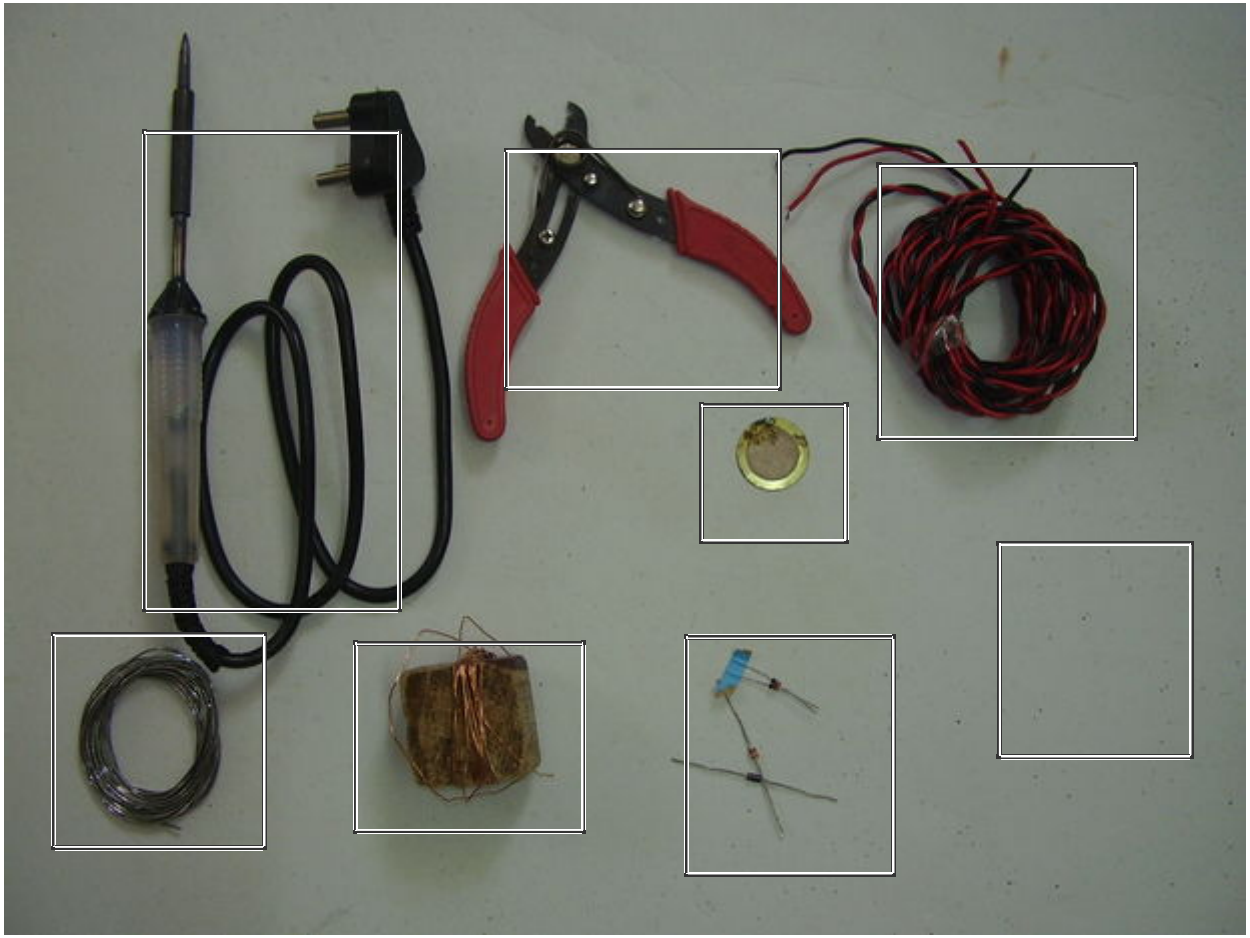
Step 1: Materials required



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Materials required:

Piezoelectric transducers(the thin speakers from the buzzers) - according to the area of the base

Diodes(1N4148 or any smaller diode) - no. of transducers used(one for each transducer)

Base - cardboard or any hard material

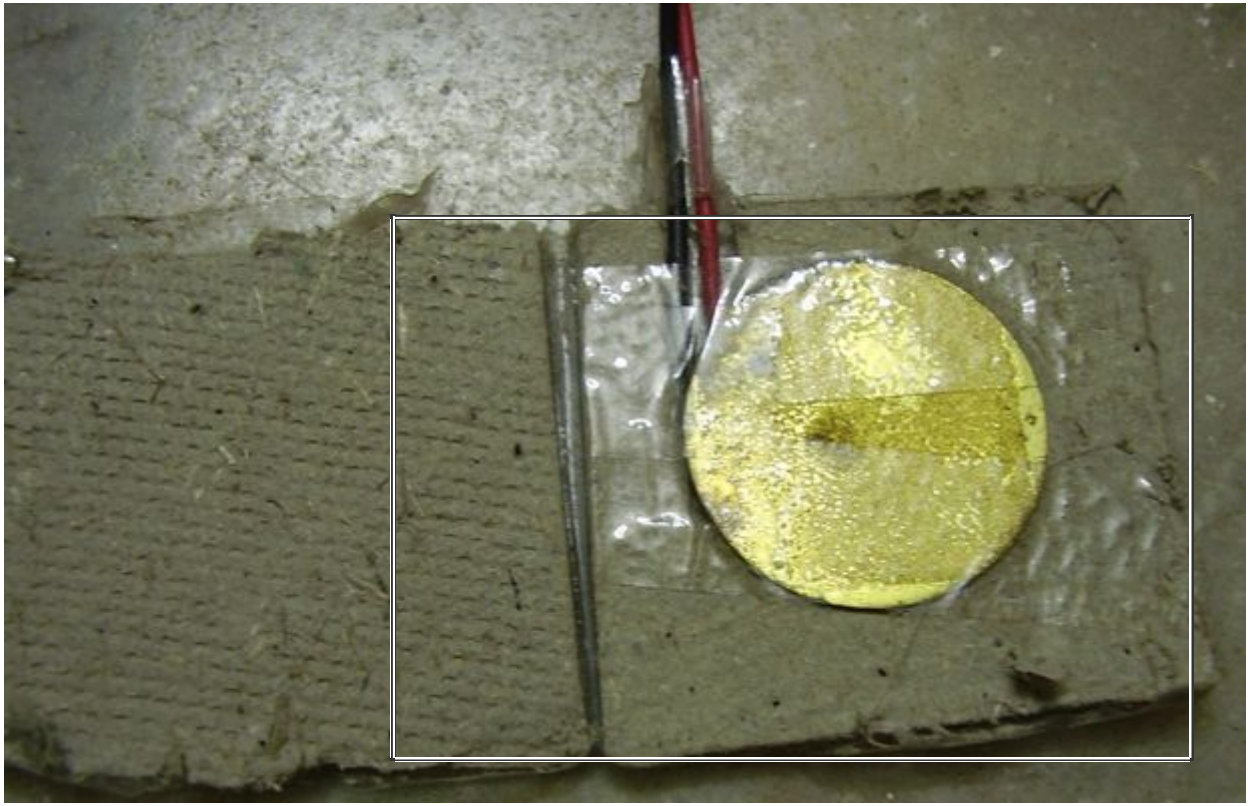
Cardboard - cut into small square pieces with side slightly longer than the diameter of the transducer

Soldering iron ,solder, wire strippers ,knives or utility blades,enameled copper wires.

Red and black coloured wires - desired length

Step 2: Soldering the cells(transducers)

(http://cdn.instructables.com/FS4/NGC7/G5ZJQV6K/FS4NGC7G5ZJQV6K.LARGE.jpg)



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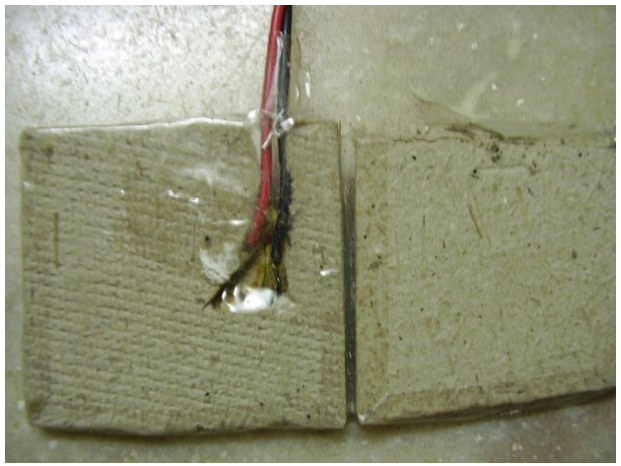


(http://cdn.instructables.com/FU4/YHWE/G5ZJQV6J/FU4YHWEG5ZJQV6J.LARGE.jpg)

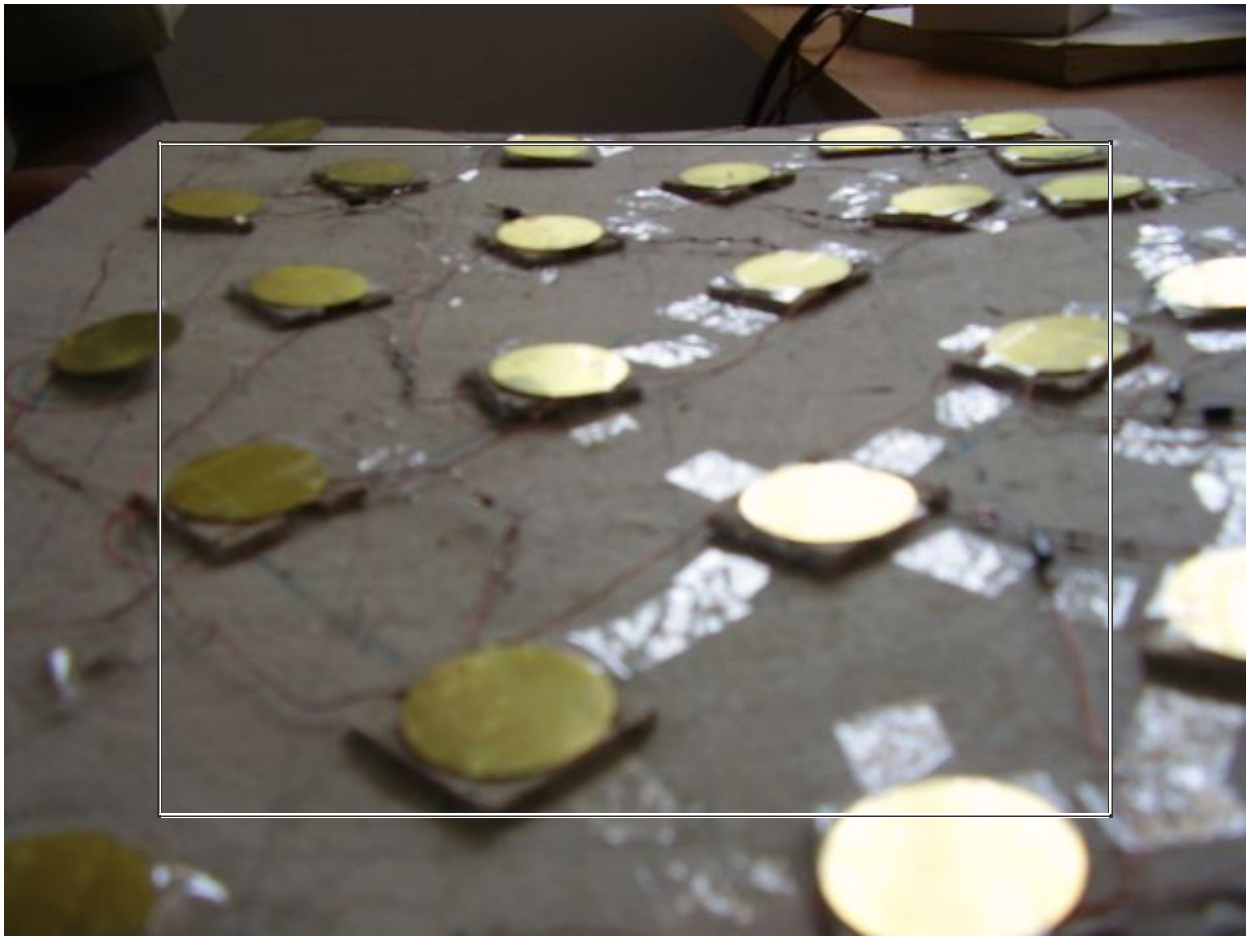
Take the cells and solder a stripped enameled wire followed by a diode.

Connect a ells.
Connect th allel.
The red wi l the black wire from other cells.

Electricity from walking by santhosh_r (/member/santhosh_r/)

Step 3: A

(http://cdn.instructables.com/F0N/5Z2E/G5ZJQV6C/F0N5Z2EG5ZJQV6C.LARGE.jpg)



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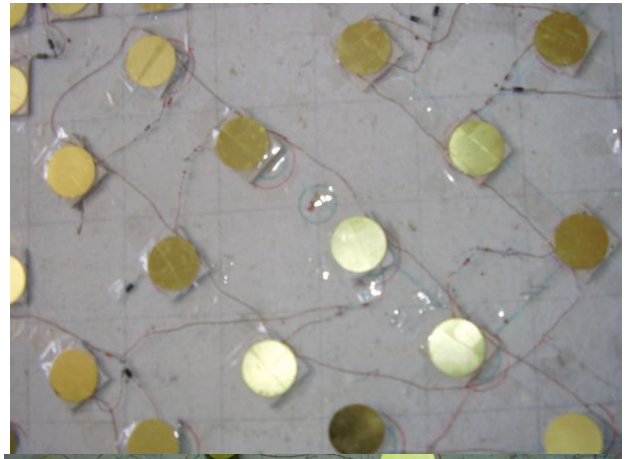

Z9Y6OG5ZJQV6G.LARGE.jpg)

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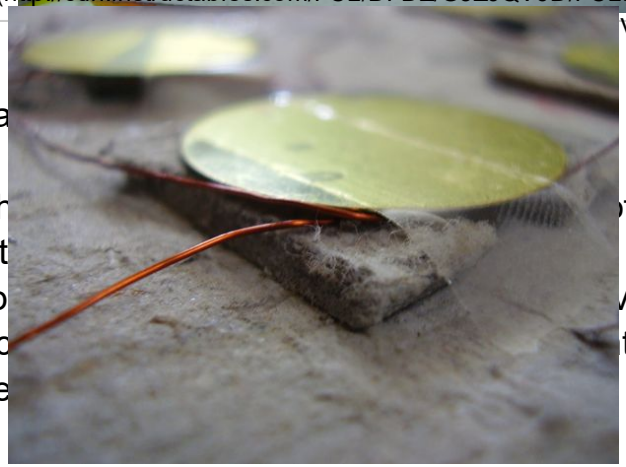
VLHHG5ZJQV6B.LARGE.jpg)

Cut the ba

Arrange th f cardboard in between the cells and t
The cardb ve cut ,so that the wires soldered c ts the cells from breaking when an e



(http://cdn.instructables.com/FGG/NL97/G5ZJQV6E/FGGNL97G5ZJQV6E.LARGE.jpg)

Step 4:

(http://cdn.instructables.com/FS2/5PDK/G5ZJQV6L/FS25PDKG5ZJQV6L.LARGE.jpg)

Cut another cardboard or any other hard material to the size same as the base and place it over the cells.Vollah! the project is ready to test!
Draw some graphics and stick it to the top cover to make it attractive.

Step 5: Testing

(http://cdn.instructables.com/FKL/K42N/G5ZJQV6M/FKLK42NG5ZJQV6M.LARGE.jpg)

Connect the black wire to the wire that you have connect in parallel to the cells common wire.

Connect the red wire to the wire that you have connected in parallel from the diode.

Connect both the wire to a digital multimeter set to 20V range.
Walk on the project with the top cover fixed. Do not walk on bare cells as it would break them.
If you have connected everything right ,the multimeter would show some reading like 2V or something like that.
The output voltage and power is directly proportional to the pressure applied or in other words the weight of the person walking on it and the time the person is standing on it.

Step 6: Troubleshooting

There is no reading on the multimeter

Check the cables

check that the red goes to the diodes' cathode

USES:

-In crowded areas such as railway stations, sub-ways, bus terminus etc.
-The electricity can be used to charge batteries and used for street lights and night lights.
-Emergency exits.
-Direction boards or sign boards.

Reference:

http://en.wikipedia.org/wiki/Piezoelectricity
(http://en.wikipedia.org/wiki/Piezoelectricity)
http://www.americanpiezo.com/piezo_theory/piezo_theory.pdf

(http://www.americanpiezo.com/piezo_theory/piezo_theory.pdf)
http://memebox.com/futureblogger/show/1406-commuters-to-generate-electricity-from-walking-into-train-station
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My appoligise for any mistakes.

We have a **be nice** comment policy.
Please be positive and constructive.

I Made it! Add Images Make Comment

hamxa.abbasi.3 (/member/hamxa.abbasi.3/) 3 months ago Reply

it is producing a farily high amount of voltage but not current...?

(/member/hamxa.abbasi.3/)

beingarif (/member/beingarif/)

2 years ago Reply

how much amount of current is generated in amperes? please inform me soon & how

(/member/beingarif/)

hamxa.abbasi.3 (/member/hamxa.abbasi.3/) beingarif 3 months ago Reply

current is the measure problem, it doesn't produce much ,may be in nano amps

(/member/hamxa.abbasi.3/)

ChaitraT (/member/ChaitraT/) 6 months ago Reply

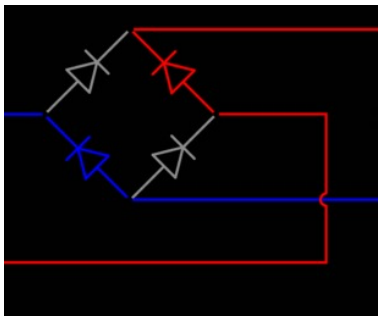
Friends,I used this piezoelectric sensor(transducer) to sense the vibrations produced by a small vibration motor.But i used 1 sensor and getting a very small variable voltage.The output is not constant to amplify.can i use many sensors? if yes should they be connected in series or parallel???How to connect??Can i use rubber sheet to transfer vibrations??plz help..

(/member/ChaitraT/)

Crazynventor (/member/Crazynventor/) ChaitraT 3 months ago Reply

you are getting ac current.You need to convert it to dc with bridge diode like the picture.

(/member/Crazynventor/)



(http://cdn.instructables.com/FJF/B9BO/IAKWINA6/FJFB9BOIAKWINA6.LARGE.jpg)

Class8 (/member/Class8/) 5 months ago Reply

can anything b used instead of a piezoelectric transducers??

(/member/Class8/)

---

alone flame (/member/alone+flame/) 7 months ago Reply

it's beautiful thank you ;-)

(/member/alone+flame/)

---

alone flame (/member/alone+flame/) 7 months ago Reply

hello,I wonder to know can I make it with series piezoelectrics I mean buy doing this can I get more voltage (like batteries)?and how much is the voltage that you got,I can't understand it from the picture.

why you didn't use one diode bridge instead of lots of diodes?

(/member/alone+flame/)

LBJ6.K (/member/LBJ6.K/) 8 months ago Reply

Why is a diode being used instead of the bridge rectifier circuit?

(/member/LBJ6.K/)

LBJ6.K (/member/LBJ6.K/) 8 months ago Reply

Why is a diode being used instead of the bridge rectifier circuit?

(/member/LBJ6.K/)

LBJ6.K (/member/LBJ6.K/)

8 months ago Reply

Why is a diode being used instead of the bridge rectifier circuit?

(/member/LBJ6.K/)

---

unique1510 (/member/unique1510/) 9 months ago Reply

does it depend on the weight of the perso

(/member/unique1510/)

ashwini11 (/member/ashwini11/) 3 years ago Reply

where i can find this Piezoelectric transducers . i want this fast and cheaply. please tell fast .

(/member/ashwini11/)

i cudent understand (the thin speakers from the buzzers) can you please tell fast

---

ilayaraja97 (/member/ilayaraja97/) ashwini11 11 months ago Reply

hack into a buzzer u'll find a coin like component that is the piezo

(/member/ilayaraja97/)

senowoke (/member/senowoke/) 4 years ago Reply

very interesting...

(/member/senowoke/)

it is the output ac or dc??
how to stabilize the out put??

---

santhosh_r (/member/santhosh_r/) (author) senowoke 4 years ago Reply

The output is AC and the diodes are used to rectify it to DC. To stablize the output use a capacitor.

(/member/santhosh_r/)

beingarif (/member/beingarif/) santhosh_r 2 years ago Reply

(/member/beingarif/)

how much amount of current is generated in amperes? please inform me soon & how please sir please m doing this as my final year B.E project n m facing problem in finding the current i have got the voltage but its not showing current so please inform me as soon as possible

ilayaraja97 (/member/ilayaraja97/) beingarif 11 months ago Reply

(/member/ilayaraja97/)

try a micro or milli ammeter u might get it i'm also atempting to do this project

aswanikumar.chaganti.3 (/member/aswanikumar.chaganti.3/) 1 year ago Reply

(/member/aswanikumar.chaganti.3/)

Hi, Thank you and great work. Can you tell me, where we can buy in Kakinada, Andhra Pradesh and cost of the sensor?

Aswin

ilayaraja97 (/member/ilayaraja97/) aswanikumar.chaganti.3 11 months ago Reply

(/member/ilayaraja97/)

sensor?? u mean the piezoelectric cell right just take it from a buzzer u will get it

nitesh0001 (/member/nitesh0001/) 1 year ago Reply

(/member/nitesh0001/)

ya m also generate but is very big problem for crystal bcs this cracked it under why.....nd how electrcity generate back high tap it after crate electricity is low range ....so wt m doing help me ...think my be final year project .....guide me yaar9028414428 is my contact no


(/member/bradshep/)

bradshep (/member/bradshep/) 1 year ago Reply

Is there an email I can reach the author with, I have a few questions?


(/member/aswanikumar.chaganti.3/)

aswanikumar.chaganti.3 (/member/aswanikumar.chaganti.3/) 1 year ago Reply

Hi, Thank you and great work. Can you tell me, where we can buy in Kakinada, Andhra Pradesh and cost of the sensor?

Aswin


(/member/Aditya+M/)

Aditya M (/member/Aditya+M/) 1 year ago Reply

COOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOL

(/member/aranaut321/)

aranaut321 (/member/aranaut321/) 1 year ago Reply

where do i find the thin speakers from buzzers? Are they found in calling bells in our houses? please reply as fast as possible.


(/member/sks3/)

sks3 (/member/sks3/) aranaut321 1 year ago Reply

no

(/member/Chaitanya+Chandwadkar/)

Chaitanya Chandwadkar (/member/Chaitanya+Chandwadkar/) 1 year ago Reply

Awesome 1

arjunsaseendran (/member/arjunsaseendran/) 2 years ago Reply

thanks it is very usefull for me

(/member/arjunsaseendran/)

sushanthpro (/member/sushanthpro/) 2 years ago Reply

sir i am interested in your idea can you give me any valuable suggestions

(/member/sushanthpro/)

anilkunchalaece (/member/anilkunchalaece/) 2 years ago Reply

how much power do u get with it. are u having any mathematical data regarding to calculate the power from it.

(/member/anilkunchalaece/)

sachingowda (/member/sachingowda/) 3 years ago Reply

interesting,,,better to implement on a large scale..

(/member/sachingowda/)

roshanhalde (/member/roshanhalde/) 4 years ago Reply

IT"S is COOOOOOLLLLLLLLLLLLL!!!!!!!!!!!!!!!!!!!!!!!!!!!!!.....

(/member/roshanhalde/)

Chainfire (/member/Chainfire/) 4 years ago Reply

I'm doing a similar project to this, and i want to know a couple things.
Did you account for the polarity of the elements?
Do you actually need the diodes?
How exactly did you hook this up to your voltmeter?
Any references you could provide would be appreciated!

(/member/Chainfire/)

santhosh_r (/member/santhosh_r/) (author) Chainfire 4 years ago Reply

(/member/santhosh_r/)

I did not account for the polarity of the crystal as it produces a AC voltage!

Yes the diodes are necessary to convert AC to DC and to prevent the energy produced by one crystal being used by the other to produce sound.
for more details read
http://www.scribd.com/doc/22975115/Project-Building-Instructions-ELECTRICITY-FROM-WALKING

http://www.scribd.com/doc/22302487/Electricity-From-Walking

iPodGuy (/member/iPodGuy/) 5 years ago Reply

(/member/iPodGuy/)

Cool! Need some of those on my boots!

alexsolex (/member/alexsolex/) 5 years ago Reply

(/member/alexsolex/)

it could be a soooo good idea... if PZB was not so toxic and if you had not to recycle it the proper way..

Your idea is pretty clever anyway, and on wide range could be usefull for many applications (put some under your shoes and get a source for charging phones or mp3 stuff...)

rimar2000 (/member/rimar2000/) 5 years ago Reply

(/member/rimar2000/)

Very interesting!

It is useful also, or only for fun?

santhosh_r (/member/santhosh_r/) (author) rimar2000

It is useful and not for fun!!

5 years ago Reply

(/member/santhosh_r/)

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Please be positive and constructive.

I Made it! Add Images Make Comment

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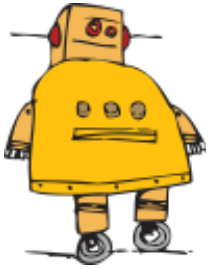

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