

German researchers using plants to mine germanium

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A 12 gram (2x3 cm) polycrystalline block of germanium with uneven cleaved surfaces. Credit: Wikipedia/CC BY 3.0

A team of researchers at Germany's Freiburg University of Mining and Technology has found a new way to get germanium (which was first discovered in that country and used in early transistors), according to a [report](#) from *Reuters*—they are mining it from plant shoots and roots. The shiny grey semi-metal has properties that make it a crucial material for use in semiconducting devices, such as computers and smartphones—also, because it is transparent when exposed to infra red light, it is used in parking sensors and smart steering systems—but it has been difficult to obtain. Most of it is now mined in China and exported around the world.

Now, that might be changing, however, as the researchers in Germany appear to have developed a way to mine the material right from the soil near their campus. There is a lot of zinc ore in their area, they note, which has been mined and the waste left behind—pouring [germanium](#)-rich water through it, they explain, drains through and into the soil where plants such as reed canary grass, corn and sunflowers pull it out through their root systems. The semi-metal winds up in various parts of the plants—to retrieve it, the researchers cause the plants to ferment using bacteria, which releases it allowing for reasonably easy collection. What's more they note, the process is also very efficient because the plants they are using are also used to create biogas—grabbing the germanium is simply a byproduct of growing what the researchers call energy crops.

There is one serious caveat however, the individual [plants](#) do not collect much germanium, which means that they do not give up much, which means the whole system cannot, at least for now, be used to mine

germanium on an industrial scale. The researchers believe that will change however, and vow to continue their work, predicting that someday soon they will be able to scale up the process in a way that will make obtaining germanium cost effective. If so, that could mean cheaper electronics for consumers and perhaps devices built specifically to take advantage of the more readily available material.

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