

Finding new materials capable of detecting dark matter

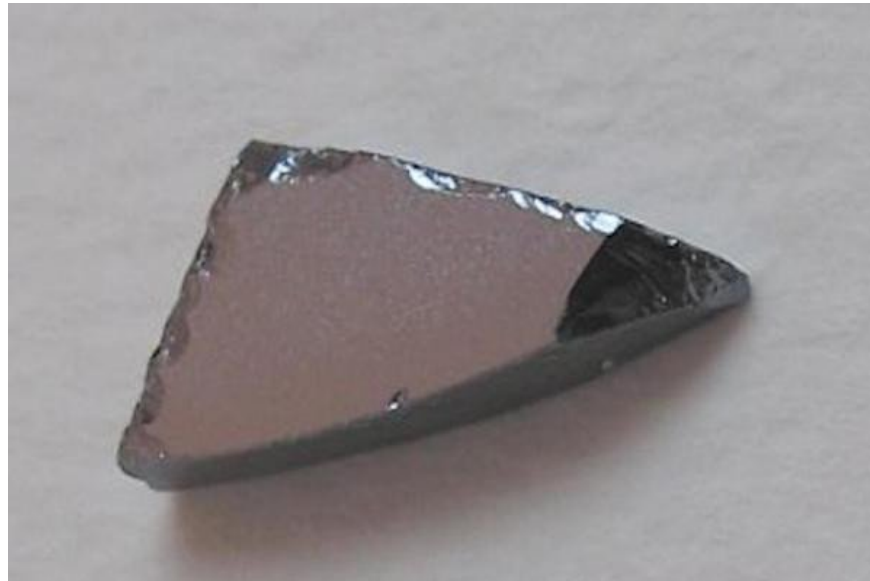
Scientists believe that a new material, known as a scintillator, will expand the search for dark matter. The new analysis shows that the scintillator material is sensitive to dark matter particles with less mass than a proton, allowing scientists to use it to find dark matter in a previously undiscovered scale.

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The weak interaction of large matter particles, also called WIMP, is like how to describe dark matter particles with larger masses than protons. Scientists have tried to directly detect WIMP using many strategies, but without success.

Dark matter including what is still a mystery. Astronomers can only detect its presence indirectly by measuring its gravitational influence. But researchers are hoping that finding a lower range can bring a better breakthrough.



The detection ability of scintillator is described in the Journal of Applied Physics.

This scintillator material consists of gallium arsenide, or GaA crystals, enhanced with silicon and Bo. Models show that this unique material becomes bright when colliding with dark matter particles, reducing electrons.

Researchers at Lawrence Berkeley National Laboratory in California want to combine this material with a natural light meter, which can detect small amounts of light at extremely low temperatures.

In it, Gallium arsenide crystal is quite easy to grow. In recent experiments, crystals glow strongly when electromagnetic particles are expelled from the crystal atomic structure.

After construction, the new GaA light generator will be placed deep underground, protected from interfering cosmic rays, but thanks to this system scientists hope it will detect dark matter particles. .

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