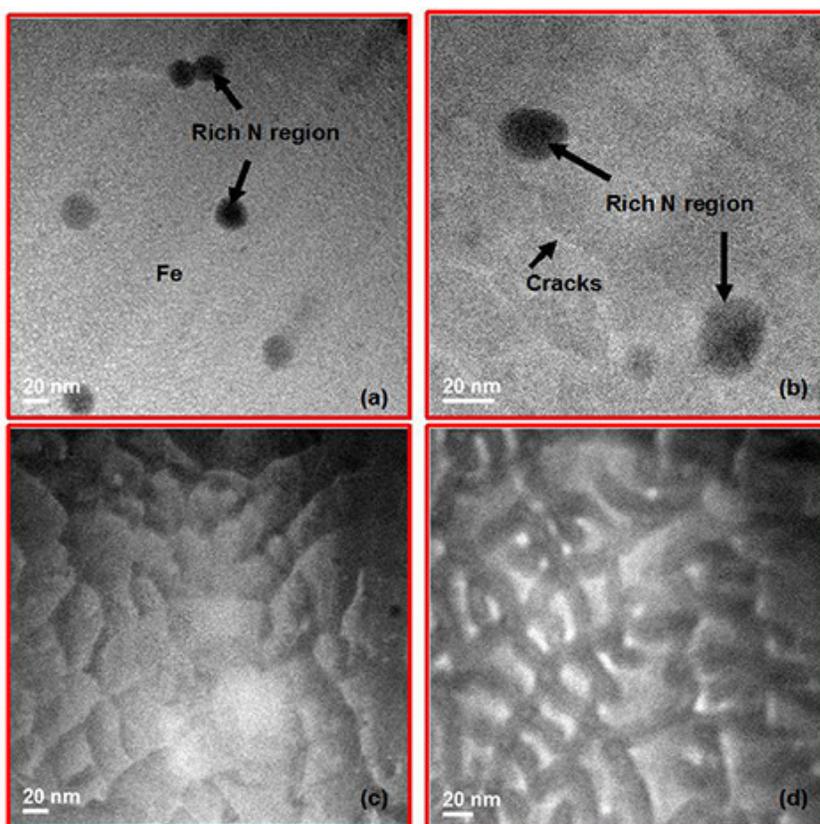


# Rare-earth-free magnet made from cheap materials

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## Rare-earth-free magnet made from cheap materials

US researchers have created a powerful permanent magnet out of iron and nitrogen, two plentiful cheap materials, as part of a programme to cut the need for 'rare earth' metals.

It is only a tiny sample, a film 500nm thick, but it is the real thing.

"To the best of our knowledge, this could be the first experimental evidence of the existence of a giant saturation magnetization, an obviously large coercivity, with a magnetic energy product of up to 20 MGOe, in a bulk-type FeN sample," said the team in '[Synthesis of Fe<sub>16</sub>N<sub>2</sub> compound free-standing foils with 20MGOe magnetic energy product by nitrogen ion-implantation](#)', a Nature Scientist Reports paper written by a team from the University of Minnesota, Los Alamos National Laboratory and Oak Ridge National Laboratory.

[Read more.](#)

May 17, 2016 By Steve Bush - For [Electronics Weekly](#)

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