OAK RIDGE NATIONAL LABORATORY
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# Improved Precursor for Synthesis of Fe-N Magnet Powders

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**Technology Summary**

Iron nitride magnets based on the Fe16N2 phase are of great interest as a magnetic material for applications ranging from data storage data storage to electrical motors for vehicles, wind turbines, and other power generation equipment. This is because the component base elements (Fe, N) are inexpensive and widely available, in contrast to typically used state of the art rare earth based magnets which are costly and subject to supply availability risks. The Fe16N2 phase, which is the ordered version of Fe8N, is widely reported to have the largest magnetization of any compound, but is also exceedingly difficult to manufacture. The invention improves the manufacture and magnetic properties of iron nitride magnets.

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