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Title: Causes of loss of magnetism in wind turbine generators

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A pilot project by the University of Birmingham is exploring ways to recover rare-earth materials from old wind turbine magnets, which could reduce the environmental impact of wind turbine production.

Abstract-- Two significant issues in wind power asynchronous generators are magnetic wedge loss and coil movement resulting in winding faults. Most of the time the failures occur unexpectedly or require ...

This work aims to map the present and future potential of NdFeB magnets used in wind turbines in Germany to be introduced into a circular economy resulting in material amounts of ...

In this article, we'll break down how wind turbines work, the importance of permanent magnets in their design, and why rare earth magnets are the preferred choice in the industry.

As wind energy becomes a more significant part of the global energy mix, the need for efficient energy storage solutions will grow. This demand may drive innovations in magnet ...

Due to the harsh actual operating environment of the permanent magnet wind turbine, it is easy to break down and difficult to monitor. Therefore, the electromagnetic characteristics ...

WIND TURBINE GENERATORS ted the first electromagnetic generator. He discovered that an electric current can be cre-ated in a conductor w en it is moved through a magnetic field. Nearly 200 years ...

The failure mechanisms in wind turbines can be broadly classified into mechanical, electrical, and environmental causes. Each category encompasses various factors that contribute to the ...

Reviewed in this paper will be several wind turbine generator applications where this is a common failure mode, some possible weaknesses in the design of the coil/slot configurations and some possible ...

Causes of loss of magnetism in wind turbine generators

Numerous statistical studies have pointed out that generator failures are a main cause of wind turbine system downtime. The generator, as one of the core components, converts rotating mechanical ...

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