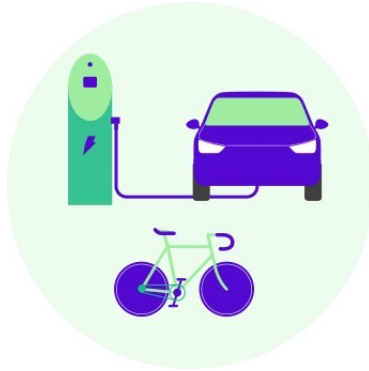




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ADDITIVE MANUFACTURING Design and Fabrication of Synchronous Reluctance Motor with Maximum Saliency

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Priority Data	21/10/2021
Protection	IT 102021000027062 PCT/IB2022/060098

What we are looking for

We are looking for a suitable partner to enter into license deal/co-development partnership

What it is needed for?

In recent decades, the electric motor sector has acquired increasing importance and interest, both for the versatility of this type of motor and for environmental issues.

Traditionally, electric motors consist of a rotor rotatably mounted within a stator. The motors thus obtained have many advantages, being characterized by a high efficiency, but the cost of the magnets of the electric motors currently represents a major limitation. There is currently a strong interest in technologies that increase engine efficiency but at the same time allow for costs reduction.

Synchronous reluctance electric motors are an alternative to traditional electric motors because they include rotors characterized by a robust and relatively simple structure. Furthermore, these rotors can be characterized by the absence of permanent magnets, thus reducing their production costs.

The present invention describes a rotor for a synchronous reluctance motor made by additive manufacturing (AM) technology.

The proposed novelty concerns the geometric configuration of the rotor flow barriers which, being made with AM technology, can have an optimal geometry, such as to maximize the saliency of the rotor and therefore the performance of the motor.

Advantages

- Increase in efficiency;
- increase in saliency;
- Increased power factor and torque density;
- Elimination of cross-saturation phenomena;

Applications

- Electrical machines;
- Additive Manufacturing applications;
- Ventilation Systems.

TRL scale

