High temperature insulating method for electric motor windings

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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 the state of the art, complex methods are used to install ceramic insulators in commercial electric motors. In addition, thermally low-performing insulators limit the temperature range in which the motor can operate.

A new methodology for insulating electric motors is proposed. In particular, the invention concerns the electrical insulation of the motor's copper conductors.
An effective method of producing stator windings by means of ceramic insulation and silicon-based paste can be adopted to electrically insulate the motor and increase its operating temperature range up to 600°.

Advantages

- To increase the operating temperature range of the motor;
- To facilitate the construction and installation process;
- To create more stable insulation over time than standard applications.
- To remove the need for active systems to dissipate motor heat avoiding the use of power.

Applications

- Energy recovery from automotive turbochargers;
- Startup and power generation with gas turbines in aircraft applications;
- Electric motors which operate in a thermally harsh environment;
- High-performance traction motors.

TRL scale

1 2 3 4 5 6 7 8 9

Physics, New Materials