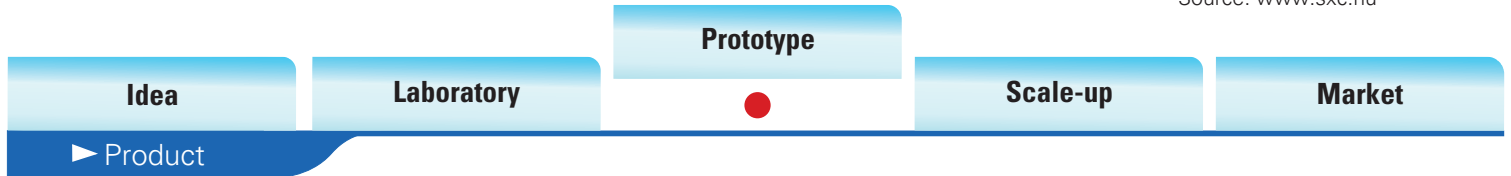


PROTECTIVE DEVICES AGAINST ELECTRICAL SURGES

“Ceramic blocks provide effective protection against electrical surges and can be remodeled for high, medium and low voltage applications.”



Source: www.sxc.hu



Description

The technology consists of varistor compositions (nonlinear resistors) that can be used in protective devices against electrical surges in electric and electronic equipment, cars, traffic lights, and for lightning protection of power distribution lines. The technology presents an innovative composition that enables it to handle different electrical loads, using national raw material.

Problem

The market of equipment protection devices offers numerous varistor compositions adapted to the high, medium or low voltage power supply lines in which they will be inserted. The adaptation of varistors requires changing the composition of the product and the process to obtain it.

Proposed solution

The present technology offers a varistor composition applicable in equipment connected to high, medium and low voltages, without the need for adjustments in the composition of the device or its production process, while offering a product with improved effectiveness, greater strength and lower cost.

Benefits

This innovative tin dioxide-based (SnO_2) composition offers greater protection for equipment used in the electricity generation and distribution and electrical and electronics sectors. Compared to its competitors, such as zinc oxide-based (ZnO) varistors, it presents the following advantages:

- Far superior effectiveness than commercial products;
- Can be remodeled into numerous ceramic shapes without changing the composition and process (for high, medium and low voltage applications);
- The compositions are more resistant to aggressive chemical environments (longer service life);
- Composed of raw material readily available in national territory (SnO_2).

Market potential

Electric power generation and distribution companies are engaged in the continuing search for new technologies to protect their equipment. According to a survey by INPE (National Institute for Space Research), lightning causes annual losses of approximately US\$ 1 billion in Brazil, which impacts the electrical sector the most, with estimated losses of US\$ 600 million. In the electrical and electronics industry, varistors are among the group of products most imported by Brazil (semiconductors), accounting for US\$ 4 million in imports in 2008, which reinforces the need for the development of national technologies for the sector (ABINEE, 2009).

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