Power supply for degaussing systems with high temperature superconductors

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Propositions

accompanying the dissertation

Power Supply for Degaussing Systems with High Temperature Superconductors

by

Djurre Wikkerink

1. A cryo-cooled MOSFET based converter is much more energy efficient to power HTS degaussing coils than a conventional room-temperature converter (this thesis).
2. Switching frequency modulation is a simple and effective method to reduce the magnetic signature around the switching frequency (this thesis).
3. Unlike for a regular converter, the current output of a cryo-cooled converter with a superconductive load decreases significantly as the switching frequency increases (this thesis).
4. The most effective method to research the implementation of HTS on power systems on board ships is by building an experimental test setup.
5. Following the trend of superconductor discovery dates, the first room-temperature atmospheric-pressure superconductor will be discovered on July 17th, 2098.
6. There is no such thing as a defensive weapon.
7. Research should strive for simplification instead of adding more complexity.
8. Novelty is not a prerequisite for valid scientific research.
9. Metaphors are indispensable tools in the communication of science.

These propositions are regarded as opposable and defendable, and have been approved as such by the promotors prof. dr. R. Ross. and dr. ir. H. Polinder and copromotor A. Rodrigo Mor.