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LAMINAR SUPERCONDUCTING WINDINGS

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It was declared [1] that large superconducting winding will be saved from current degradation resulting from mechanical perturbations, if the winding has strong and rigid supporting structure, and each turn is rigidly fixed transmitting its force directly to the structure. The superconductor itself shouldn't be used as a structural material. So far the only option was proposed that implements this principle. That is so-called laminar winding. The supporting structure consists of a set of flat sheets. A flexible conductor is adhesively fixed at the sheets. Shear strength of the adhesive is as high as 90 N/mm2. This type of windings were successfully used for a long time [2-5]. Additional functions of the sheets were cooling and protecting of the windings. Application of a film adhesive provides dry manufacturing process. The report describes some perspective applications of the laminar windings (energy storage devices, the dipoles of an accelerator and tokamaks).
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