

High Temperature superconducting wires on Sapphire (Ramot) code: 11-2013-522

<u>Guy Deutscher</u>, T.A.U Tel Aviv University, Exact Sciences, School of Physics and Astronomy <u>Boaz Almog</u>, T.A.U Tel Aviv University, Exact Sciences, School of Physics and Astronomy Next generation of superconducting wires - double-sided coated superconductor tapes on sapphire that will be much simpler to fabricate, will have a lower cost, and much lower AC losses compared with current technologies. We are targeting the electricity market addressing a growing problem of blackouts due to power surges. Using our innovation to introduce revolutionary superconducting tapes for a superconducting Fault Current Limiter (FCL) that protects high voltage (~20kV) equipment against power surges. Some of the key characteristics are:

• Coating of flexible sapphire ribbons or wires with a high quality superconducting layer (YBCO)

• Unique technology overcomes critical barriers that have impeded development of superconducting FCL solutions

• Significant benefits of technology relative to alternatives:

o Increased power density by 100%

o Lowering the cost per 1MW FCL by 75%

o Reducing AC losses by 3 orders of magnitude

o Faster switching times by a factor of 10-100

Contact for more information:

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