An introductory course of a fusion reactor technology:
Design of a superconducting coil

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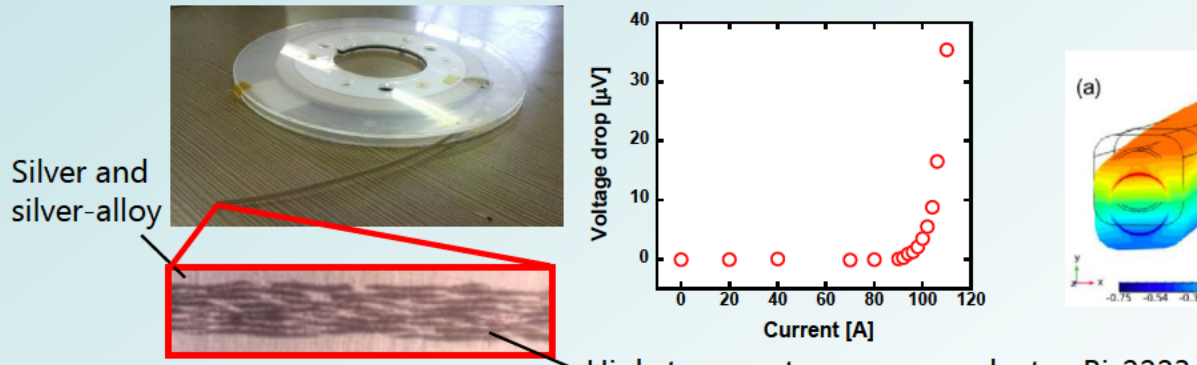
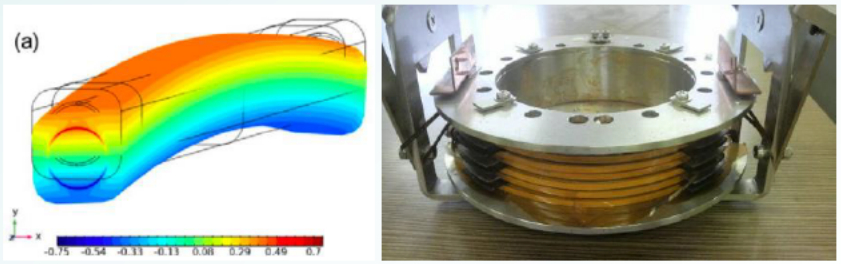
What you can learn in this theme:

A nuclear fusion reactor needs strong magnetic field formed by a "zero electrical resistance" superconducting coil to maintain plasma of deuterium and tritium. It is necessary to consider not only the simple electromagnetic characteristics but also brittleness of the superconducting tape and joint resistance in an actual superconducting coil design. You can learn mechanical and electrical characteristics of a superconducting wire and how to fabricate a superconducting coil through design and fabrication of a small superconducting magnet based on some lectures and experiments using practical high-temperature superconducting tapes.



A practical high-temperature superconducting wire, Bi-2223 tape



A superconducting coil using Bi-2223 tape

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