

International Conference on  
**APPLIED PHYSICS AND MATHEMATICS**

World Congress on  
**MATERIALS RESEARCH AND TECHNOLOGY**

October 22-23, 2018  
Tokyo, Japan

**Use of high-T<sub>c</sub> superconducting technology in everyday life: Super-magnets**

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**H**igh-T<sub>c</sub> superconducting technology is a relatively new and demands application verification in public sector, especially in health care and transportation. In this talk, recent trends in high-T<sub>c</sub> superconducting material processing will be introduced and then the new super-magnet applications will be presented. The bulk superconducting magnets can trap magnetic fields by order of magnitude higher than the best classical hard magnets and are therefore promising as permanent magnets for use in magnetic drug delivery system (MDDS), for construction of small mobile diagnostic devices, for water cleaning technologies etc. Human's body is so complicated that a controlled drug delivery is extremely difficult. This process can be accomplished by magnetic force in the body by exerting a strong magnetic field on the diseased tissue. As a result, a high drug concentration can be delivered in a controlled way to the targeted diseased

organ. This technology minimizes the taken drug amount and prevents thus side effects. Superconducting material is also used in superconducting DC cables, promising in particular in transport of solar energy as well as in feeding cables for railway system applications. In Japan, more than 11,805 km DC electrified lines are in use. A change of the conventional DC cables to superconducting ones would reduce the resistance losses generated in feeding cables to minimum and act environmentally friendly. Superconducting technology could play an important role in various fields of our everyday life. In this presentation, I will summarize the recent development in use of bulk superconducting materials in superconducting magnets and of superconducting cables in various industrial applications.

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