東京大学グローバルCOEプログラム　機械システム・イノベーション国際拠点

東京大学 THE UNIVERSITY OF TOKYO

GMSI Global Center of Excellence for Mechanical Systems Innovation

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NRI ironmaking, an alternative to blast furnace, from Minnesota taconite

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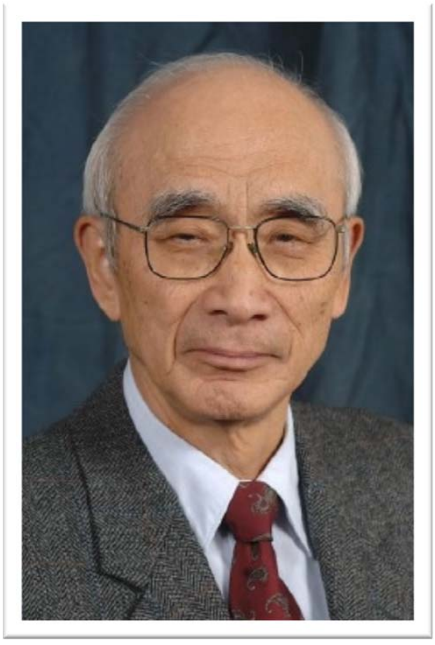
会場：東京大学工学部2号館 2F 222講議室

要旨

The current trend in the steel industry is a gradual decline in conventional steelmaking from taconite pellets in blast furnaces, and an increasing number of alternative processes using metallic scrap iron, pig iron and metallized iron ore products. Currently, iron ores from Minnesota and Michigan are pelletized and shipped to the lower Great Lakes ports as blast furnace feed. The existing transportation system and infrastructure is geared to handling these bulk materials. In order to expand the opportunities for the existing iron ore mines beyond their blast furnace customer base, a new material is needed to satisfy the needs of the emerging electric furnace steel industry while utilizing the existing infrastructure and materials handling.

A successful demonstration of Kobe Steel's ITmk3 process with a large-scale pilot plant at Northshore Mining, in Silver Bay, MN, led to the construction by Mesabi Nugget Corporation of a rotary hearth furnace of 60 m (200 ft) in diameter with a capacity of 500,000 tons/year commercial plant in Hoyt Lakes, MN, and started operation towards the end of 2009. A large-scale pilot plant campaign was also reported by JFE Steel, demonstrating their Hi-QIP process in Japan. The present project was to build upon and improve the process by further reducing cost, improving quality and creating added incentive for commercial development.

The project was initiated by investigating in laboratory tube and box furnaces, and then the process was demonstrated in a pilot-plant linear hearth furnace.



主催：　東京大学グローバルCOEプログラム「機械システム・イノベーション国際拠点」

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