

# **NIMS and Three Steel Companies to Develop a Framework for Open Innovation**

**—NIMS to Play a Pivotal Role in Strengthening Fundamental Technologies of Steel Industry by Addressing Issues Common to Steel Companies—**

**30 June 2017**

National Institute for Materials Science (NIMS)  
Nippon Steel & Sumitomo Metal Corporation  
JFE Steel Corporation  
Kobe Steel, Ltd.

**The National Institute for Materials Science (NIMS) (headquartered in Tsukuba, Ibaraki; Kazuhito Hashimoto, President), Nippon Steel & Sumitomo Metal Corporation, JFE Steel Corporation, and Kobe Steel, Ltd. signed a memorandum of understanding on the operation of the Materials Open Platform (MOP) on June 30, 2017. The MOP initiative is expected to promote NIMS-led open innovation in the steel industry.**

## **Abstract**

NIMS has received vast amounts of investment from the national government. As a result, it has developed into a premier R&D institute attracting world's leading scientists and equipment. It has also built strength in problem-solving oriented projects. A NIMS-led Materials Open Platform (MOP) was established by joining forces with three steel companies in order to secure Japan's international competitiveness through effective use of NIMS' national resources.

Dramatic changes in the industrial environment driven by the development of AI, big data and IoT are making it difficult for individual manufacturers to engage in basic research leading to transformational innovations in materials. The goal of the MOP is to respond to medium- to long-term issues common to steel companies by developing fundamental technologies leading to innovation through large-scale collaboration across the steel industry in Japan. The MOP will also support the global competitiveness of Japanese steel businesses by promoting the pursuit of bilateral collaboration to leverage research accomplishments produced by MOP initiatives for their specific needs. In addition, the MOP will work to reduce environmental impact, make society safer, and promote infrastructure-related exports.

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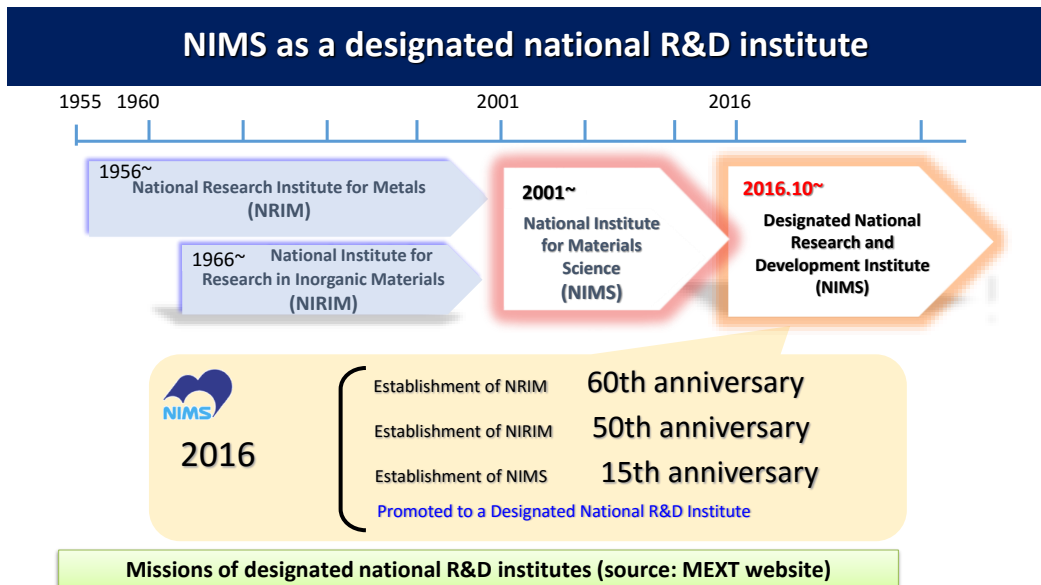
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# Outline of the Materials Open Platform (MOP) to be implemented by NIMS and the steel industry

June 30, 2017

National Institute for Materials Science  
President Kazuhito Hashimoto



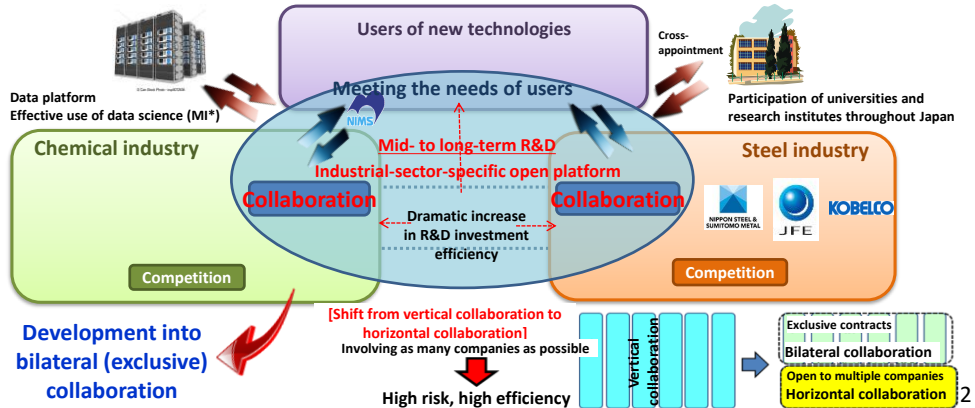
Said institutes will:

1. Provide strong leadership for Japan's innovation system by creating venues which bring together human resources from industry, academia and government, as well as knowledge and funding.
2. Promote the production, popularization and use of world-class R&D accomplishments.

# Materials Open Platform

~Developing a venue for transformational innovations in materials: linking basic research with the needs of private companies~

- NIMS has received vast amounts of investment from the national government. It should therefore **effectively use these national resources** to secure Japan's international competitiveness.
- NIMS has become a designated national R&D institute. It will **establish industrial-sector-specific open platforms to facilitate collaboration between industries and universities** to carry out mid- to long-term R&D projects leading to transformational innovations.
- We will select attractive, far-sighted open platform research themes. If industry, academia and governments join forces to pursue these themes, their efforts can be expected to strengthen the competitiveness of Japanese industry.



## Determining collaborative research projects

—Materials Open Platform (MOP) in the steel industry—



Reducing environmental impact, making society safer, promoting infrastructure-related exports  
**Strengthening fundamental technologies of steel industry, leading to increased performance in structural materials/structures**

Adopting a **principle-based** rather than conventional experience-based **approach to problem-solving will be necessary** in order to maintain Japan's international competitiveness for the next 20 years

Accelerating innovative research through **collaboration** between NIMS and the three steel companies and through highly efficient utilization of national R&D investment

### Specifics of collaboration between NIMS and the three companies

- NIMS' advanced technologies and knowledge will be applied to address issues common to the industry, which are difficult for individual companies to address alone
- NIMS will interview the three steel companies separately, compile information, select collaborative research projects and announce the selections to the companies
- Company researchers will regularly be seconded to NIMS to carry out experiments/calculations
- Information sharing is highly encouraged by means of **free discussion between researchers and regular reporting of progress**
- Company researchers will bring knowledge obtained at NIMS to their companies and consider its application to their companies' specific needs

# Implementation framework (2017) —Materials Open Platform (MOP) in the steel industry—

