# PiAI Seminar Series: Physics informed AI in Plasma Science
## 10:00-11:00, 27 April 2020 (CEST:UTC+2)
## 17:00-18:00, 27 April 2020 (JST:UTC+9)
## Web Seminar

How we can increase the data for the Materials Informatics
-challenge for data sharing scheme-

Toyohiro Chikyow

Assistance General Manager, Group Leader
*National Institute for Materials Science (NIMS),*
*Materials Data & Integrated Systems(MaDIS)*
*Device Materials Informatics Group*

In recent years, materials informatics has attracted much attention as a data-driven materials research. Here, Data science such as machine learning or deep learning for material data generated by computational science is expected to accelerate the discovery of new materials. The United States launched the Materials Genome Initiative (MGI) in 2011 and is moving aggressively to introduce data science and related tools into the materials science . The National Renewable Energy Laboratory (NREL), a research institute belonging to the U.S. Department of Energy, has also released the experimental data which has been accumulated in the laboratories. It is expected to contribute to add teaching data in the data library. On the other hand, in Europe, a materials data sharing system has been launched and projects to collect data in computational science have also been launched .

After the great success in virtual screening by materials informatics, it is thought that the future will shift to "process informatics", which includes the synthesis process data obtained by automatic high-throughput synthesis and characterization, what we call, "smart Laboratory". Actually high-throughput synthesis is quite mature and thin-film synthesis of binary and ternary systems is automated. However still the data is too small to realize new materials discovery by data science.

The next challenge is how we can merge data to organize more bigger data. Here the commonly shared meta data and data scheme become quite important.   On my talk, I will summarize the short history of high throughput experimentation and concept of data sharing at first and show the recent trend of data accumulation and policy for data sharing.