Realization of common platform technology, facilities, and equipment that creates innovative knowledge and products

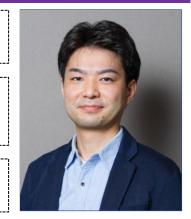**Materials Exploration Platform; Expanding Search Space by high-throughput technology**

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National Institute for Material Science (NIMS), Omron Sinicx Co.

Summary:

In order to improve efficiency of material research and development, we build a new material search method "Materials Exploration Platform", utilizing experience which is Japan's strengths.

POCs are following three for KPI of 1,000-times throughput on battery materials synthesis;
①High-throughput autonomous exploration systems;
 - "Prototype": autonomous experiment system
 - "Measure": automatic crystal structure analysis
 - "Accumulate": properties prediction system
②Data-driven/hypothesis-driven hybrid research style;
"Understand (induce inspiration based on experience)"
is connected to "P"→"M"→"A" by machine learning.
③Knowledge shearing;
Knowledge obtained from data, inspiring researchers,
is shared with R&D institution, R&D company,
and measuring instrument manufacturers
for future materials R&D ecosystem.