

Opportunity evaluation and technology roadmap for materials informatics



Challenge

The client, a non-U.S. consortium, was looking to improve the company's understanding of materials informatics and to develop a framework to examine potential opportunities of materials informatics for the client's country.



Solution

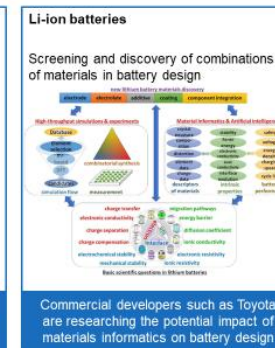
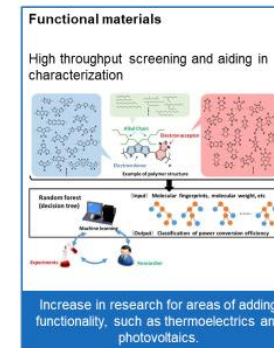
Lux investigated the opportunities of materials informatics to reduce materials development time and determined five main materials informatics application areas for a wide range of materials. Lux created a roadmap of materials informatics for the next 15 years with key strategic actions for our client to expand the company's technical capabilities, establish international collaborations, and build a platform for data sharing and analytics.



Value

Our client was able to use Lux's insights and recommendations to determine which actions to take to become a global player in materials informatics and keep their country's chemical and materials industry relevant beyond 2030.

MI for materials systems design can be ground-breaking if it can be commercialized beyond simple data analytics



Other materials design categories of interest:
Coatings: Limited research in MI for this application
Composites: Deep learning methods have been shown to work on theoretical composite systems
Design and manufacturing: Generative design augmented with machine learning has high potential

Arguably the highest potential impact of MI is for screening of materials systems combinations. However, the stage of development is proof-of-concept rather than applied research due to the complexity of the systems.