

**Abstract**

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**How to Apply New Materials to Electronic Products in a Timely Manner****In Taek Han**

*Material Research Center, Samsung Advanced Institute of Technology,  
Samsung Electronics*

Samsung Advanced Institute of Technology (SAIT) is the cooperate R&D center of Samsung Electronics. Artificial intelligence, new device architectures, electronic materials, particulate matters, and carbon capture technologies are our five key research themes. We prepare the innovative technologies for products which is needed after the next three generations. I'd like to introduce our recent research activities briefly.

Whenever I develop electronic materials, the lack of enough time is one of the most concerns I have. It becomes worse nowadays as the life cycle of the electronic device becomes shorter than before. Therefore, the material scientists try to predict what will be necessary for the future devices in advance. The roadmap is one of the solutions to solve the question. However, it is not a perfect answer for the prediction due to the increased uncertainty and complexity of the devices.

The ideal way is to minimize the material development time to deliver the right materials at the right time to the device engineers. I want to share the crude sketch on the vision of an autonomous material development platform which is using AI engine and robotics technology based on the material knowledge to effectively develop new materials.