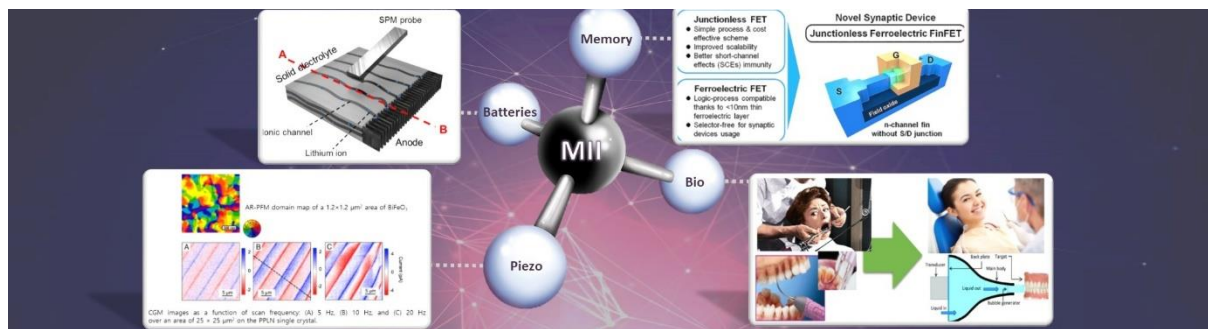


## Materials Imaging and Integration (MII): new paradigm of nanoscale materials design and discovery

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Renaissance established the scientific method, a system by which both observation and reason are employed in order to test the proposed mechanisms for planetary motion. Descartes promoted science by first questioning everything and then building up a theory based on sound observational evidence. Materials science is no exception in the sense that visualization of order parameters or materials properties provides the solid ground on which materials theory and design can flourish. Here I will present our current research thrusts to visualize polarization, electrical charges and ionic transport to understand the emerging phenomena on materials surfaces as well as interfaces and how they help design future memory and energy storage devices [1-4]. Last but not least, I will discuss the vision of materials imaging and integration, which will lead to a new paradigm of nanoscale materials design and discovery.



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