Mechanochemical Polymer Synthesis: Where We Are Now

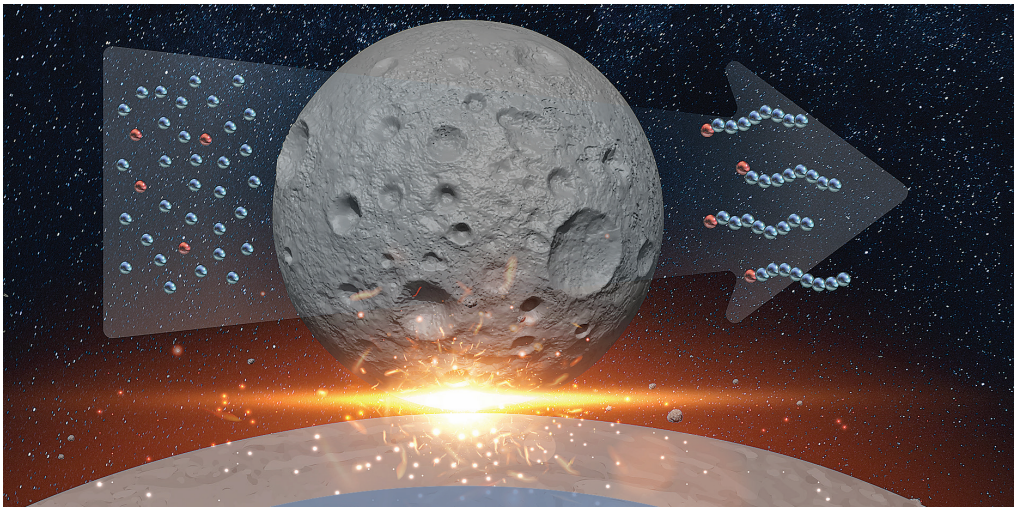
Jeung Gon Kim[a,b]

[a] *Department of Chemistry, Jeonbuk National University, Jeonju, South Korea*
[b] *Research Institute for Materials and Energy Science Institution, Jeonju, South Korea*
jeunggonkim@jbnu.ac.kr

Over the last decade, we have witnessed remarkable advancements in mechanochemistry through numerous successful reports. More importantly, we now have a deeper understanding of the processes occurring during mechanochemical reactions. In this presentation, I aim to highlight the ability of mechanochemistry to thread monomers and produce unique polymers that are inaccessible through conventional solution-based synthesis.[1]

Examples from our group and others have demonstrated how mechanochemical ball-milling can effectively control molecular weight, dispersity, and polymer composition.[2] Notably, the solid-state nature of mechanochemistry eliminates issues with insoluble monomer combinations.[3] Additionally, polymer degradation back to monomers and insights into mixing dynamics during polymerization have been observed.[4]

Through this presentation, the audience will appreciate that mechanochemical synthesis is not only an exciting area of research but also extends beyond its appeal as a "green" technology.



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