

Invited Lecture
3rd Asian conference on Chemosensors and Imaging Probes
(AsianChIP-2019)

**Scope of Mechanochemical Reactions in the Development of Chemosensors
for Environmental and Healthcare Application**

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The thrust for developing environmentally benign and sustainable methods to comply with various stringent guidelines and regulations have led to the development of mechanochemical reactions, which avoids the practise of consuming large quantities of solvents and high temperatures. In spite of its many benefits, the application of mechanochemical synthesis has been largely focused in the area of organic chemistry as an alternative to solution-based methods. Ever since chemists started to explore the potential of mechanochemistry, tremendous progress of this green technique in diverse areas viz. transition-metal catalysis, coordination compounds and supramolecular synthesis, porous framework materials, metallo-drugs, pharmaceutical and luminescent co-crystals, functional polymers, nanoparticles synthesis, etc. has been observed in this decade. To our surprise, the scope of mechanochemical exercise in the development of chemosensors is largely overlooked. This presentation turns our attention towards the utilization of mechanochemistry in the progress of sensory sciences. More specifically, this presentation describes the opportunity of mechanochemical reactions in the advancement of chemosensors to be useful in the area of environmental monitoring and development of different point-of-care assays for crucial biomarkers linked to various health conditions. For example, this presentation begins with the discussion on the utilization of mechanochemical reactions in the chemosensing of environmentally hazardous analytes such as copper, cyanide, and picric acid. The later part of this presentation demonstrates the scope of mechanochemical reactions to develop point-of-care (POC) assays for specific bio-analytes such as biothiols, which are considered as the crucial biomarkers for various health conditions.

References

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Bio-sketch

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