**Elucidation of Atomic Level Structure-Performance Relationships in**

**Supported Metal Catalysts**

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Determination of structure-performance relationships in supported metal catalysts is crucial for designing better performing catalysts. In this talk, some of our current projects focusing on this aim will be discussed:

1. Ionic liquid (IL) coated supported molecular metal catalysts and their industrial counterparts: Elucidation of the effects of ILs on the catalytic performance.
2. Nickel catalysts for hydrogen production by ammonia decomposition: Elucidation of the effects of metal particle size and support surface acidity on catalytic performance.