

Progress Report on the Modeling and Development of C1 Conversion Reaction

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Research progress on the development of reaction kinetics and design of reactor for direct conversion of C1 gas will be reported.

1. A microkinetic model for the conversion of syngas to methyl acetate via DME over hybrid catalyst will be discussed, and the effects of Al doping in a zeolite on the DME adsorption energy will be evaluated using computational chemistry approach.
2. A reaction model for non-oxidative conversion of methane will be introduced by considering both gas-phase and surface reactions.
3. A reactor model for a plasma-based conversion of methane will be discussed.