

Selectively formation and methylation of amines using CO₂ in flow

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Methyl group is an magic block which could prolong the half life time and reduce IC 50 value of drug candidate. In recent years, the methylation of amine using CO₂ as C1 source is becoming more and more hot point. This research project is focused on using carbon dioxide to realize the methylation of amine, which has wide application in organic synthesis, material science. Carbon dioxide is cheap, safe and abundant gas in the nature which is very suitable for industrial production which has significant both in academic and industry. By activating carbon dioxide, this project is going to seek for a homogeneous catalyst system to selectively achieve formation and methylation of amine using gas-liquid segment microreactor. And finally apply this system into drug synthesis. In current plan, this research will apply in the synthesis of s-ketamine for the treatment of depression.