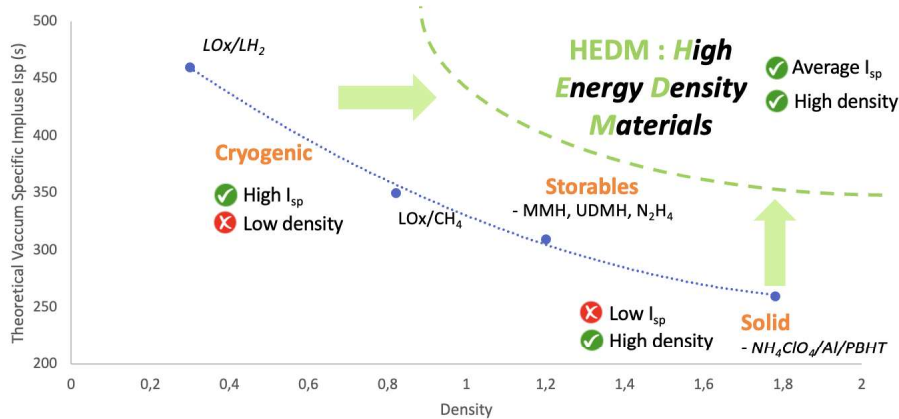


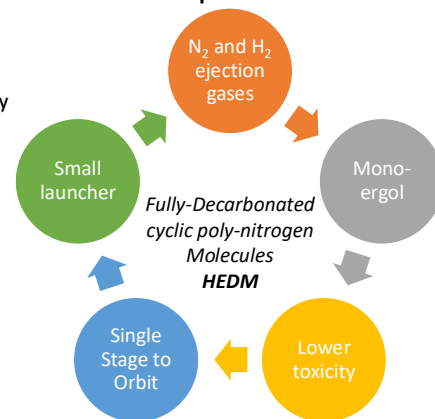
Catalytic N-N bond formation *via* a decarbonylative Ni-mediated process and application to polyazanes

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Université Claude Bernard Lyon 1, LHCEP[†] (UMR 5278), ICBMS team SCORE[‡] (UMR 5246)

The Future of Space Propulsion



CNES Principal Innovative Vector

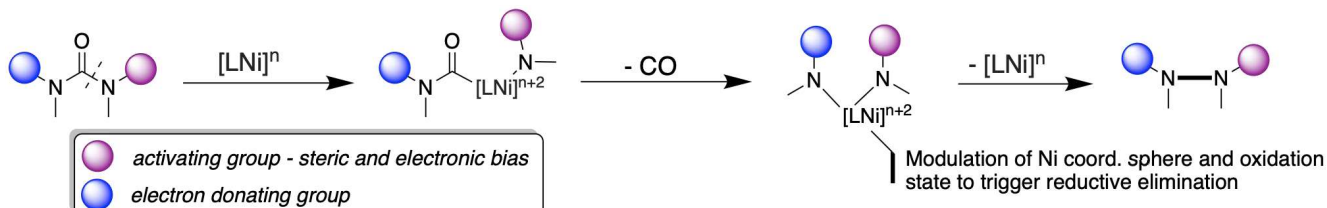


Ariane 6 propulsive system

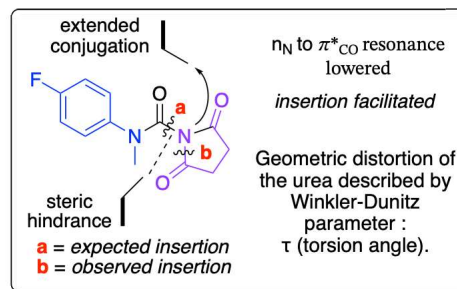
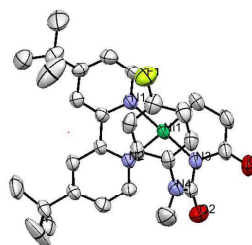
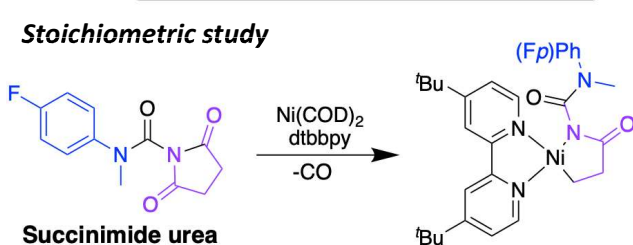
Technological breakthrough

Ariane Ultimate propulsive system

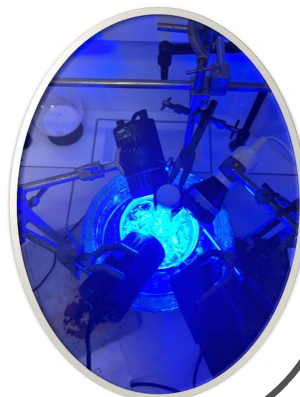
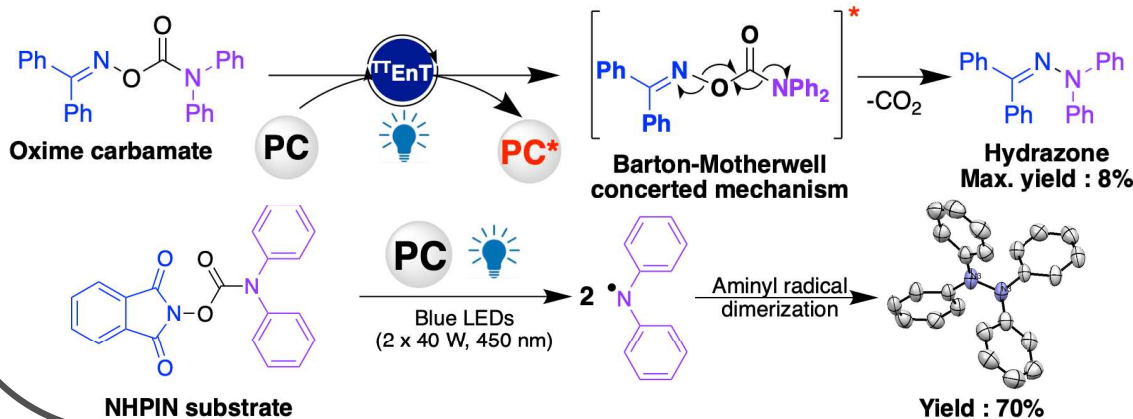
Intramolecular Ni-catalyzed N-N coupling : recombination after CO extrusion^a



Stoichiometric study



Photoinduced N-N Bond Formation^{b,c}



Conclusion



HEDMs are required for greener, safer, smaller, reusable and more efficient launchers → technical breakthrough
 HEDMs chemistry of polynitrogen compounds is very complex and difficult → Poor literature data
 HEDMs are key for the future of space propulsion → global competitive challenge for space agencies