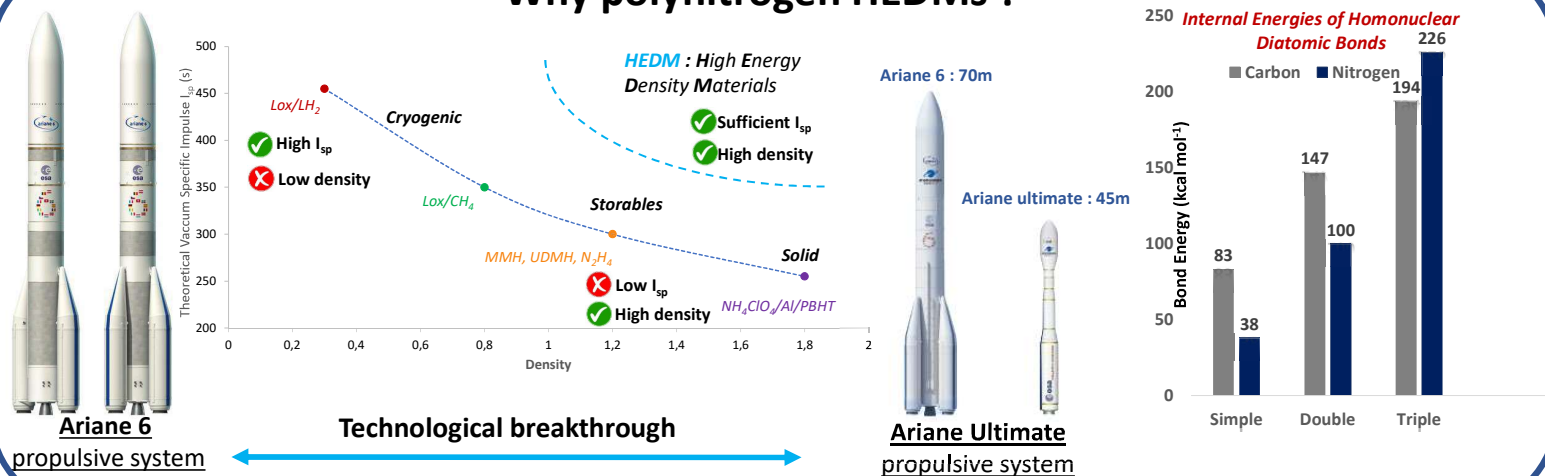


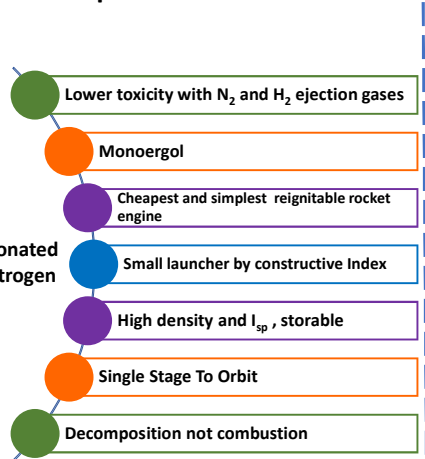
Future of space propulsion: toward Polynitrogen High Energy Density Materials

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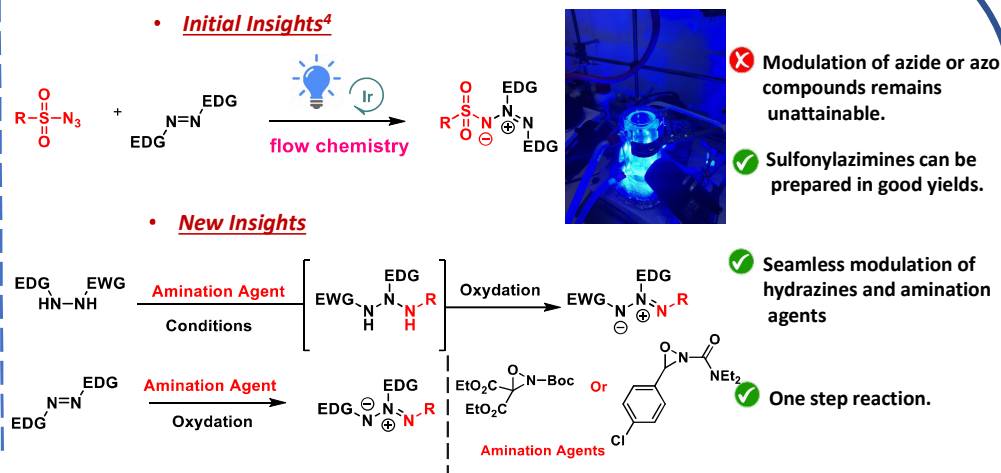
Why polynitrogen HEDMs ?



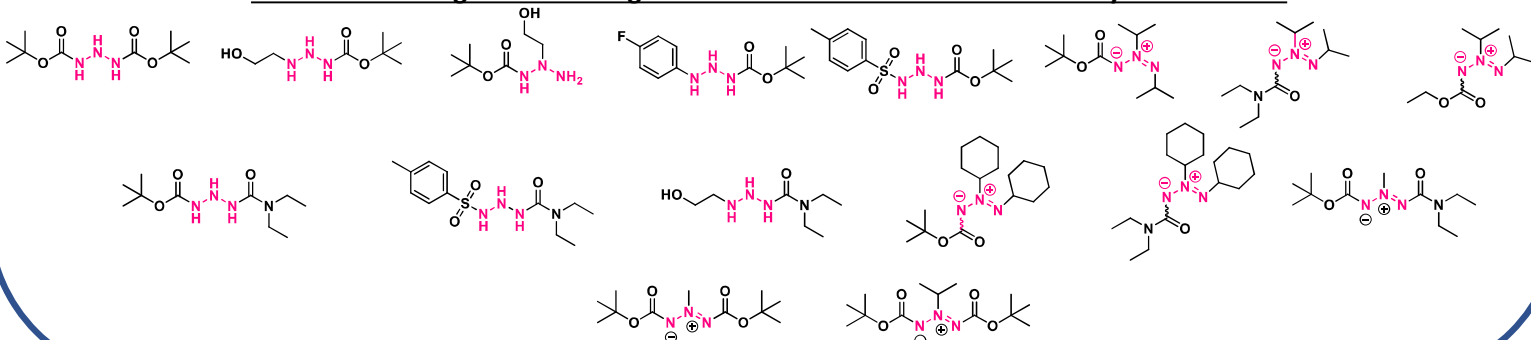
CNES Principal Innovative Vector



Pathways to High-Energy Density Materials: Key Components



Potential Building Blocks: Nitrogen-Rich Molecules as Precursors to Polyazotic HEDMs



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 for reactivity.**
→ **Lots of by-products, unstability of reactants and products.**

HEDMs are key for the future of space propulsion and space exploration → **Global competitive challenge for space agencies.**