DMM effect on ammonia oxidation

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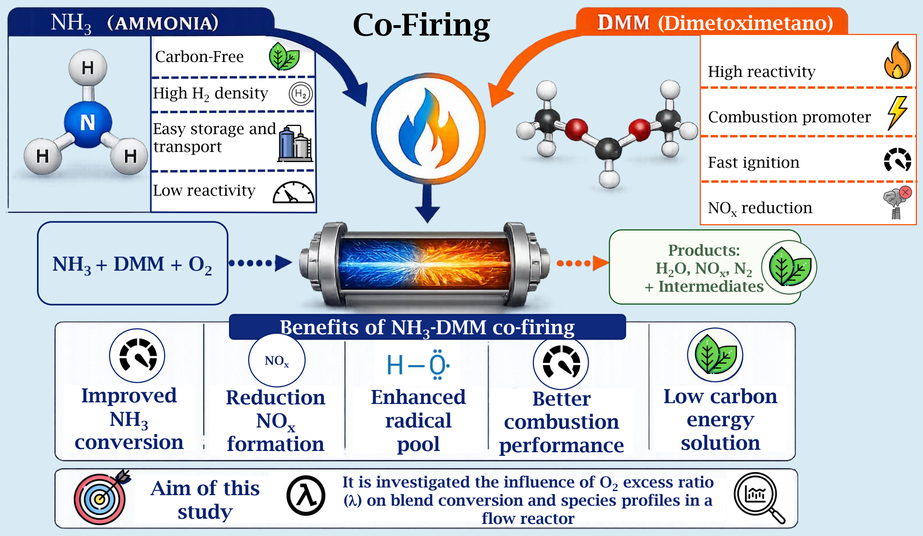
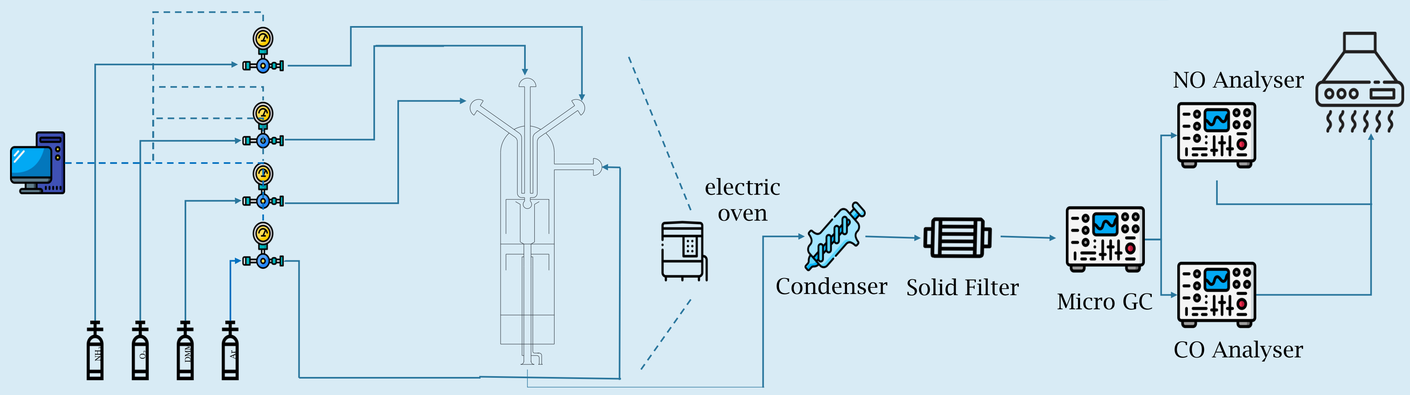
Introduction



Methodology

NH_3, ppm	DMM, ppm	λ	T, K	t_r, sec
1000	1000	0-3	825-1425	190/T(K)



Experimental + Simulation

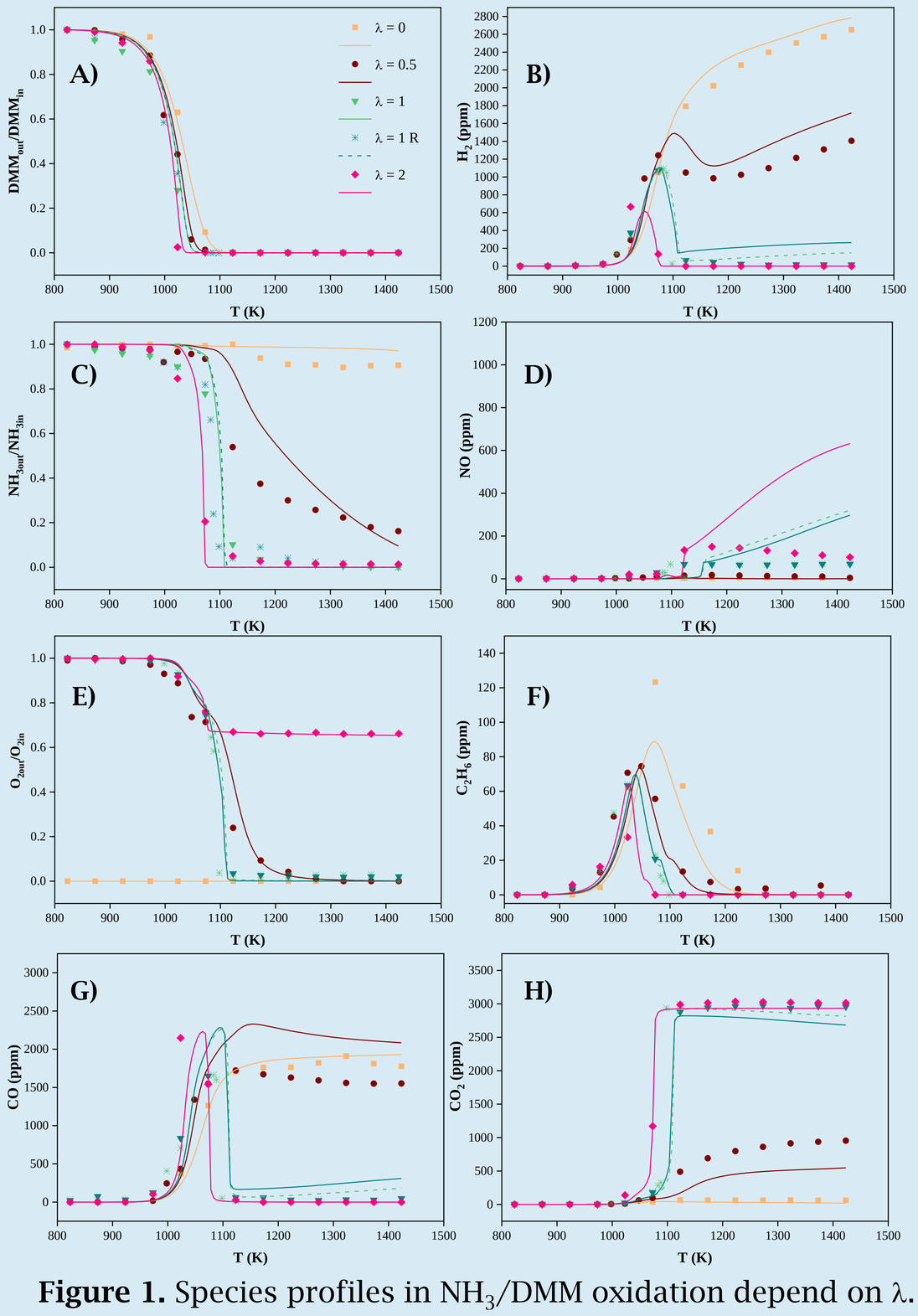


Figure 1. Species profiles in NH_3/DMM oxidation depend on λ.

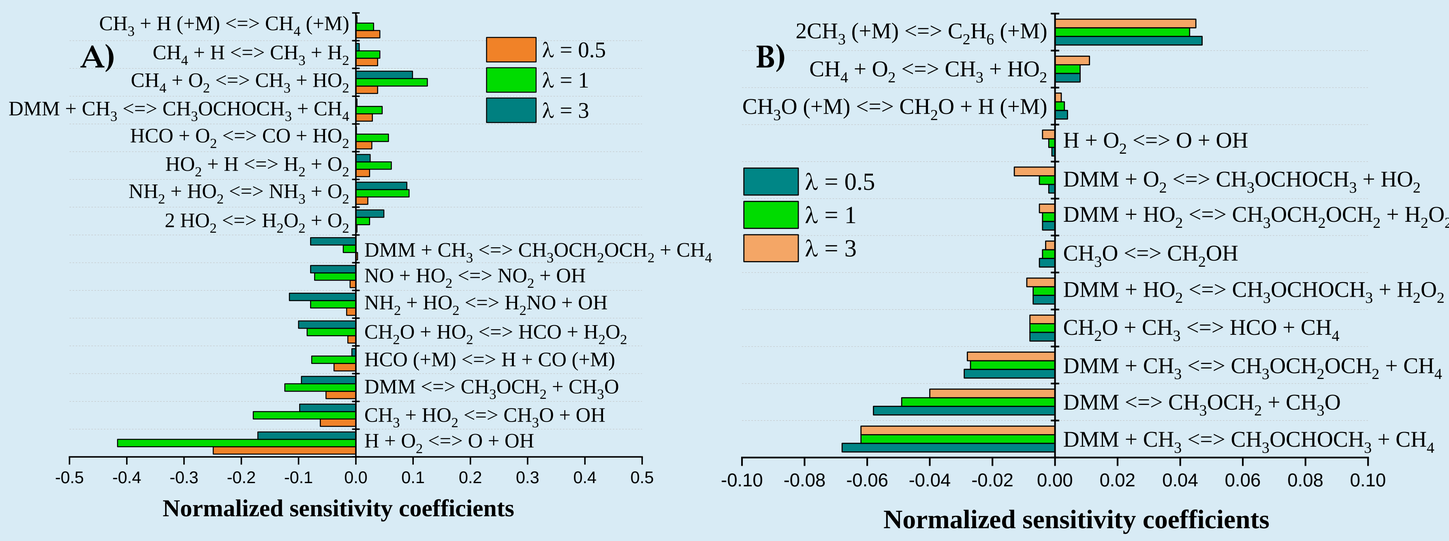


Figure 2. Sensitivity analysis of A) NH_3 and B) DMM.

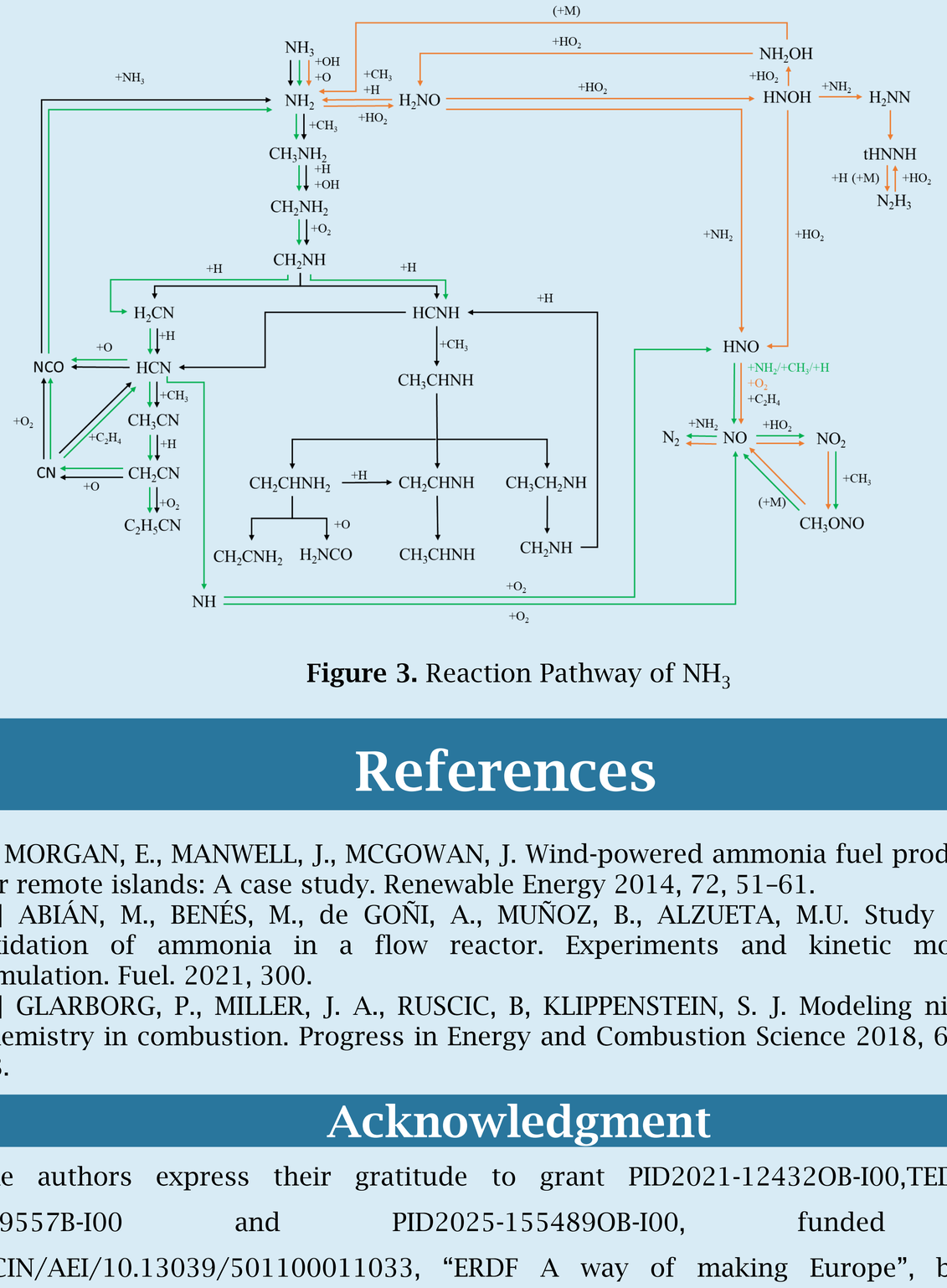


Figure 3. Reaction Pathway of NH_3

Conclusions

✓ **NH_3 reactivity is strongly governed by O_2 availability**, while DMM conversion remains largely unaffected by λ.

✓ **OH radicals drive NH_3 oxidation**, whereas DMM consumption mainly occurs through H-abstraction by CH_3 radicals.

✓ **The influence of DMM decreases under oxidizing conditions (λ > 1)**, where NH_3 oxidation pathways dominate.

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References

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