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Reply

Reply to Akay, G. Comment on "Meunier, F.C.; Kaddouri, A. Microwave-Assisted Oxidation of N_2 into NO_x over a La-Ce-Mn-O Perovskite Yielding Plasmas in a Quartz Flow Reactor at Atmospheric Pressure. *Catalysts* 2024, *14*, 635"

Frederic C. Meunier

CNRS, IRCELYON, Université Claude Bernard Lyon 1, 2 Av. Albert Einstein, 69626 Villeurbanne, France; fcm@ircelyon.univ-lyon1.fr

We thank Prof. Galip Akay for raising these useful references [1] which we disregarded, mostly because we focused on NO_x formation rather than that of NH_3. We are also indebted to him for correcting the fact that his $BaTiO_3$ perovskite was actually used unsupported, contrary to our earlier statement. We assert the claim that we were the first to report NO_x concentration up to 2 vol.% using such a simple configuration. Prof. Akay suggested that NO_2 would typically be twice the concentration of NO, but this is not a reliable assumption because this depends on the line dead-volumes and the time required for the NO_x mixture to reach the detector. NO would be the main NO_x component present at the very high plasma temperatures. NO_2 is thermodynamically favored at lower temperatures (below 400 °C [2]) and would subsequently be formed at low temperature through homogeneous gas-phase oxidation in the line dead-volumes before the detector.

Finally, the confusion about a spinel arose from the abstract by Prof. Akay itself, which reads, "High electrical potential activity within $BaTiO_3$ particles is observed through the formation of electrical treeing. Plasma generation starts as soon as the supported catalyst is synthesized. Two conditions for plasma generation are observed: Metal/Silica molar ratio should be >1/2 and the resulting oxide should be spinel type." It must be said that the article [3] was quite long (i.e., 65 pages), and we sometimes got confused about which sample was being written about! We are looking forward to reading more articles from you on this very exciting topic.

Conflicts of Interest: The authors declare no conflict of interest.

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