



**Showcasing research from Professor Mingi Choi's laboratory,  
Department of Future Energy Convergence, Seoul National  
University of Science and Technology, Seoul, Republic of Korea.**

Recent advances and challenges in degradation issues of direct ammonia solid oxide fuel cells: comprehensive review

Direct ammonia solid oxide fuel cells (DA-SOFCs) are promising energy-conversion devices that serve as alternates to use green hydrogen. Ammonia can be directly utilized as a fuel, enabling more efficient operation with good performance. However, DA-SOFCs are characterized by poor durability with degradation issues, which are not exhibited in  $H_2$ -fueled SOFCs. Therefore, we reviewed recent progress and challenges related to DA-SOFCs, focusing more on various degradation issues in three aspects: 1) materials, 2) cells, and 3) stacks and systems to provide readers with motivation for the future research.

Image reproduced by permission of Mingi Choi from  
*J. Mater. Chem. A*, 2025, **13**, 20080.

### As featured in:



See Mingi Choi *et al.*,  
*J. Mater. Chem. A*, 2025, **13**, 20080.