

CORRECTION

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Correction: Lithium-mediated electrochemical dinitrogen reduction reaction

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Correction for 'Lithium-mediated electrochemical dinitrogen reduction reaction' by Muhammad Saqlain Iqbal et al., *Ind. Chem. Mater.*, 2023, DOI: <https://doi.org/10.1039/D3IM00006K>.

The authors regret that the incorrect permissions were provided in the figure captions of Fig. 1–15 in the original article. The correct versions of the figures, including the updated permissions, are shown below.

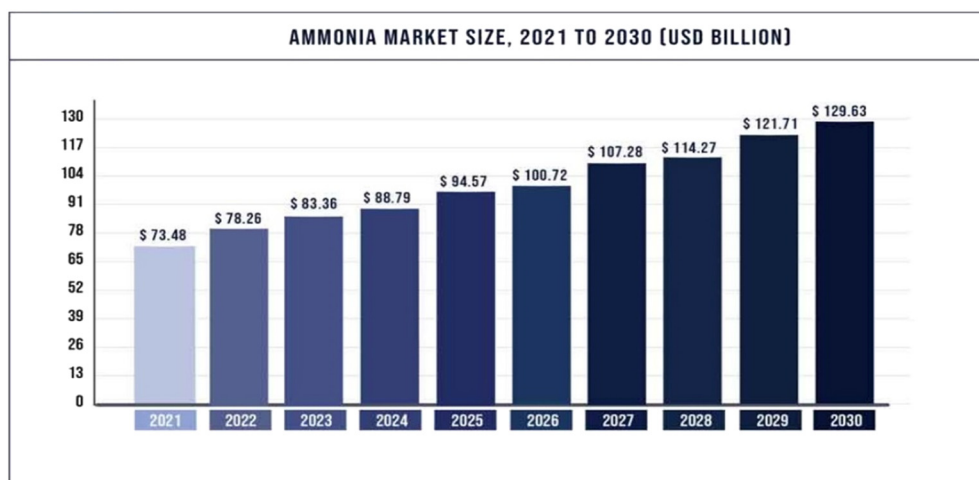


Fig. 1 Projected global ammonia demand growth from 2021 to 2030.² Copyright 2023, Precedence Research.

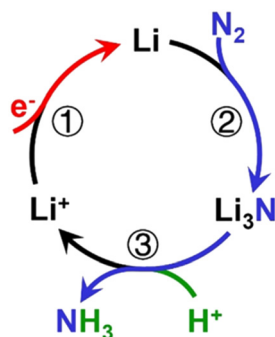


Fig. 2 Mechanism of catalytic recycling of lithium intermediates. Reproduced with permission.²³ Copyright 2021, Wiley-VCH.

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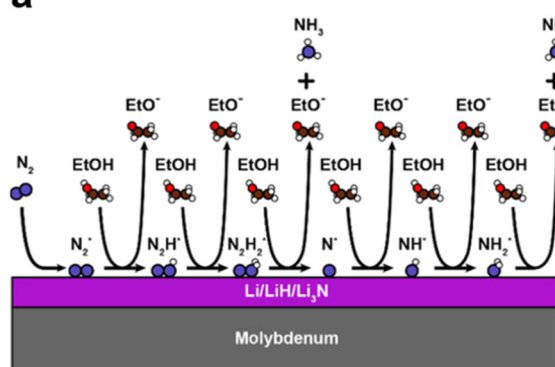
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a Heterogeneous Mechanism



b

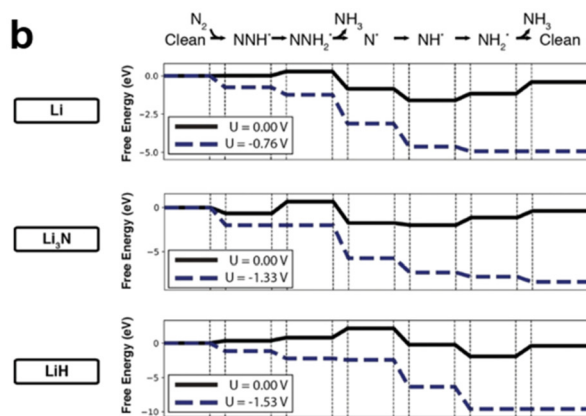


Fig. 3 (a) A 'Heterogeneous mechanism', in which there is a stable amount of lithium on the electrode at all times; (b) free energy diagram of NH_3 formation on the surfaces of Li, Li_3N , and LiH. The free energy diagram is represented through dash lines when the limiting potential is switched on. All of these surfaces are active for NH_3 synthesis. Reproduced with permission.⁴¹ Copyright 2020, Wiley-VCH.

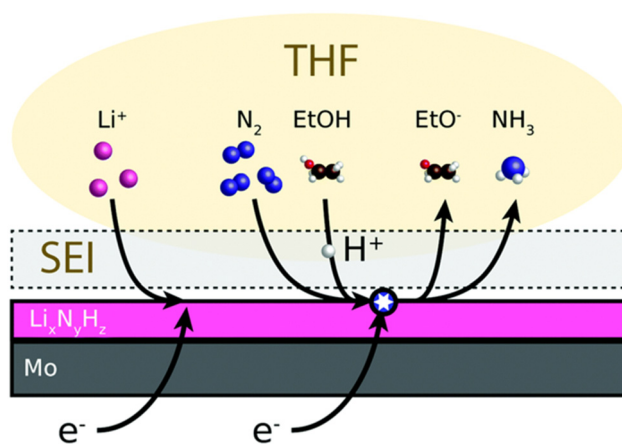


Fig. 4 Schematic of the mechanism for Li-e N_2 RR to NH_3 . A non-aqueous electrolyte (THF) contains lithium salt which is electrodeposited onto a metal electrode (Mo) as metallic Li. Reproduced with permission.³⁸ Copyright 2020, Royal Society of Chemistry.

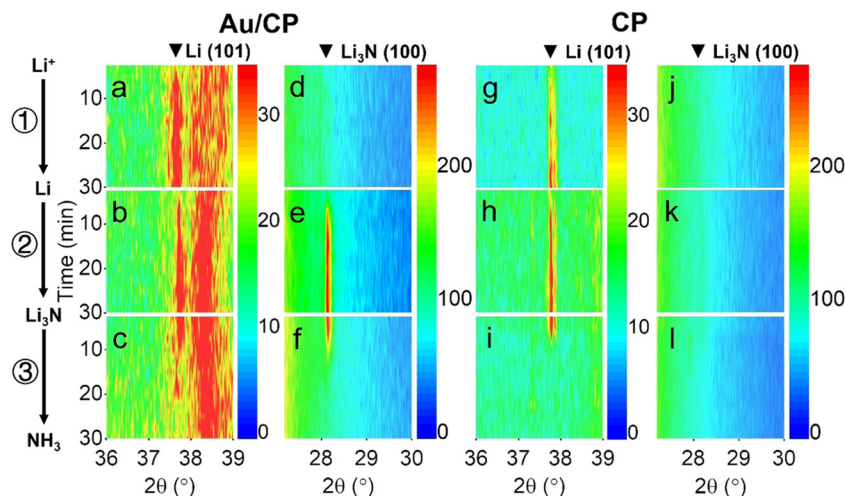


Fig. 5 *In situ* XRD contour maps of (a) and (d) Au/CP and; (g) and (j) CP under Ar atmosphere; (b) and (e) Au/CP and (h) and (k) CP under N_2 atmosphere without EtOH; (c) and (f) Au/CP and (i) and (l) CP under N_2 atmosphere with EtOH. Reproduced with permission.²³ Copyright 2021, Wiley-VCH.



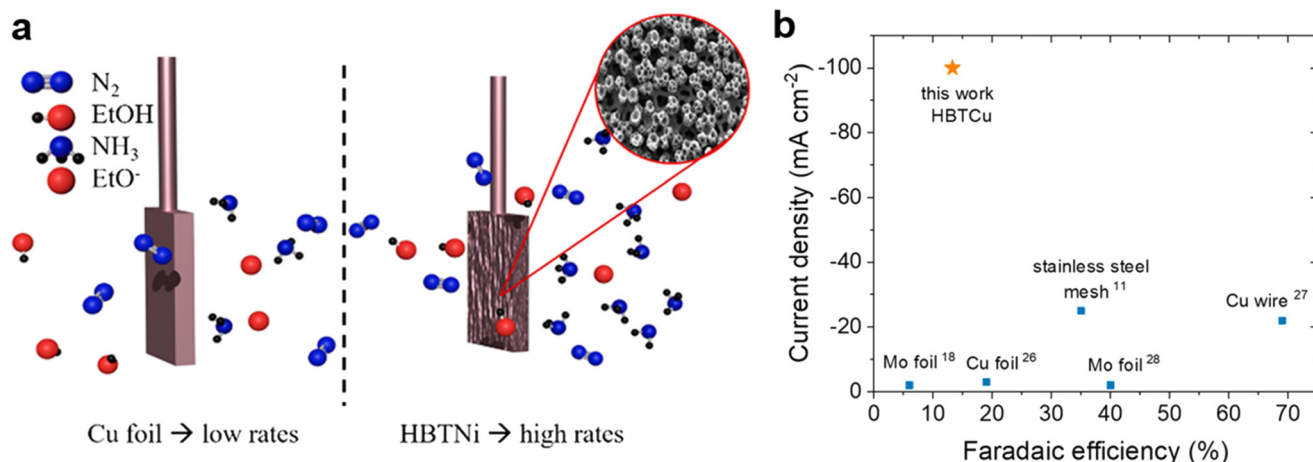


Fig. 6 (a) Illustration of Cu foil and HBT Cu for Li-mediated eN_2RR ; (b) comparison of HBT Cu and previously reported electrode materials in terms of current density and NH_3 FE. Reproduced with permission.⁵⁸ Copyright 2022, American Chemical Society.

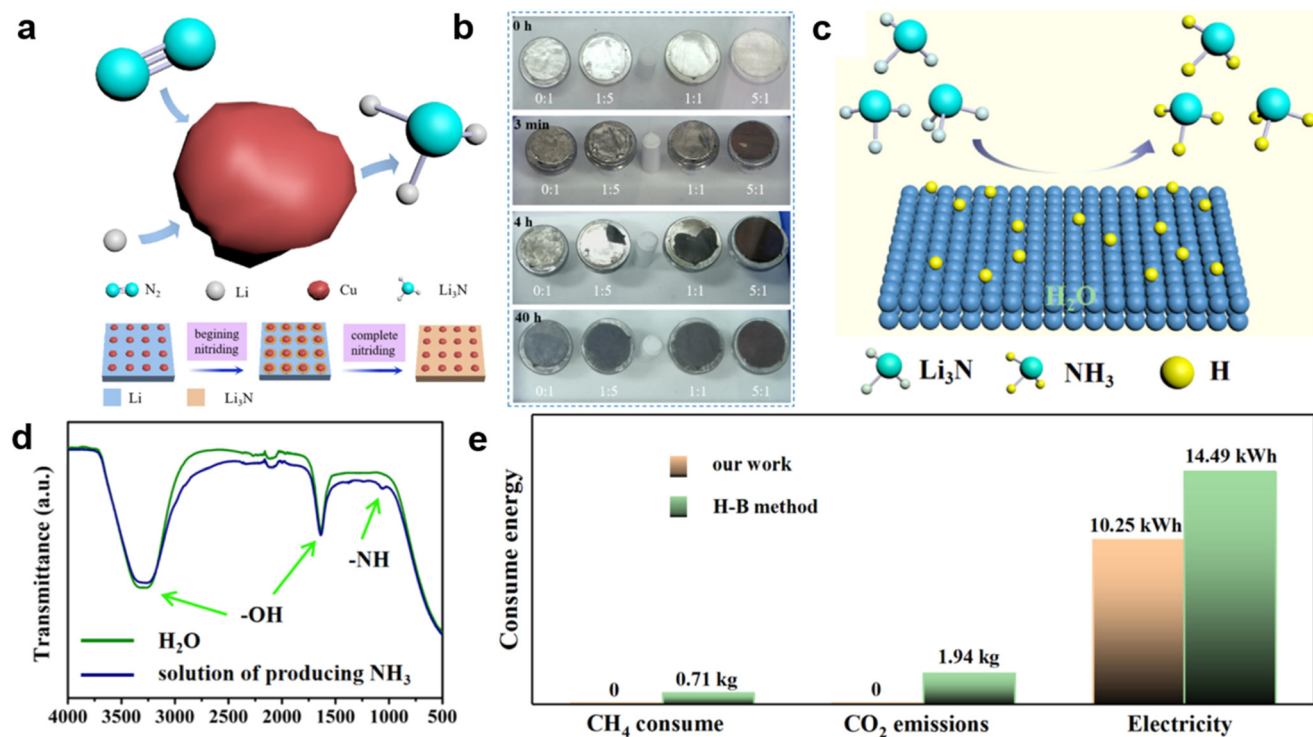


Fig. 7 (a) Illustration of Cu-catalyzed lithium nitridation (top panel) and steps for the formation of Li_3N/Cu from Li/Cu (bottom panel); (b) catalytic effect of Cu-to-Li mass ratio on the nitridation process; (c) illustration of NH_3 synthesis from the reaction of Li_3N and H_2O ; (d) infrared spectra of H_2O and the electrolyte solution after reaction; (e) comparison of this work with the H-B process in terms of energy consumption for production of 1 kg of NH_3 . Reproduced with permission.¹⁴ Copyright 2022, American Chemical Society.



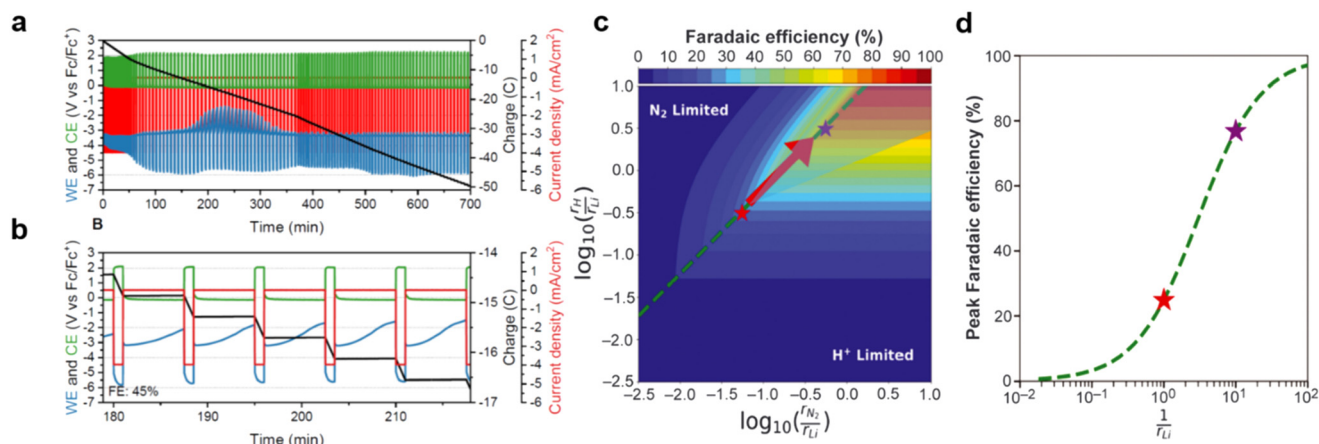


Fig. 8 (a) Cycling method between -2.0 and 0.0 mA cm^{-2} (red) for a total of 100 C of charge passed (black); (b) a close-up of the cycling; reproduced with permission.³⁸ Copyright 2020, Royal Society of Chemistry; (c) heatmap of the predicted FE against the ratio of N_2 to lithium (x axis) and proton to lithium (y axis) diffusion rates; (d) a one-dimensional plot of NH_3 FE cut along the optimal $r_{\text{N}_2}/r_{\text{H}}$ ratio. Reproduced with permission.⁵⁹ Copyright 2021, American Association for the Advancement of Science.

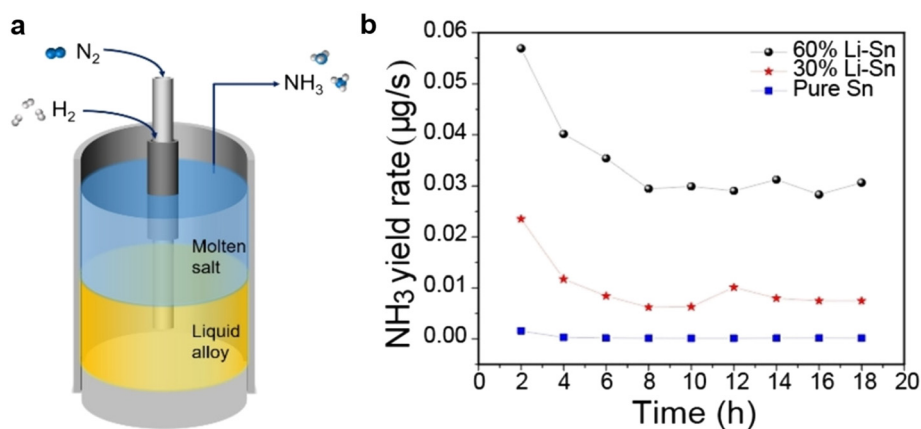


Fig. 9 (a) Graphical illustration of $\text{Li-eN}_2\text{RR}$ containing Li-Sn alloy and molten LiCl-KCl salt forming a biphasic system; (b) NH_3 yield rate against electrolysis time on Li-Sn and pure Sn . Reproduced with permission.⁶² Copyright 2021, Wiley-VCH.

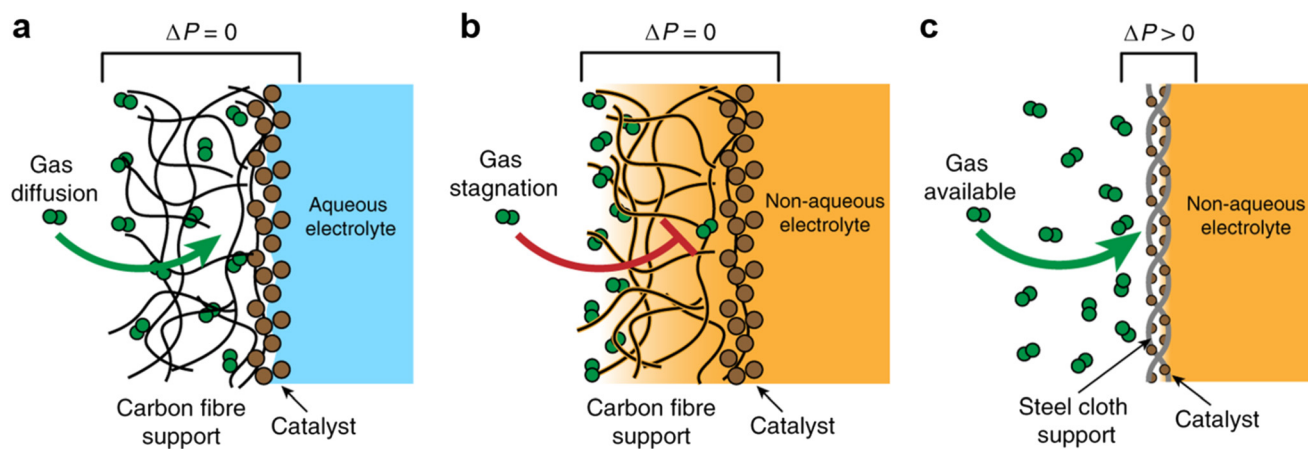


Fig. 10 (a) A hydrophobic GDE with an aqueous electrolyte; (b) a hydrophobic GDE with a non-aqueous electrolyte; (c) a catalyst-coated (SSC) GDE with a non-aqueous electrolyte. Reproduced with permission.²² Copyright 2020, Springer Nature.



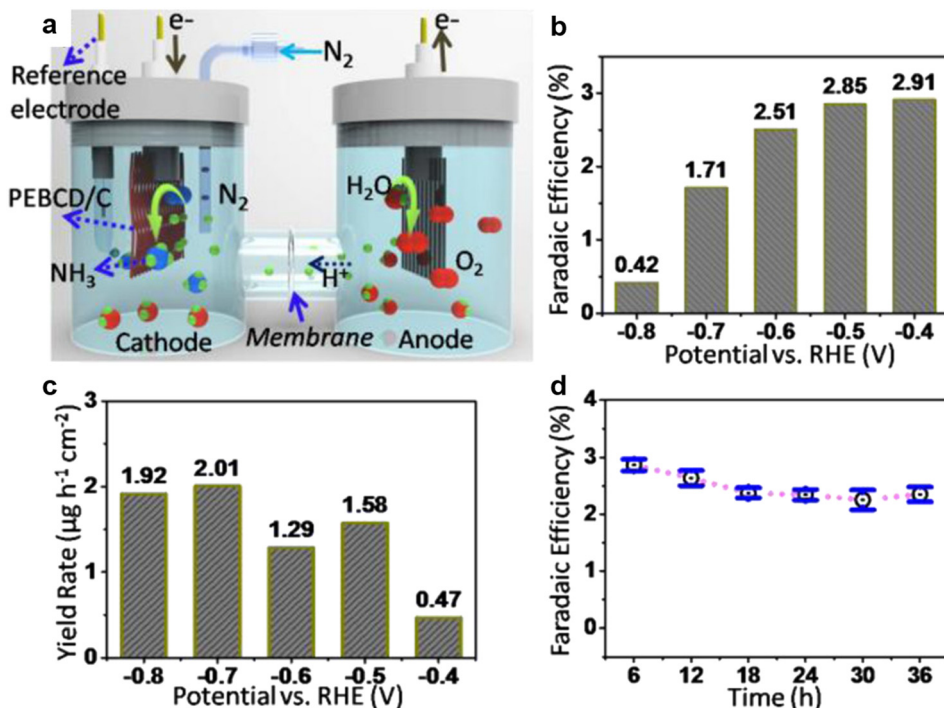


Fig. 11 (a) The graphic illustration of the configuration of the electrochemical cell for the eN₂RR process; (b) FEs of the Li⁺-PEBCD/CC catalyst at different potentials during the eN₂RR; (c) NH₃ yield rate against applied potential during the eN₂RR; (d) durability test results for Li⁺-PEBCD/CC. Reproduced with permission.³ Copyright 2017, American Chemical Society.

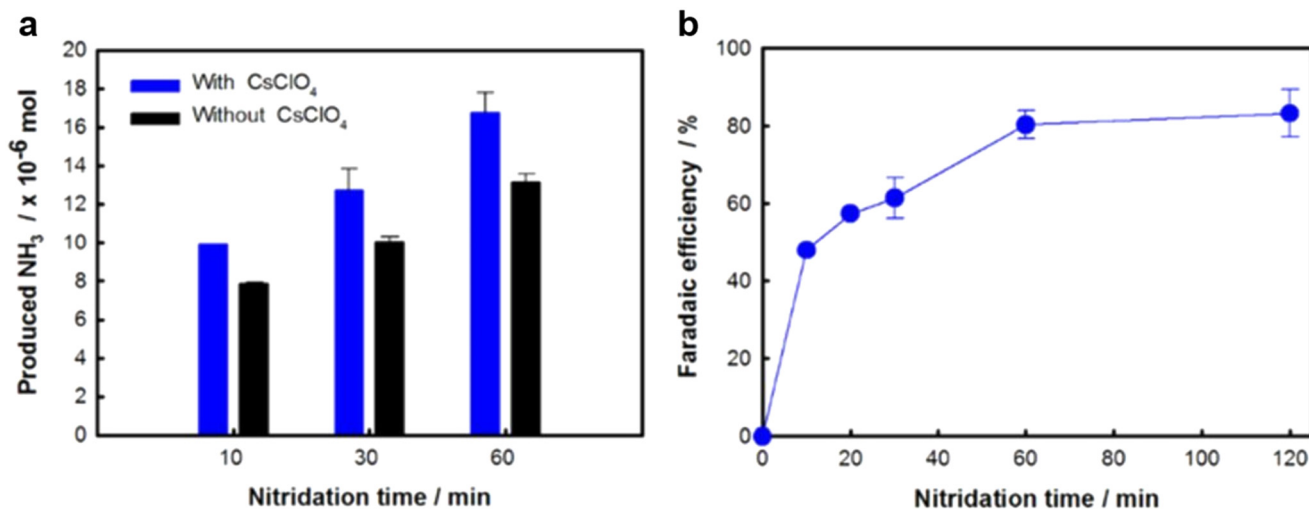


Fig. 12 (a) NH₃ yield and (b) NH₃ FE in the presence and absence of 0.03 M CsClO₄ at 220 °C over time. Reproduced with permission.⁸ Copyright 2018, IOP Publishing.



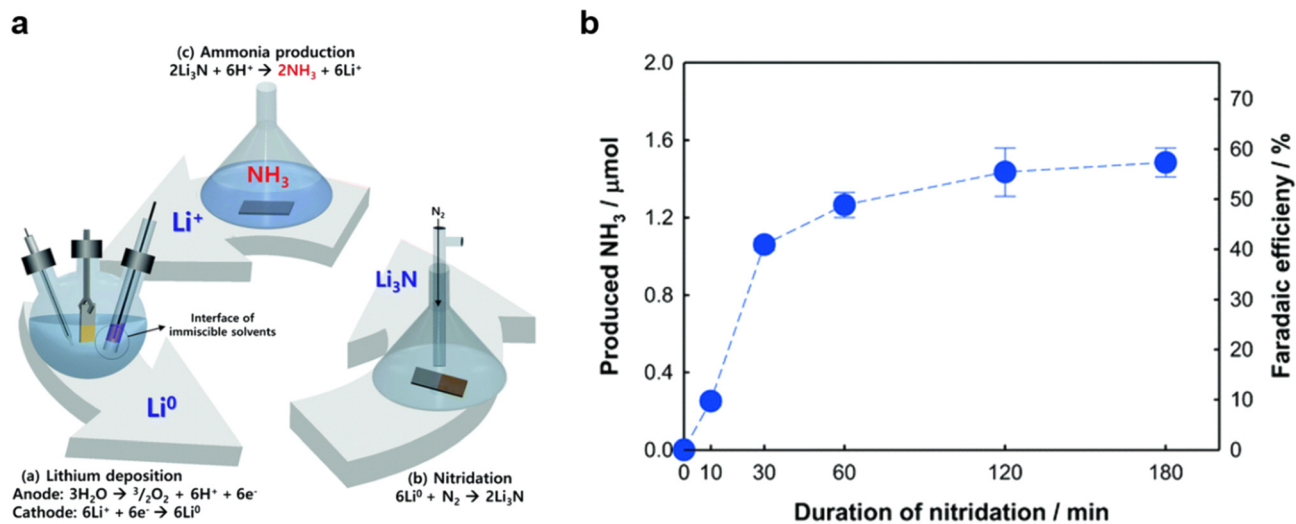


Fig. 13 (a) Schematic diagram and (b) NH₃ yield and FE of the biphasic hybrid catalytic system catalyzed by LiClO₄ (aq) and LiClO₄-PMMA composite. Reproduced with permission.⁶⁶ Copyright 2019, Royal Society of Chemistry.

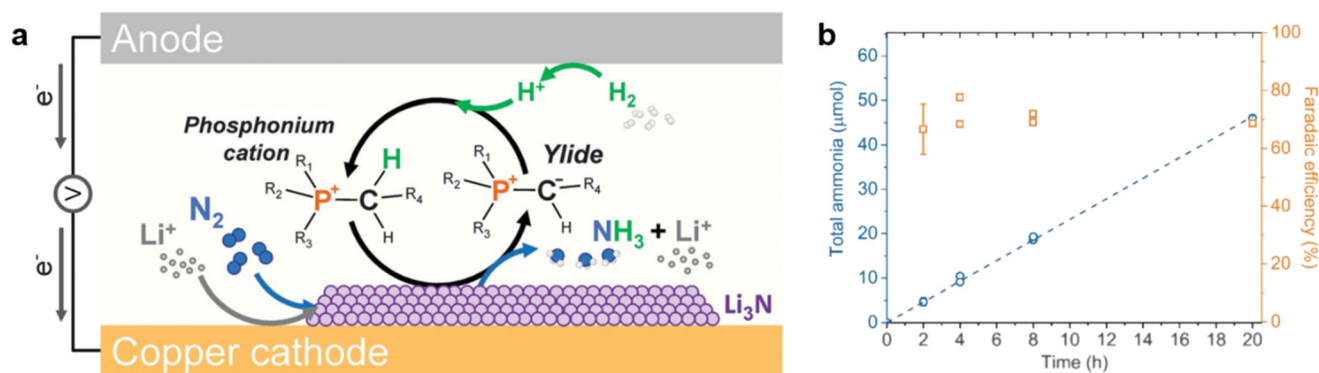


Fig. 14 (a) Schematic illustration of eN₂RR catalysis using a phosphonium salt; (b) NH₃ yield and FE as a function of time. Reproduced with permission.²⁴ Copyright 2021, American Association for the Advancement of Science.

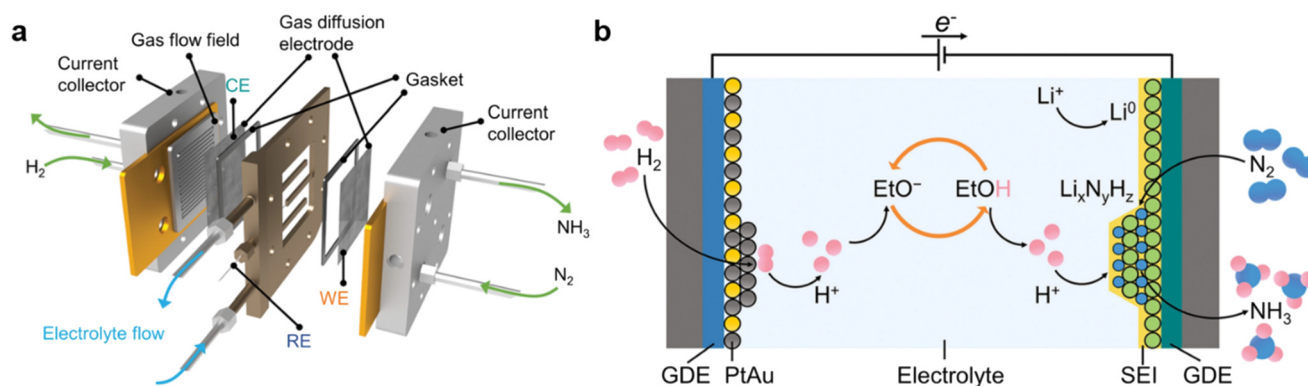


Fig. 15 (a) Expanded view of the continuous-flow electrolyzer configuration; (b) schematic process of the Li-NRR in a continuous-flow electrolyzer. Reproduced with permission.⁷² Copyright 2023, American Association for the Advancement of Science.

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