

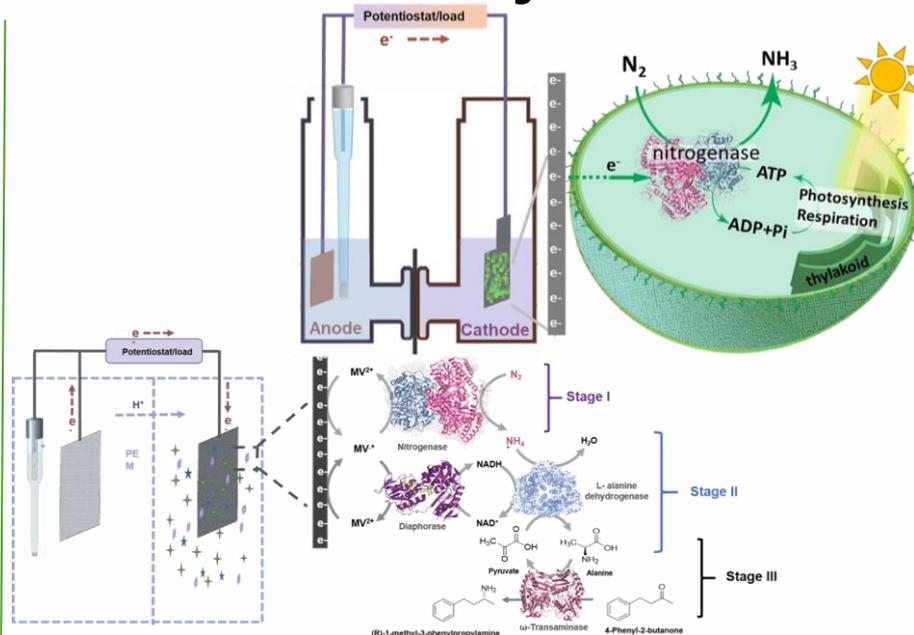
Bioelectrocatalysis for Sustainability

➤ Renewable Energy

- Enzyme engineering for biofuel oxidation for fuel cell and battery applications
- Developing materials strategies for promoting substrate channeling in catalytic cascades for energy storage and conversion
- Bioinformatics and synthetic biology approaches to improving extracellular electron transfer in microbial electrochemical applications including energy efficient bioremediation and self powered sensing

➤ Electrification of the chemical industry

- Design of enzymatic and microbial biocatalysts for electrosynthesis of commodity chemicals (ammonia), value-added chemicals (pharmaceuticals), and materials (biopolymers)
- Solar-assisted electrochemical production of value-added chemicals



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Recognitions

- ACS DAC Electrochemistry Award
- Fellow of AAAS, the Royal Society of Chemistry, Electrochemical Society, and the International Society of Electrochemistry
- Missouri Inventor of the Year
- Society of Electroanalytical Chemistry Reilley Award
- International Society of Electrochemistry Bioelectrochemistry Prize
- Academy of Science of St. Louis Innovation Award
- Editor-in-chief of ACS Au journals