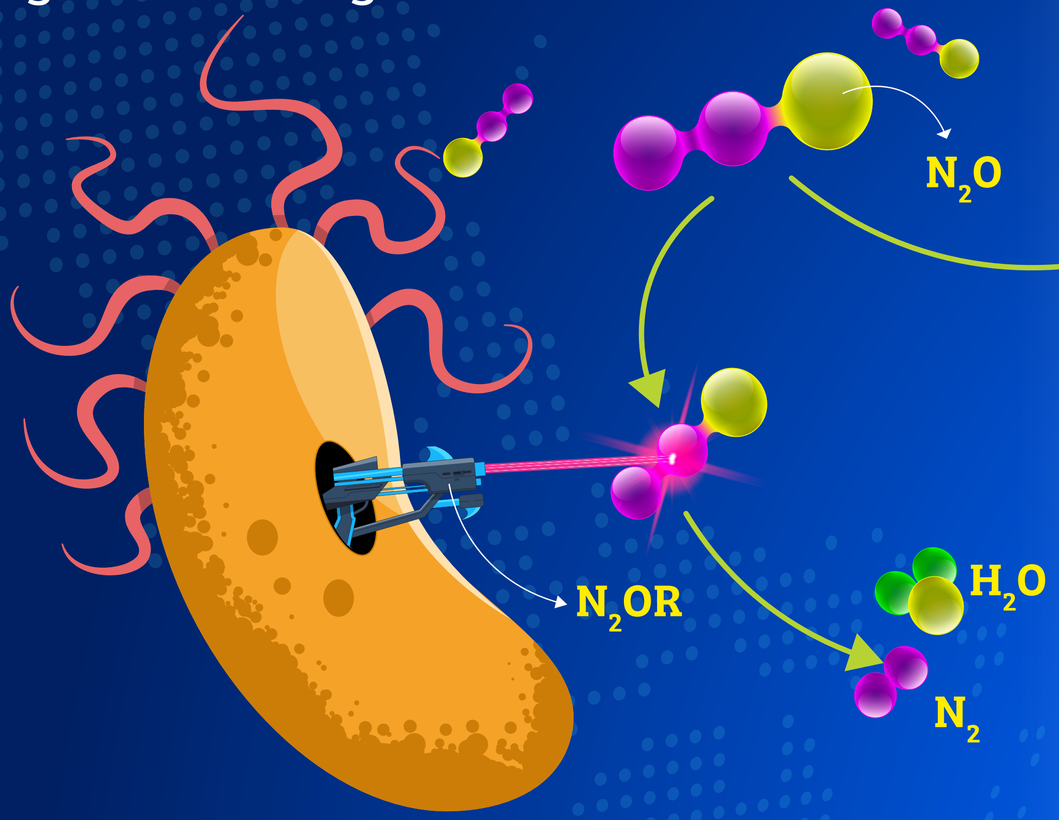
Synthetic Model System for Probing Bacterial Nitrous Oxide Fixation

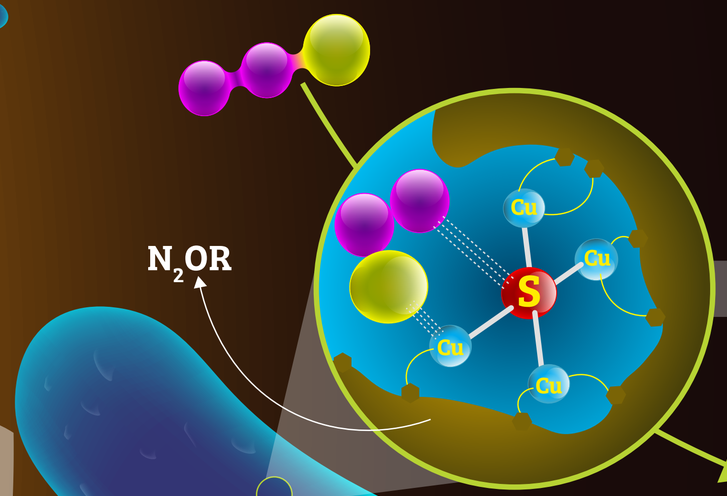
Human nitrous oxide (N_2O) emissions are a leading cause of ozone layer depletion and global warming



Many bacteria can metabolize N_2O with an enzyme called nitrous oxide reductase (N_2OR)

Details of N_2O reduction by the N_2OR enzyme active site are unclear

Synthetic CuZ model cluster for computationally modeling reaction mechanism and measuring electron distribution spectroscopically



Cooperative activation of N_2O across a Cu/S cluster edge

Knowing the chemical details of N_2OR has the potential to give rise to agricultural technologies that enhance the activity of natural N_2O-fixing bacteria

Chemical Science

Probing the Electronic and Mechanistic Roles of the μ 4-Sulfur Atom in a Synthetic CuZ Model System

Rathnayaka *et al.* (2020) | DOI: 10.1039/C9SC06251C

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