

Curiosity: Counting Electrons Is Like Auditing a Ledger

Curiosity Reading | CheAI Research Inc.

A Faraday-law calculation tracks a conserved accounting quantity: charge. A current-time record gives an amount of charge, and the Faraday constant converts it into an amount of electrons. A balanced half-reaction then states the electron-to-substance ratio in the model.

That chain is powerful because each link is inspectable. It is also limited. A paper calculation cannot by itself tell us whether every modeled electron followed one path, how a device was built, or why an observed amount differs. Scientists make stronger claims only after measuring the missing parts and reporting uncertainty.

Try this: explain to a partner why a result can be mathematically correct while still being an incomplete description of a real system.