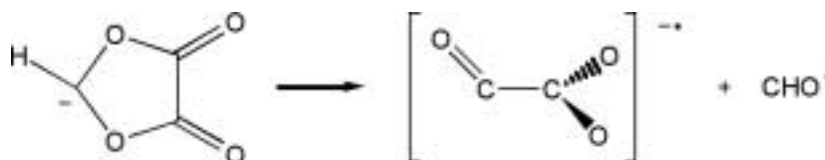


## C2O3 NEUTRALS: DO THEY EXIST?

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The neutral OCCO<sub>2</sub>, which is predicted to be stable, has not yet been detected experimentally. The OCCO<sub>2</sub> anion is reported to be formed from the co-condensation of laser ablated metal atoms and electrons with CO and CO<sub>2</sub> mixture in excess argon<sup>3</sup>. We have attempted to produce a neutral OCCO<sub>2</sub> of known bond connectivity by charge stripping of a negative ion precursor formed as shown below:



Theoretical calculations confirm the anion structure shown above.

Neutralisation of the anion [OCCO<sub>2</sub>]<sup>-</sup> followed by reionisation of the neutrals gives a positive ion spectrum dominated by CO<sup>+</sup> and CO<sub>2</sub><sup>+</sup>: no peak corresponding to the parent [OCCO<sub>2</sub>]<sup>+</sup> is observed.

Theoretical calculations indicate that there is a low-lying singlet and a triplet state of neutral OCCO<sub>2</sub>, but that both of them are unstable with respect to decomposition to ground state CO and CO<sub>2</sub>, and ground state CO and triplet CO<sub>2</sub> respectively.