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CORRECTION

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Correction: Spectroscopic observation of twocenter three-electron bonded (hemi-bonded) structures of $(H_2S)_n^+$ clusters in the gas phase

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Correction for 'Spectroscopic observation of two-center three-electron bonded (hemi-bonded) structures of $(H_2S)_n^+$ clusters in the gas phase' by Dandan Wang et al., Chem. Sci., 2017, 8, 2667–2670.

The authors regret that some important references were omitted from the original article. These references are presented herein.

The experimental observation of the sulfur-sulfur hemi-bond was pioneered by Asmus and coworkers. ¹⁻⁶ They observed transient absorption due to the $\sigma^*-\sigma$ electronic transition in solution. Moreover, they observed the transient absorptions of the hemi-bonds of sulfa with a variety of counter atoms as well as those of N–N and I–I hemi-bonds. ⁷⁻¹¹ The electronic spectrum of $(H_2S)_2^+$ in aqueous solution was also reported by Asmus, though detailed structural information is difficult to extract from the broadened electronic transition.³

The S–S hemi-bond in gas phase molecules was first reported using mass spectrometry.⁵ The stable dimer cation formation of bis(isopropyl)sulfide was observed and hemi-bond formation was proposed on the basis of the fragmentation pattern. Gas phase dimerization equilibrium measurement of dimethyl sulfide cations has also suggested formation of the S–S hemi-bond.¹² Very recently, infrared Stark spectroscopy was applied to Cl–NH₃ in He droplets,¹³ and hemi-bond formation was concluded by the shift of the NH stretch and dipole moment measurements. This result is consistent with the prediction by high level computation of similar systems.¹⁴

Theoretical calculations of the S–S hemi-bond were first performed by Clark for $(H_2S)_2^+$, ¹⁵ and the series of his study has been extended to a variety of hemi-bonded systems. ^{16–18}

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

References

- 1 D. Bahnemann and K.-D. Asmus, J. Chem. Soc., Chem. Commun., 1975, 238-239.
- 2 K.-D. Asmus, Acc. Chem. Res., 1979, 12, 436-442.
- 3 S. A. Chaudri and K.-D. Asmus, Angew. Chem., Int. Ed., 1981, 20, 672-673.
- 4 M. Göbl, M. Bonifačić and K.-D. Asmus, J. Am. Chem. Soc., 1984, 106, 5984-5988.
- 5 T. Drewello, C. B. Lebrilla, H. Schwarz, L. J. de Koning, R. H. Fokkens, N. M. M. Nibbering, E. Anklam and K.-D. Asmus, *J. Chem. Soc., Chem. Commun.*, 1987, 1381–1383.
- 6 K.-D. Asmus, in *Sulfur-Centered Reactive Intermediates in Chemistry and Biology, NATO-ASI Series, Series A: Life Sciences*, Springer, 1990, pp. 155–172.
- 7 M. Bonifačić and K.-D. Asmus, J. Chem. Soc., Perkin Trans. 2, 1980, 758-762.
- 8 K.-D. Asmus, M. Göbl, K.-O. Hiller, S. Mahling and J. Mönig, J. Chem. Soc., Perkin Trans. 2, 1985, 641-646.
- 9 H. Hungerbühler, S. N. Guha and K.-D. Asmus, J. Chem. Soc., Chem. Commun., 1991, 999-1001.
- 10 R. W. Alder, M. Bonifačić and K.-D. Asmus, J. Chem. Soc., Perkin Trans. 2, 1986, 277-284.
- 11 H. Mohan and K.-D. Asmus, J. Am. Chem. Soc., 1987, 109, 4745-4746.
- 12 A. J. Illies, P. Livant and M. L. McKee, J. Am. Chem. Soc., 1988, 110, 7980-7984.
- 13 C. P. Moradi, C. Xie, M. Kaufmann, H. Guo and G. E. Douberly, J. Chem. Phys., 2016, 144, 164301.
- 14 J. L. Li and H. Guo, J. Chem. Phys., 2013, 138, 141102.

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- 15 T. Clark, J. Comput. Chem., 1981, 2, 261-265.
- 16 T. Clark, J. Comput. Chem., 1982, 3, 112-116.
- 17 T. Clark, J. Comput. Chem., 1983, 4, 404-409.
- 18 T. Clark, J. Am. Chem. Soc., 1988, 110, 1672–1678.