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CORRECTION

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Correction: Infrared spectroscopy for understanding the structure of Nafion and its associated properties

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Correction for 'Infrared spectroscopy for understanding the structure of Nafion and its associated properties' by Tanya Agarwal *et al.*, *J. Mater. Chem. A*, 2024, https://doi.org/10.1039/D3TA05653H.

The authors regret that the original article contained some misinterpretations of two cited publications, which they have since been made aware of in conversation with the authors of said works. As such, amendments to the main article text need to be made in the following locations – first, with regards to ref. **36** (reproduced here as ref. 1):

1. Section 3.1.1/paragraph 1

Original text: "Density Functional Theory (DFT) calculations performed using X3LYP exchange correlation functional taking $\lambda = 3$ show that 1060 cm^{-1} is dominated by the asymmetric stretching of the side chain ether group coupled to SO_3^- symmetric stretching in agreement with findings of other groups."

Correction: "Density Functional Theory (DFT) calculations performed using X3LYP exchange correlation functional show that 1060 cm^{-1} is dominated by the asymmetric stretching of the side chain ether group coupled to SO_3^- symmetric stretching in agreement with findings of other groups."

2. Section 3.1.2/paragraph 2

Original text: "Webber *et al.*…that the groups at 983 cm^{-1} and 970 cm^{-1} were dominated by $-SO_3^-$ symmetric stretching coupled to the ether group mode."

Correction: "Webber *et al.*…that the experimentally observed 970 cm^{-1} band is dominated by $-SO_3^-$ symmetric stretching coupled to the ether group mode."

3. Section 3.1.2/paragraph 4

Original text: "The 980 cm^{-1} mode was not found to change much with hydration. This indicates that the 980 cm^{-1} mode might not be dominated by the $-SO_3^-$ symmetric stretching as calculated by Webber *et al.* and others."

Correction: "The 980 cm^{-1} mode was not found to change much with hydration: the COC group, tethered to the backbone, does not have internal coordinates that are mechanically coupled to the distant $-SO_3^-$ group."

Second, with regards to ref. **39** (reproduced here as ref. 2):

4. Section 3.1.1/paragraph 1

Original text: "Loupe *et al.* found 1060 cm^{-1} to be dominated by the C–O–C mode based on their DFT calculations for $\lambda = 4$."

Correction: "Loupe *et al.* found 1060 cm^{-1} to be dominated by the C–O–C mode based on their DFT calculations."

5. Fig. 8 caption

Original text: "DFT calculated spectra for fully dehydrated (blue) and fully hydrated membrane (red)."

Correction: "Transmission FTIR spectra for fully dehydrated (blue) and fully hydrated Nafion-H 212 (red)."

6. Section 3.1.2/paragraph 4

Original text: "The modes at 910 cm^{-1}, and 970 cm^{-1} were found to be a strong function of hydration with C_1 (single functional group mode) dominating below $\lambda = 3$ and C_{3V} (three-fold local symmetry) dominating above it."

Correction: "The bands at 910 (C_1 mode) and 970 (C_{3V} mode) cm^{-1} were found to be a strong function of hydration. C_1 modes refer to the SO_3H group with no local symmetry. C_{3V} modes refer to the SO_3^- group with three-fold symmetry".

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

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References

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2 N. Loupe, K. Abu-Hakmeh, S. Gao, L. Gonzalez, M. Ingargiola, K. Mathiowetz, R. Cruse, J. Doan, A. Schide, I. Salas, N. Dimakis, S. S. Jang, W. A. Goddard III and E. S. Smotkin, Group Vibrational Mode Assignments as a Broadly Applicable Tool for Characterizing Ionomer Membrane Structure as a Function of Degree of Hydration, *Chem. Mater.*, 2020, **32**(5), 1828–1843.