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CORRECTION

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Correction: Tuning aprotic solvent properties with long alkyl chain ionic liquid for lithium-based electrolytes

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Correction for 'Tuning aprotic solvent properties with long alkyl chain ionic liquid for lithium-based electrolytes' by Tuanan C. Lourenço *et al.*, *J. Mater. Chem. A*, 2022, **10**, 11684–11701, https://doi.org/10.1039/D1TA10592B.

The authors regret a notation error in the ionic conductivity equation (eqn (6)) in the original article, in which the sum indices are incorrect. The corrected eqn (6) is shown below:

$$\sigma = \frac{1}{6Vk_BT}\lim_{t\to\infty}\frac{d}{dt}\left\langle \sum_{i=1}^{N_i}\sum_{j=1}^{N_j} q_i q_j \Delta \boldsymbol{r}_{ij}(t)\right\rangle, \tag{6}$$

$$\Delta \boldsymbol{r}_{ij}(t) = \left[\boldsymbol{r}_i(t) - \boldsymbol{r}_i(0)\right]\cdot\left[\boldsymbol{r}_j(t) - \boldsymbol{r}_j(0)\right],$$

Moreover, the authors regret that the labels of the experimental $[C_{16}mim][Br]$ ionic liquid concentrations in the electrolyte samples are incorrect in the original article and ESI. To correct this mistake, all labels of experimental electrolyte concentrations must be multiplied by a factor of 0.702. For example, the experimental $[C_{16}mim][Br]$ ionic liquid concentrations are incorrect in Section 2.2.2 sentence "Electrolytes were prepared with 0.1000 M $LiClO_4$ and concentrations of 0.000, 0.050, 0.500, 1.456 and 3.369 M $[C_{16}mim][Br]$ in DMSO." The corrected sentence should instead read as follows: "Electrolytes were prepared with 0.1000 M $LiClO_4$ and concentrations of 0.000, 0.035, 0.351, 1.022 and 2.366 M $[C_{16}mim][Br]$ in DMSO."

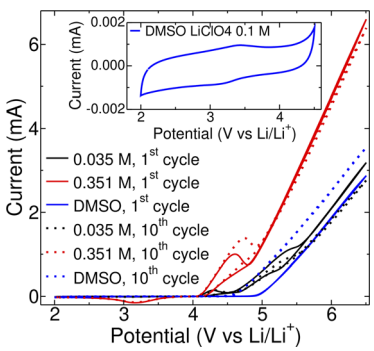

Fig. 2 Cyclic voltammetry on glass carbon working electrode performed at 50 mV s^{-1} under argon atmosphere. The electrolyte was DMSO/$LiClO_4$ 0.100 M (blue line); adding 0.035 M $[C_{16}mim][Br]$ (black line) and 0.351 M $[C_{16}mim][Br]$ (red line). (Inset) Cyclic voltammogram for DMSO/$LiClO_4$ 0.100 M recorded in the potential range of DMSO stability (2.00 V to 4.50 V *vs.* Li/Li^+).

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The authors would like to highlight that this error affects only the labels of the experimental electrolyte samples. The experimental [C_{16}mim][Br] ionic liquid concentrations in the electrolyte samples are therefore also incorrect in Fig. 2, 3, 4 and 10 in the original article. The corrected Fig. 2, 3, 4 and 10 are as shown below:

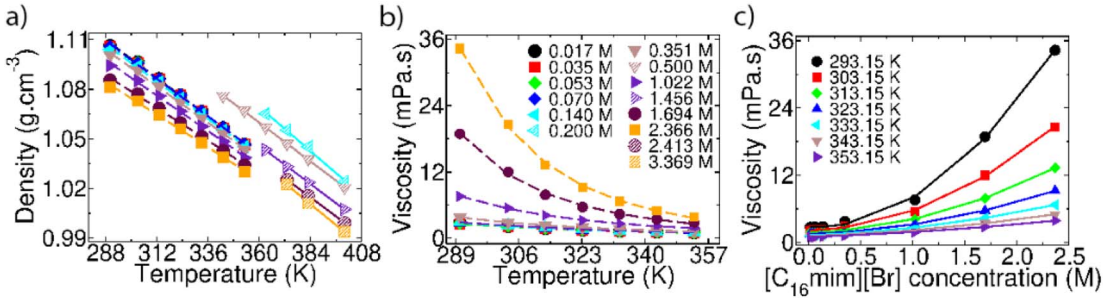

Fig. 3 (a) Densities and (b) viscosities for DMSO/$LiClO_4$ 0.100 M as function of temperature and (c) [C_{16}mim][Br] concentration. The filled and hatched symbols are experimental and MD data, respectively. The dashed lines in the experimental densities and viscosities are the linear and the VTF fittings, while the straight lines are just guides to the eye.

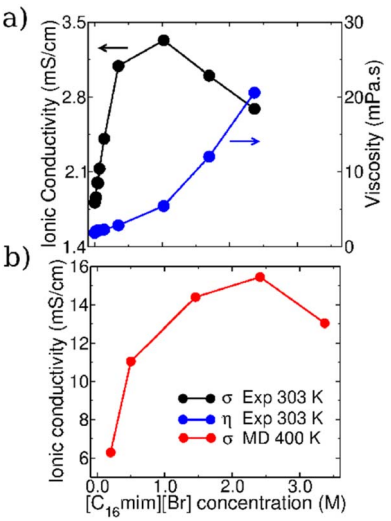

Fig. 4 Ionic conductivities and viscosities for the DMSO/$LiClO_4$ 0.100 M system as a function of the [C_{16}mim][Br] concentration. (a) Black and blue circles are, respectively, the experimental ionic conductivities and viscosity at 303 K. (b) The red circles are the MD ionic conductivity at 400 K.

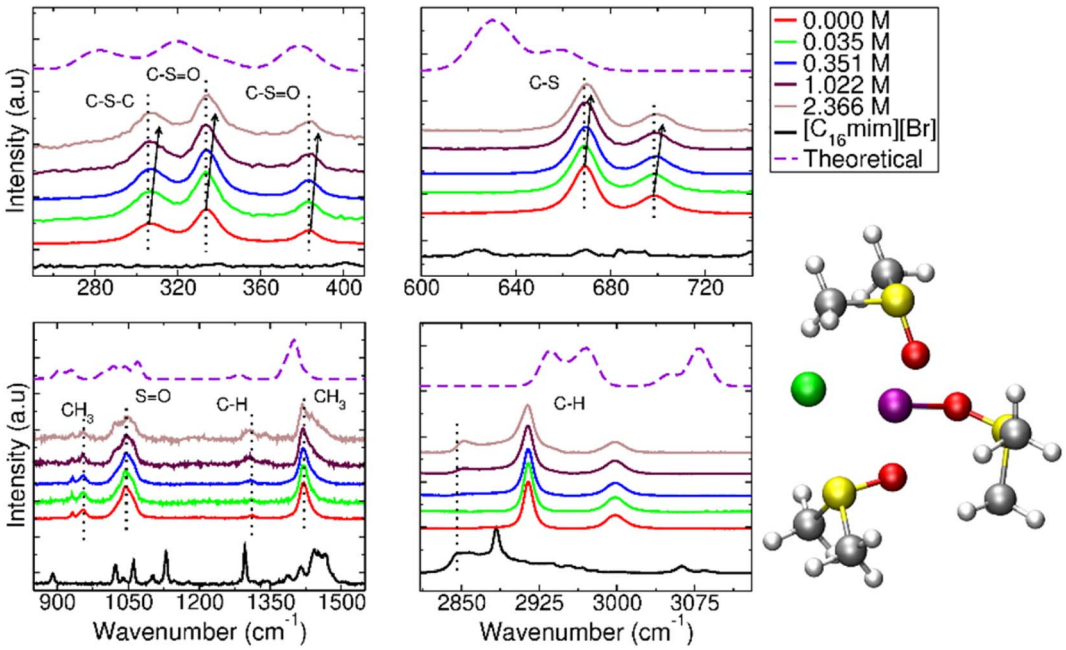

Fig. 10 Experimental and theoretical Raman spectra for the DMSO/$LiClO_4$ 0.100 M. Red, yellow, gray, white, purple, and green spheres indicate oxygen, sulfur, carbon, hydrogen, lithium-ion, and bromide atoms, respectively.

These errors do not affect the theoretical results, the original discussion, or the main conclusions of the paper. All experimental conclusions and the correlation between theoretical and experimental data are preserved. The authors regret any inconvenience that these errors may have caused to the readers.

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