Supporting Information

Quantitative electronic structure and work-function changes of liquid water induced by solute

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Figures

**Figure SI-1:** The same data for NaI(aq) as in Fig. 1, but here the intensity is shown as measured. The water signal decreases with higher NaI concentration.

**Figure SI-2:** The same data for TBAI(aq) as shown in Fig. 5, but here the intensity is shown as measured. Similar to NaI, the water signal decreases with higher TBAI concentration.
Figure SI-3: Exemplary fits to the spectra: A) 8 M NaI solution, B) 35 mM TBAI solution, and C) neat water (i.e., with only 50 mM NaI added for charge compensation and to enable sample biasing); measured data in black, the overall fit in red, water-band features in green, and the I\(^{1}\) 5p doublet peak in violet. See text for details.
Figure SI-4: The same data for TBAI\textsubscript{(aq)} as in Figs. 5B and SI-2B but aligned to the same 1b\textsubscript{1} peak position for better comparison of spectral changes with increasing concentration. The grey curve shows the difference between the 35-mM TBAI\textsubscript{(aq)} and neat water spectrum, which we assign to TBA\textsuperscript{+}. 