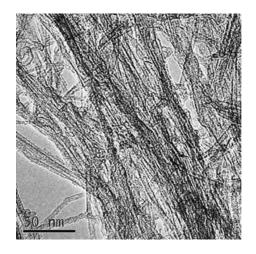
## **SUPPORTING INFORMATION**

A Highly Viscous Imidazolium Ionic Liquid inside Carbon Nanotubes

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Figure S1. TEM image and diameter distribution evaluated from 200 CNTs in the TEM image.



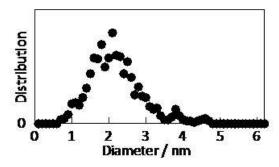


Figure S2. The simulated double-walled carbon nanotubes, (a) CNT (22,22) and (b) CNT (10,10) filled with 1-ethyl-3-methylimidazolium chloride. Atom atoms of cation are red, chlorine atoms are blue, CNT atoms are displayed as wires, RTIL outside CNTs is omitted for clarity.

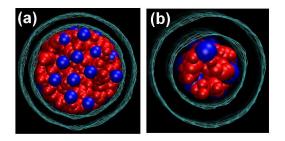


Figure S3. Arrangement of ions inside CNT (22,22) and CNT (10,10). Atom atoms of cation are red, chlorine atoms are blue, CNT atoms are displayed as wires, RTIL outside CNTs is omitted for clarity. (c) and (d) depict only chloride ions, which are primarily located near the carbon sidewall.

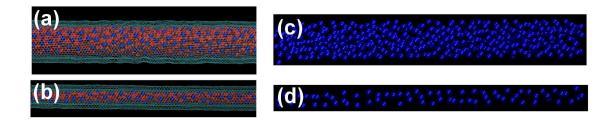


Figure S4. Radial distribution function (RDF) computed for all atoms of RTIL for  $[C_2C_1MIM][Cl]$  inside CNT(10,10). Carbon atoms of CNT were excluded from the RDF calculation.

