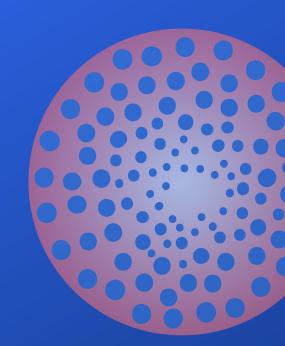
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## **Conventional oils have limited** solubility...

Cations

Anions

oil homogeneous solution  $(C_vim[Tf_2N]-LiTf_2N)$ 



Diverse structures can be obtained depending on LiTf<sub>2</sub>N concentration and alkyl length.

...but ionic liquids (ILs) are molten salts characterised by their excellent solubility.





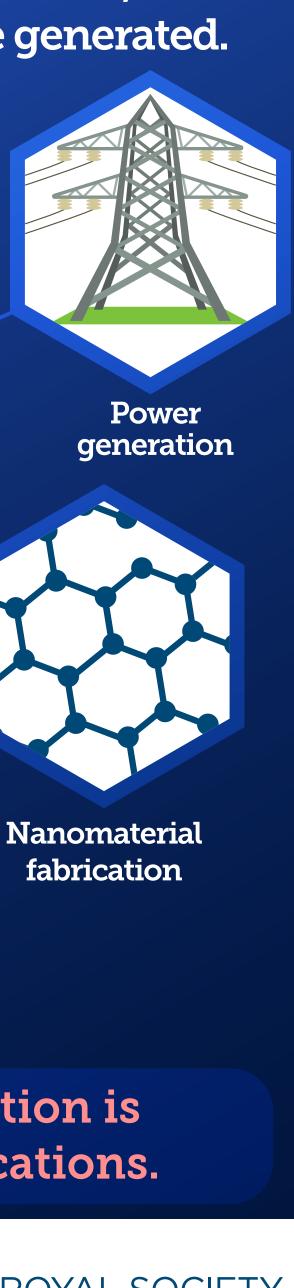
By increasing salt concentration, complex water/oil drops can be generated.



**Reaction is** reversible

+ LiTf<sub>2</sub>N

Osmotically driven emulsion



Seawater desalination

**Osmotically driven oil/water phase separation is** an exciting discovery with important applications.

Observation of osmotically driven, highly controllable and reconfigurable oil/water phase separation



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