

# Ultrastable Superbase-derived Protic Ionic Liquids

## Applications:

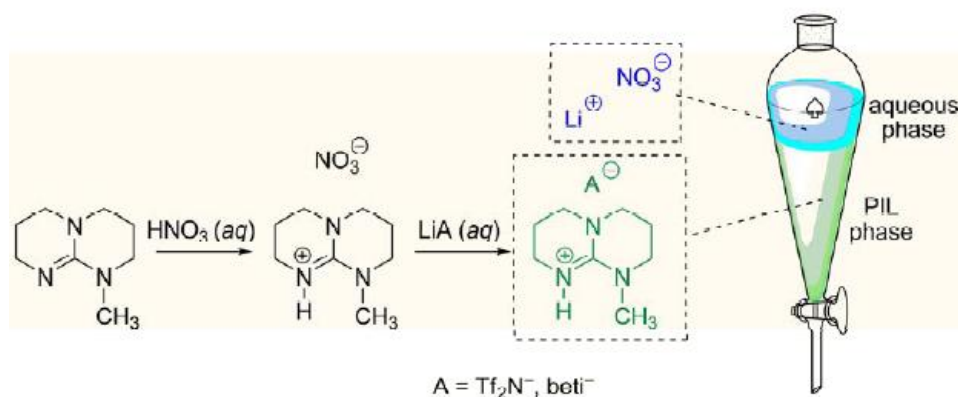
- Fuel Cells (PEM-type)
- Dye-sensitized solar cells
- Ultracapacitors
- Hydrogen production
- Other electrochemical processes

## Advantages:

- Superior thermal stability over other protic ionic liquids
- Proton conducting mechanism does not depend on water (anhydrous interface)
- Quick, simple synthesis (one-pot reactor)

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## Summary:

### *Technology Description*

The invention is a method to produce a new family of conductive low-volatility protic ionic liquids (PIL). The PIL is derived from strong acid/base couples that generate low vapor pressures, enhancing the thermal stability of the PIL over all known PILs. The invention produces hydrophobic PILs through a facile one-pot method.

### *Technology Application*

This novel family of PILs can be applied to fields that need a conductive, thermally stable (150°C +) ionic liquid, including:

- PEM-type fuel cells
- Electrolytes (fuel cells, sensors, capacitors, metal finishing)
- Hydrogen fuel production

**Stage of Development:** Proof-of-Principle

**Patent Status:** Patent application in progress

**Licensing Status:** Available for licensing in specific fields of use