Glyonic Liquids for Use as Deep Eutectic Solvents

Title: Glyonic Liquids - Deep Eutectic Solvents

Invention: A new class of ionic liquids, “glyonic liquids,” have been developed based on carbohydrate-lipid chemistry for use as room-temperature ionic liquids, deep eutectic solvents, and superconducting protonic liquids. A wide variety of chemical structures are available and can be synthetically tuned to tailor resultant properties via either biosynthesized or synthetic production routes.

Background: Ionic liquids (IL) have many potential applications, however, commercial uses have been limited due to the cost of these materials, as well as toxicity, corrosiveness, combustibility, and poor biodegradability. There remains a need for IL with attractive properties and acceptable cost which can make previously suggested applications, such as large-scale separations and carbon capture economically feasible. Despite the attractiveness of sugars being an abundant natural resource, previous sugar-based ILs are underutilized due to their synthetic complexity.

Applications:
- Solvents
- Metal finishing

Advantages:
- Fits within Green Chemistry principles
- Significantly less toxic and less corrosive
- Simple synthesis for low cost

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