



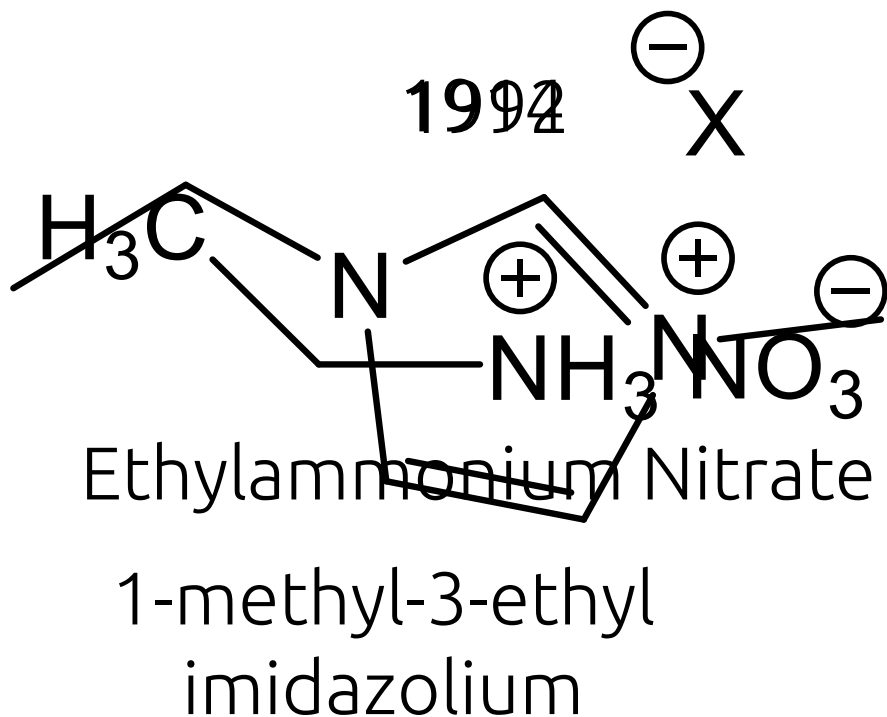
Solvent Sensing Fluorescent poly(Ionic Liquid) Ionogels

*Alexandru Tudor, Adam McColgan, Colm Delany, Larisa
Florea, Dermot Diamond*





The Origin of Ionic Liquids



Paul Walden (1863-1957)

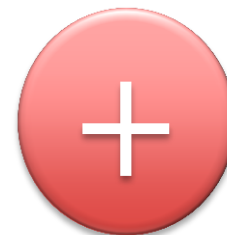
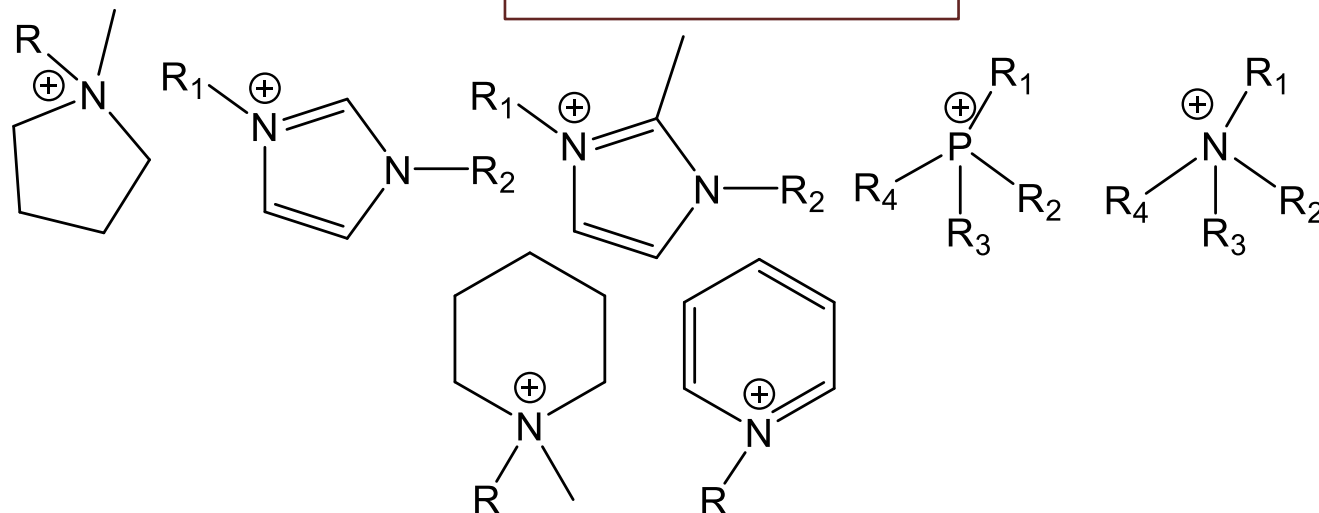




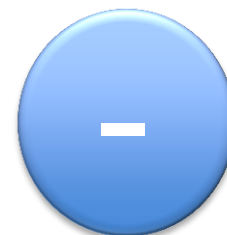
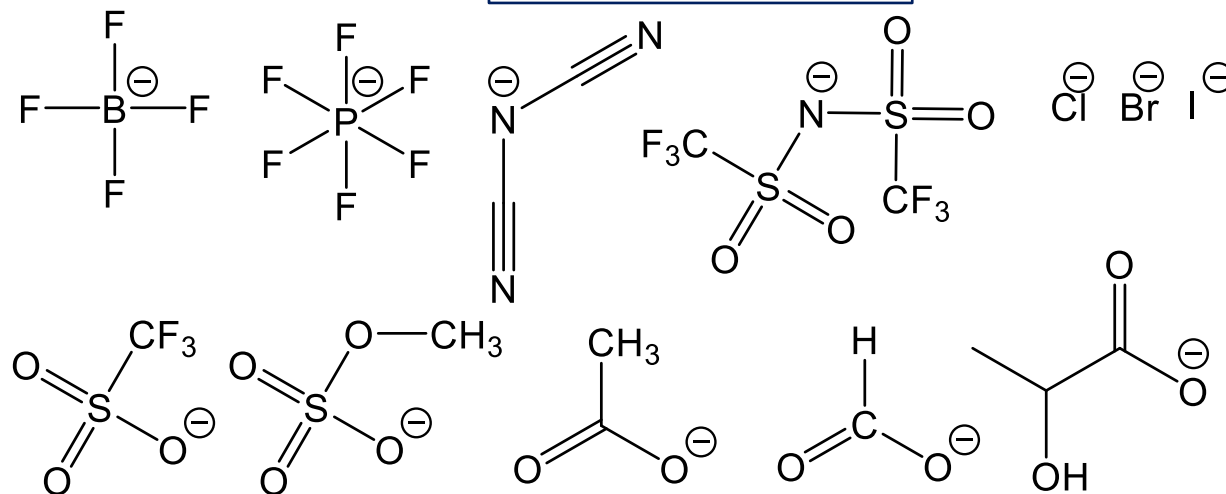
Ionic Liquids

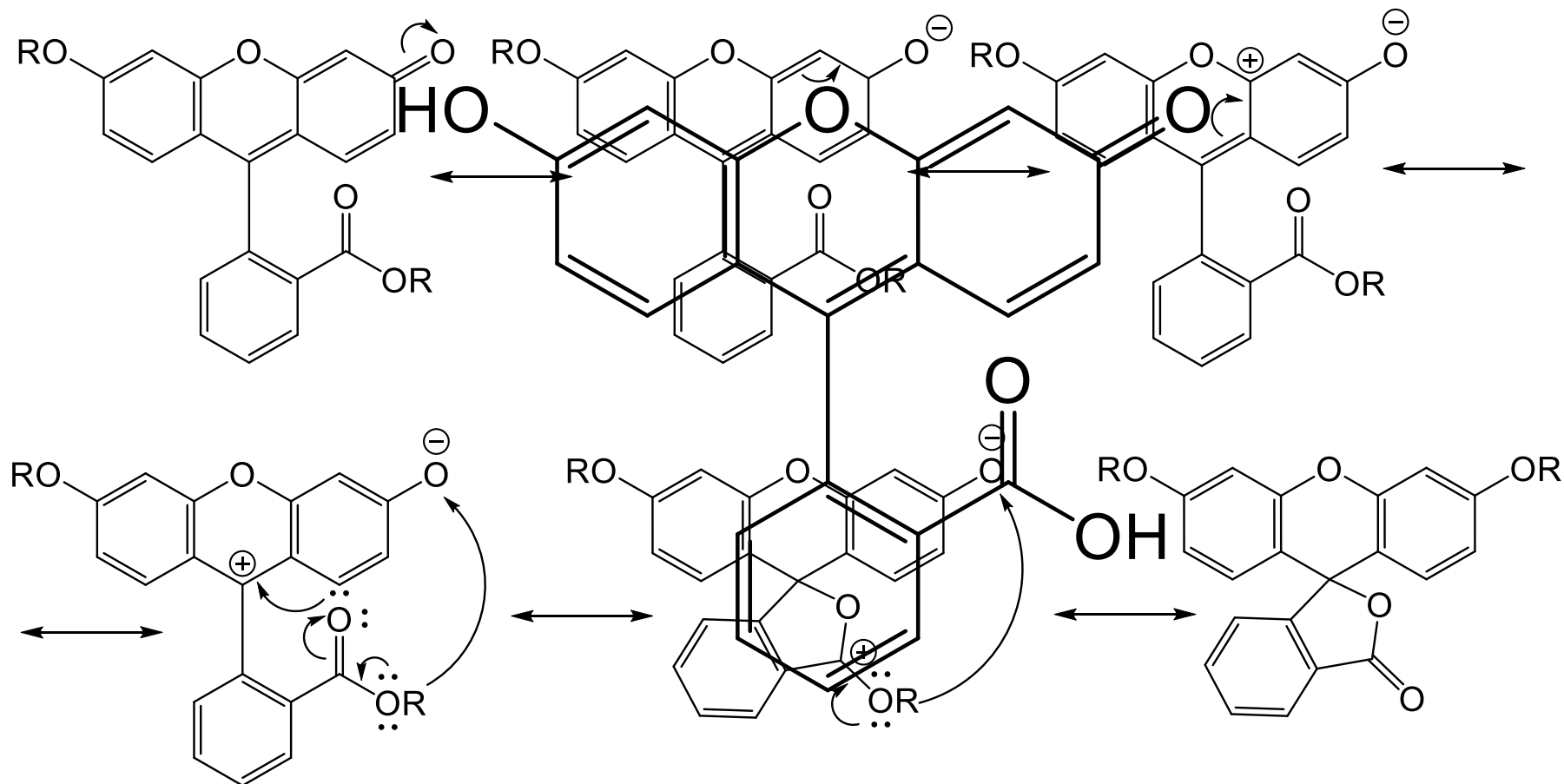


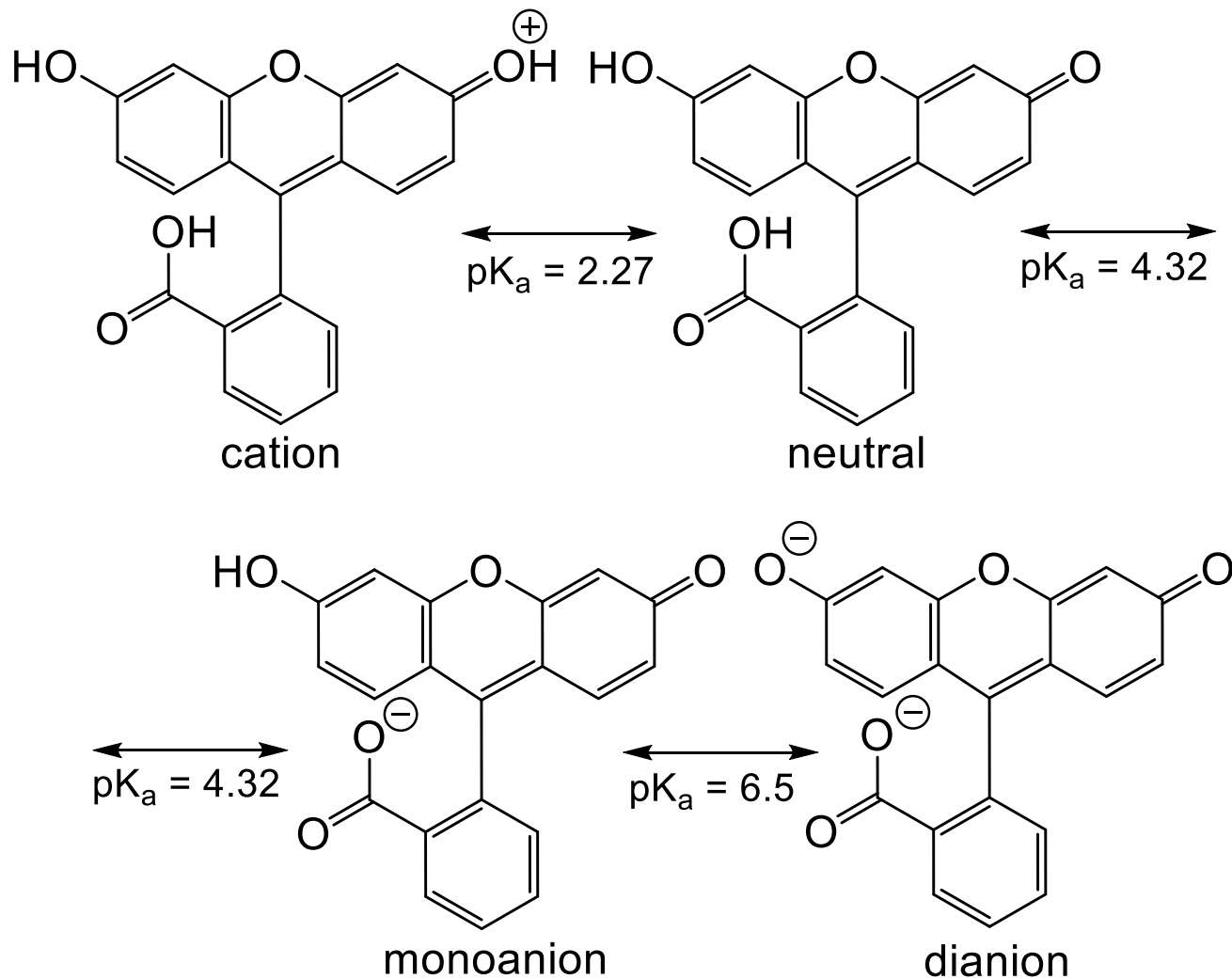
Common cations



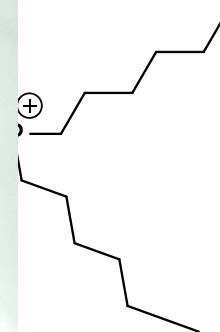
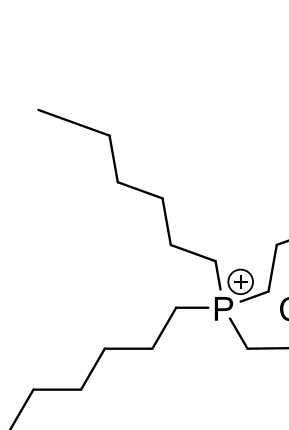
Common anions







Fluorescein-based Ionic Liquid



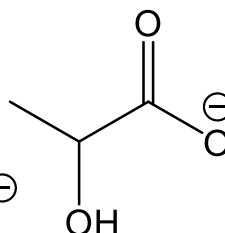
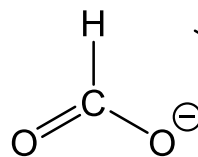
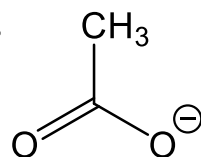
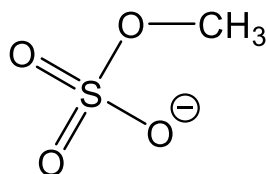
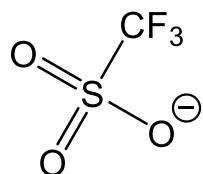
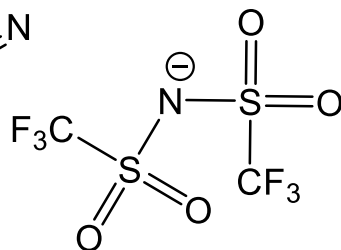
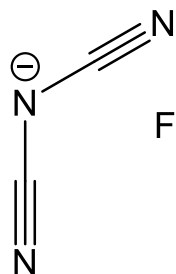
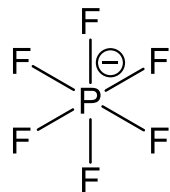
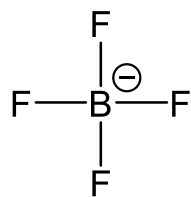
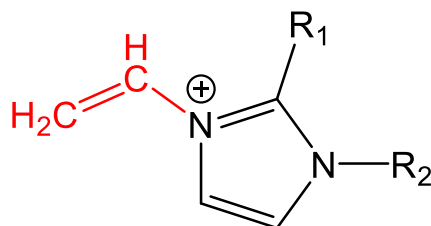
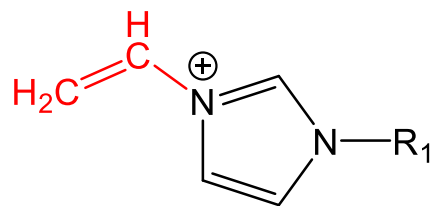
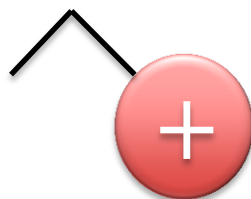
Trihexyltetradecyl Phosphonium Fluorescein



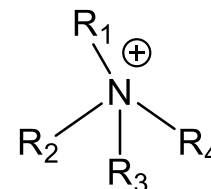
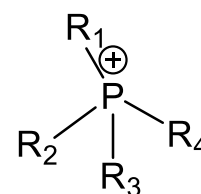
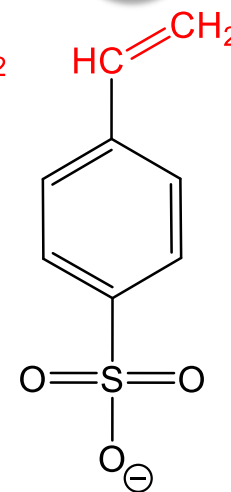
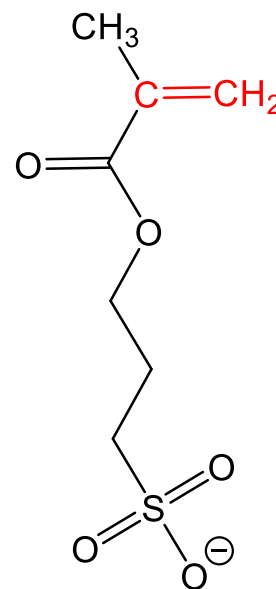
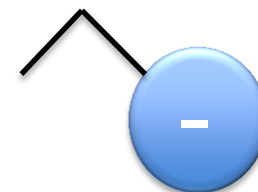
Ionic Liquid Monomers



Cationic



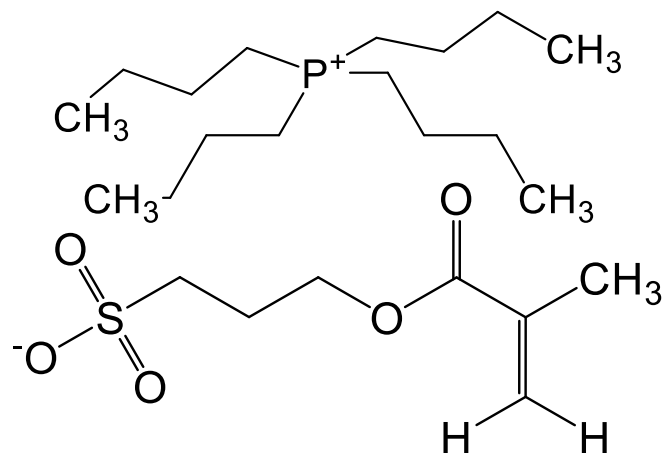
Anionic





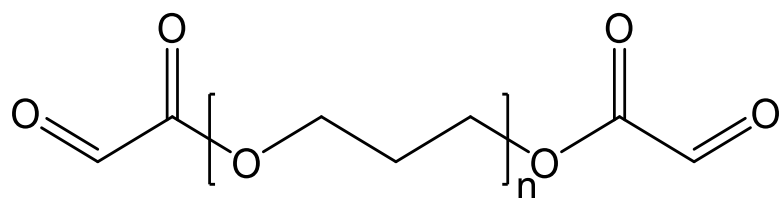
Crosslinked Poly(Ionic liquid)s Ionogels

Monomer



Tetrabutyl Phosphonium Sulfopropyl
Methacrylate (P₄₄₄₄-SPMA)

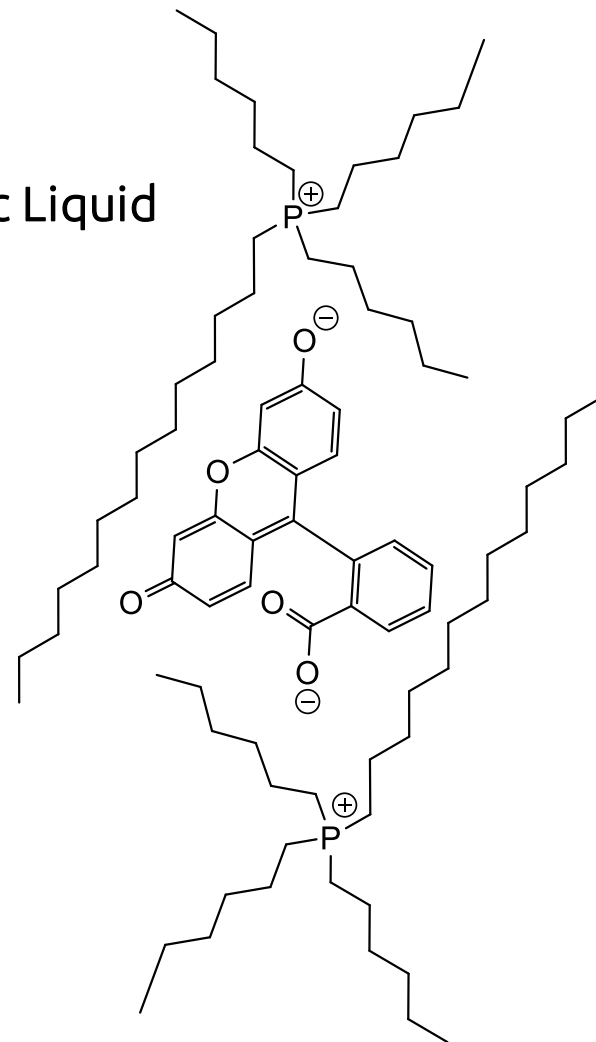
Crosslinker



~Mn = 800

Polypropylene Glycol Diacrylate

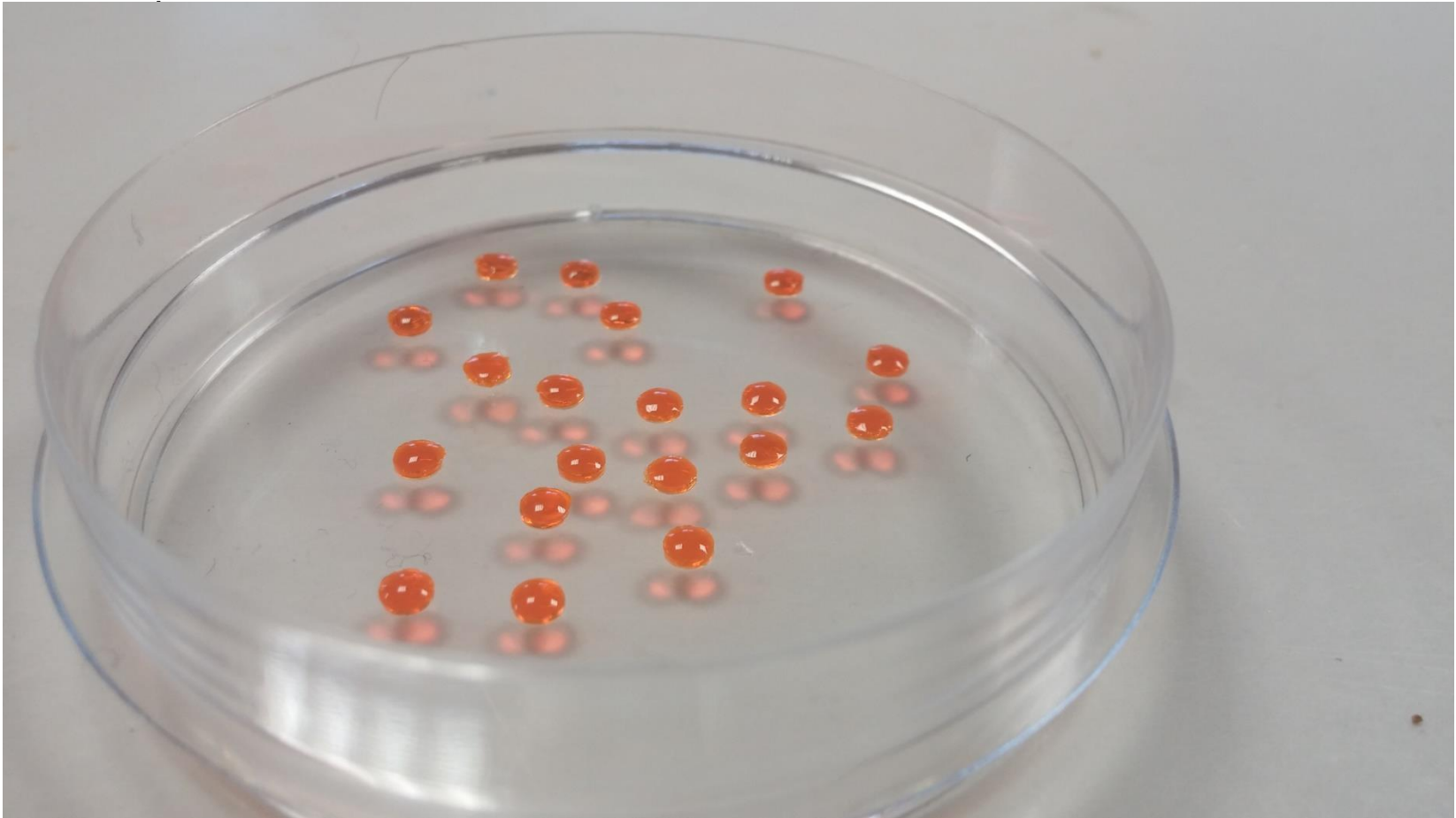
Ionic Liquid



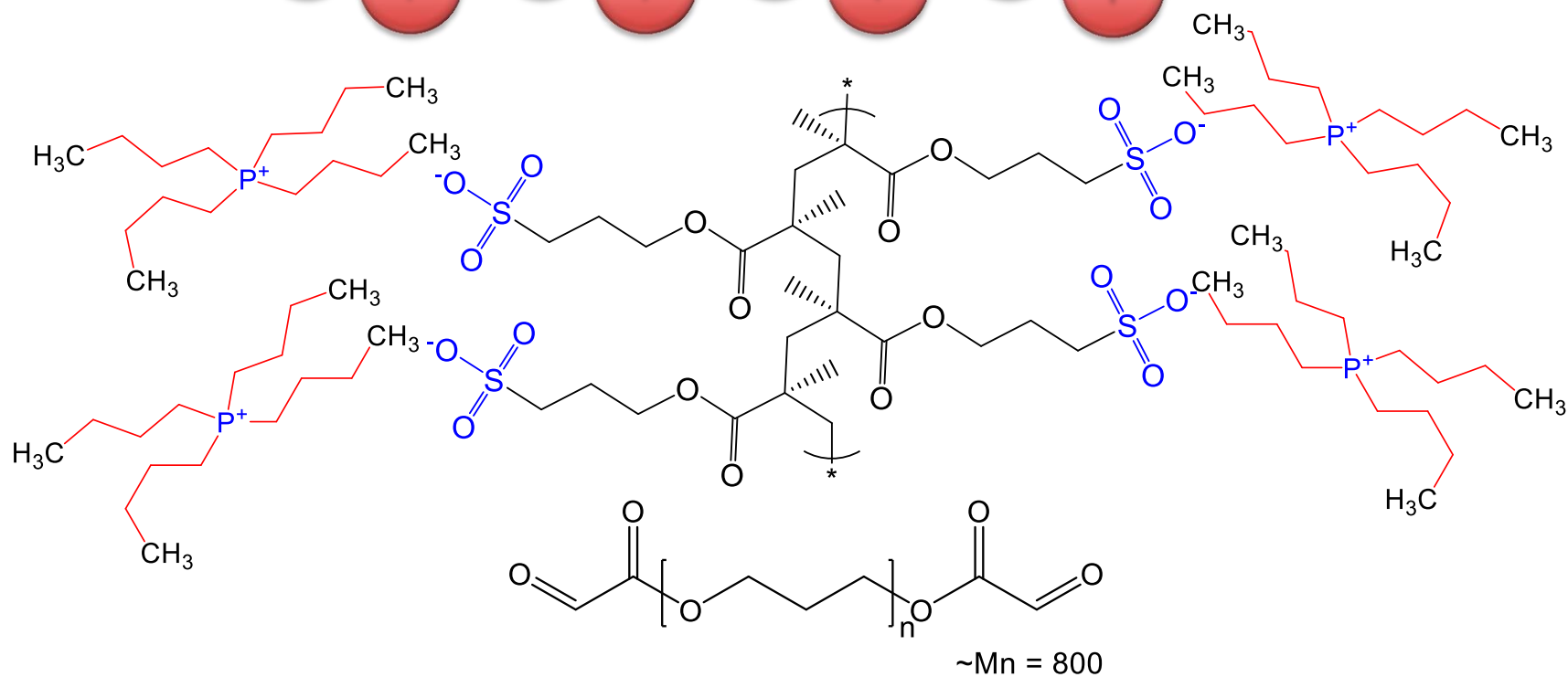
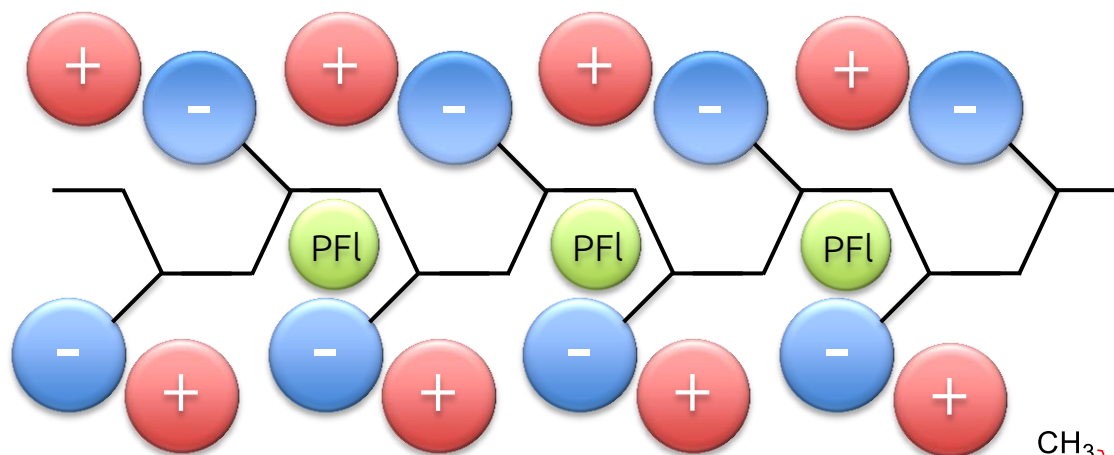
Trihexyltetradecyl Phosphonium
Fluorescein

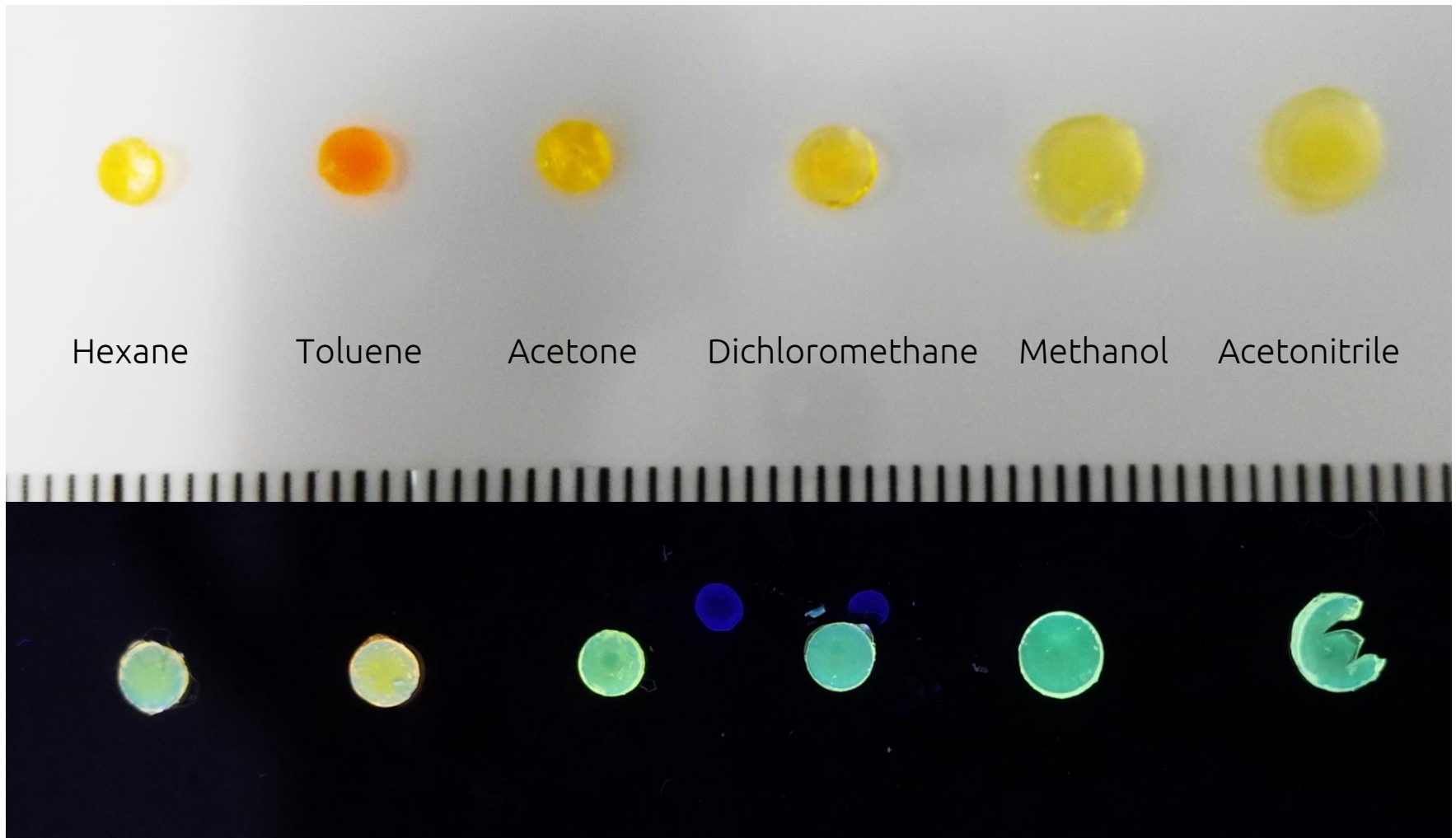


Poly (Ionic Liquid) Fluorescent Ionogels



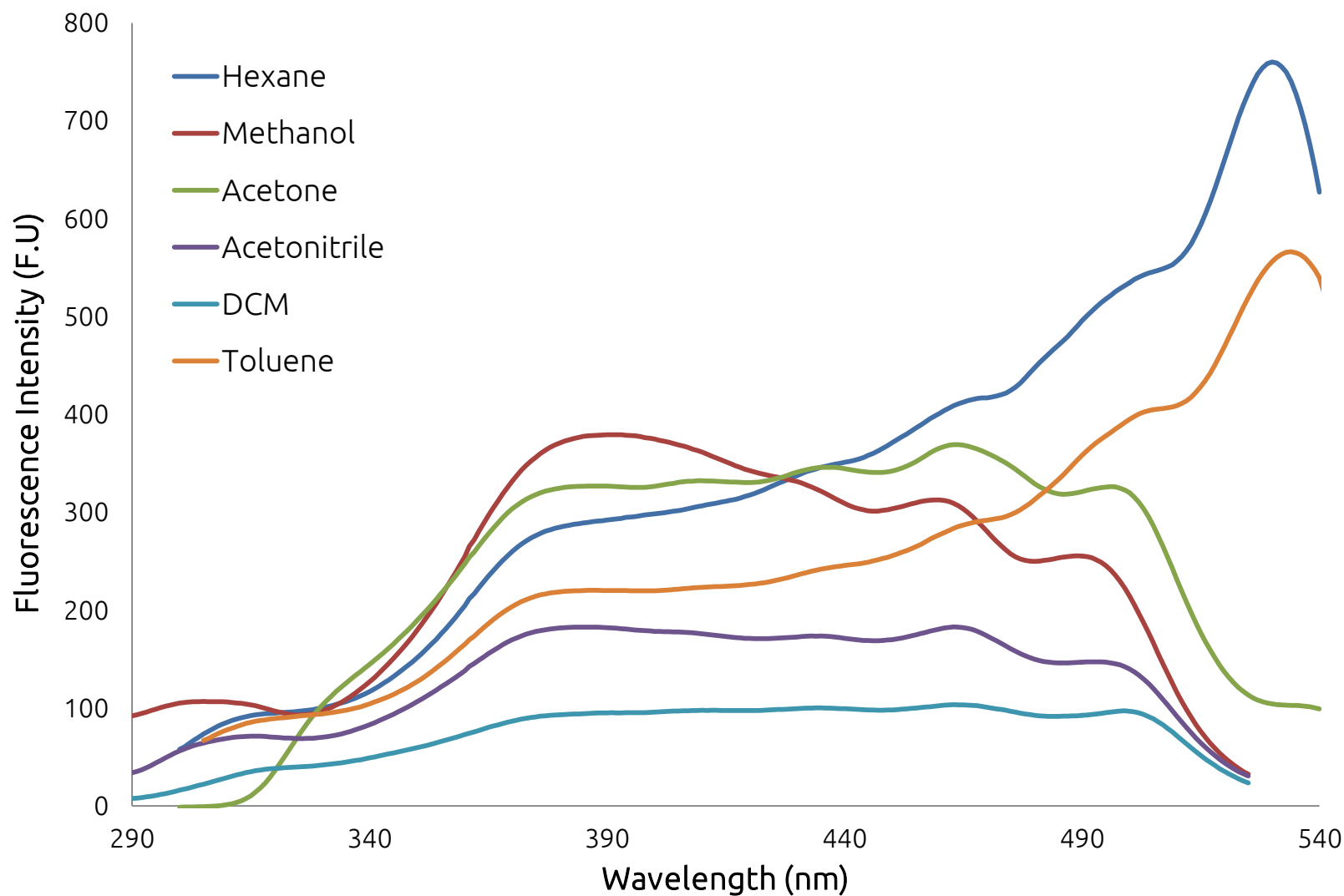
Poly(Ionic Liquid)s





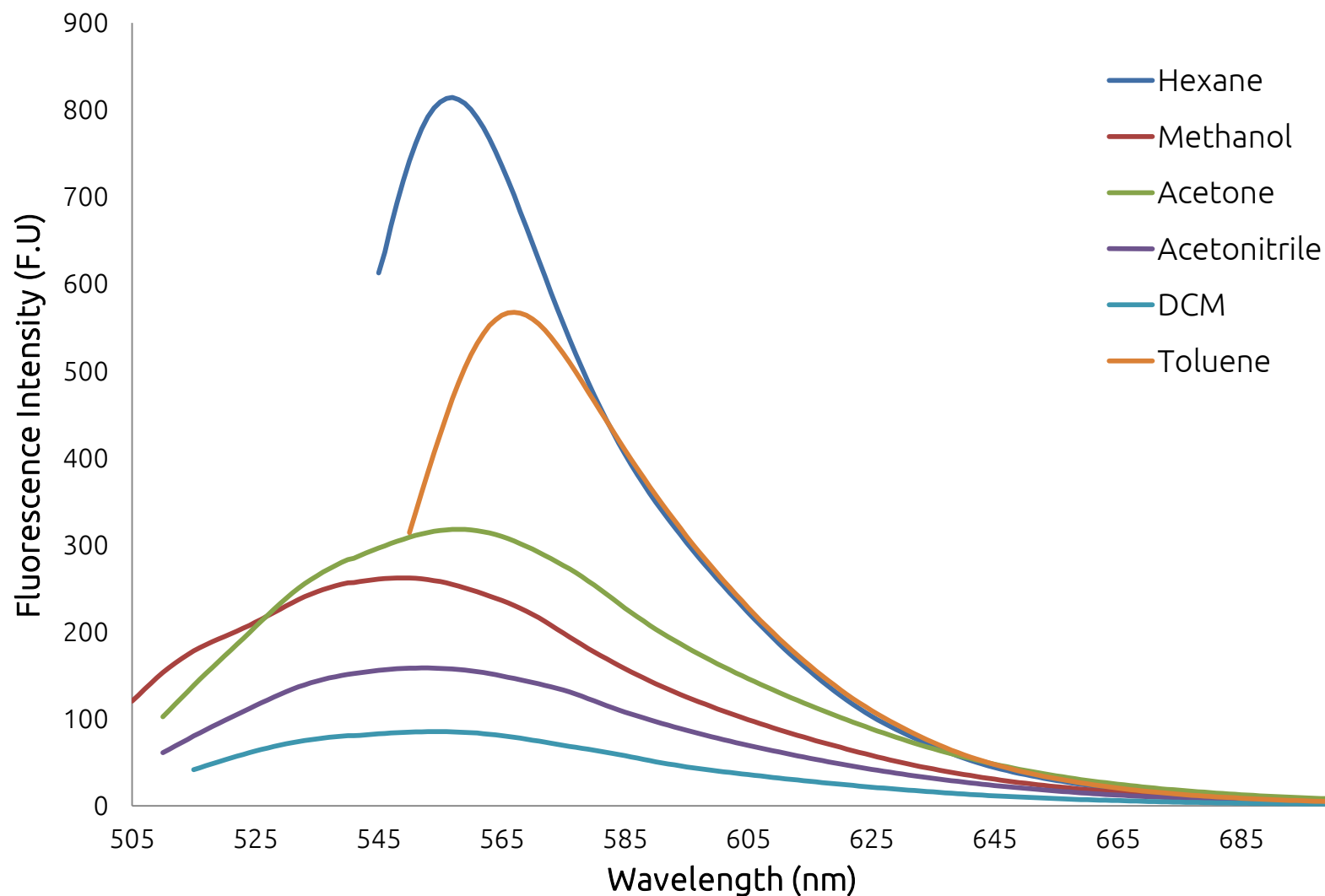


Fluorescence Spectroscopy





Fluorescence Spectroscopy





Conclusions

- A fluorescein ionic liquid was synthesized
- A solvatochromic ionogel was synthesised and it had its solvent response characterized

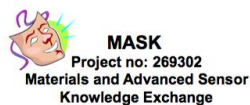
Future Work

- Synthesise ionogels containing different dissolved functional organic compounds and ionic liquids such as boronic acid derivatives for glucose sensing
- Enlarge the ionic liquid and ionic liquid monomer toolbox



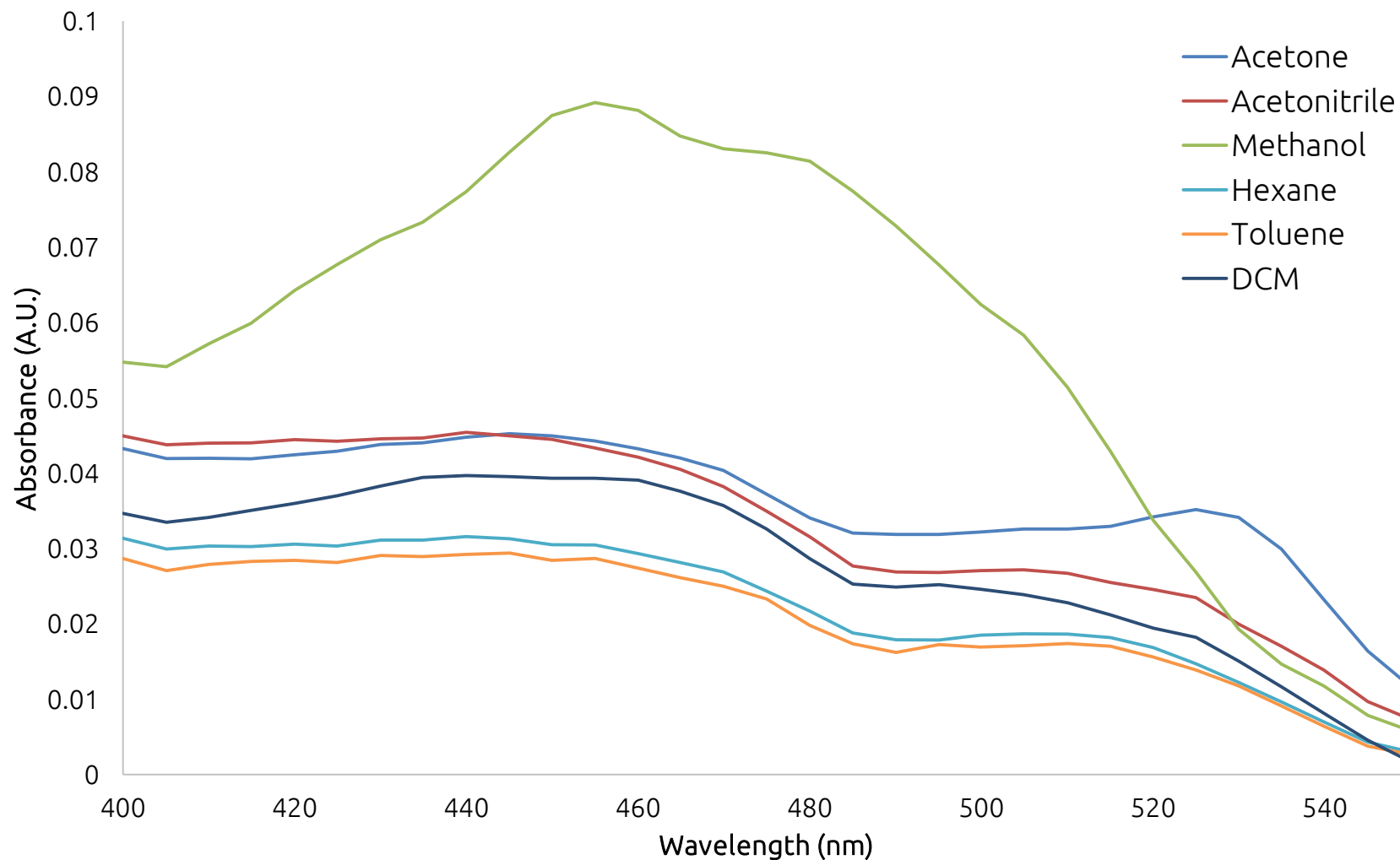
Acknowledgements

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- Wayne Francis, Aishling Dunne, Danielle Bruen, Jennifer Deignan.
- Adam McColgan.
- Prof. Dermot Diamond.
- Marie Curie ITN FP7 OrgBIO project.



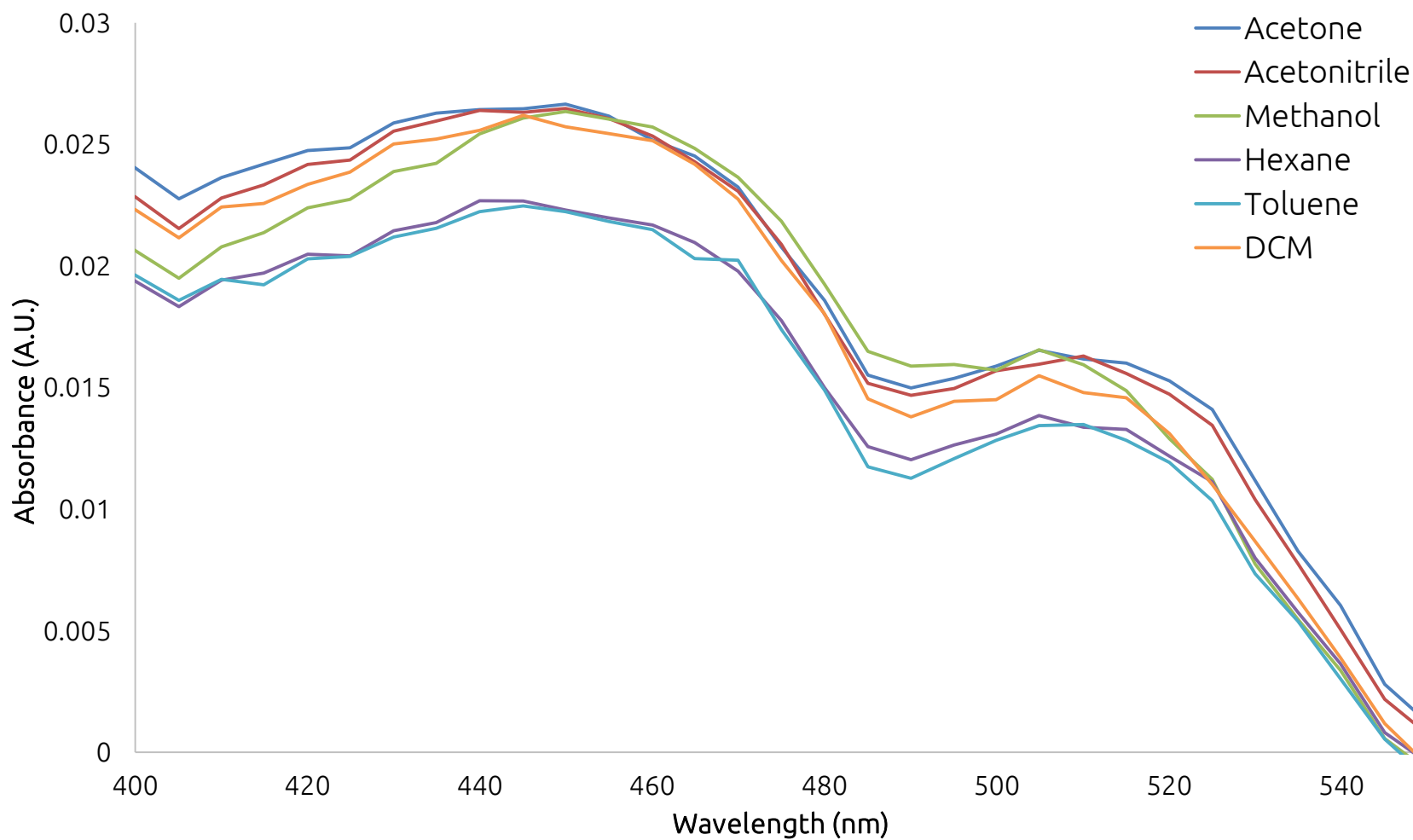


UV-Vis Spectrophotometry



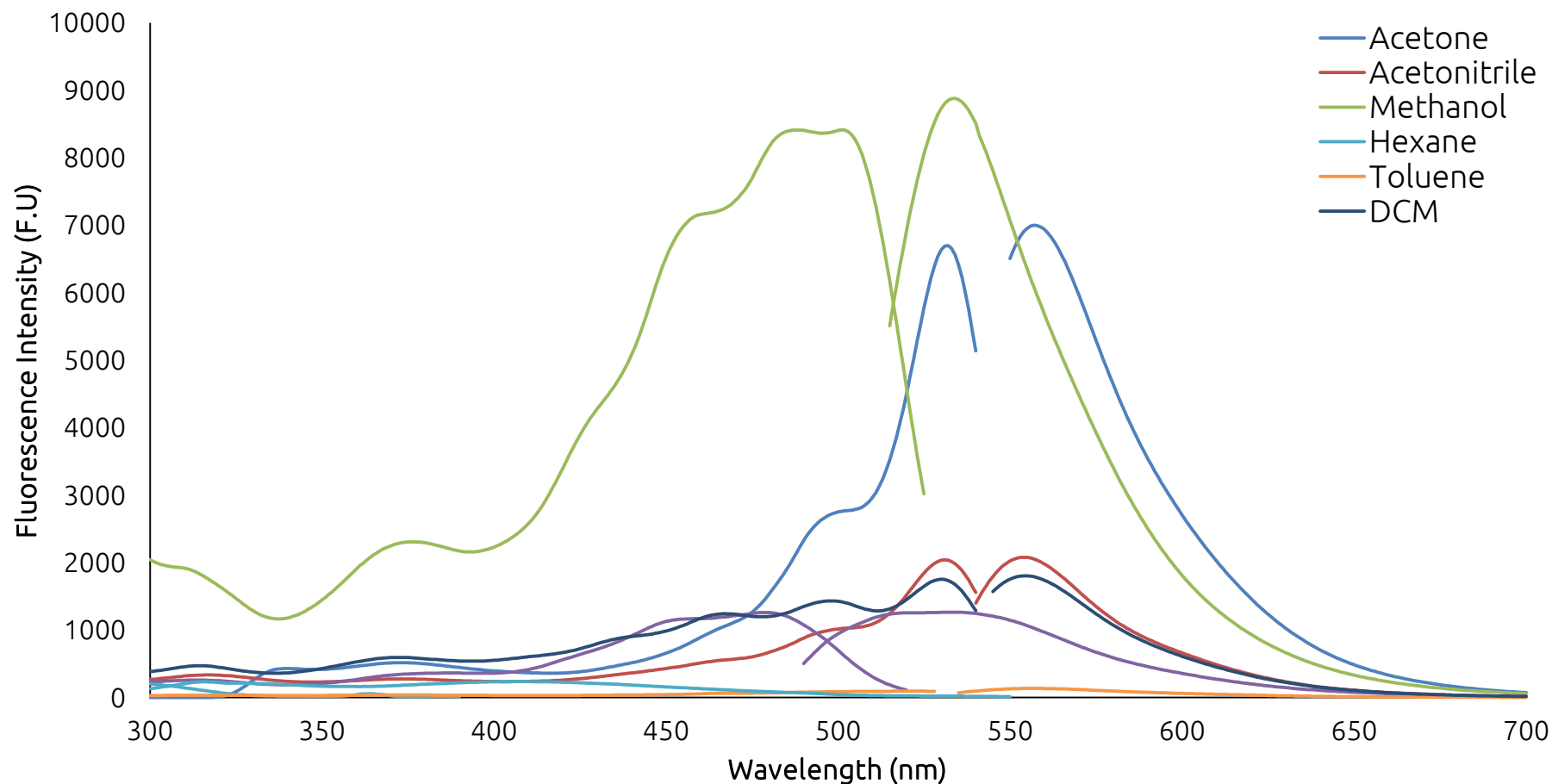


UV-Vis Spectrophotometry





Fluorescence Spectroscopy





Fluorescence Spectroscopy

