Exploring the ground state and excited state behaviour of phospha-fulvenoid and quinodal molecules

Andreas Orthaber, Uppsala University

Johannes Thiele reported the first fulvenoid and quinoid structures beginning of the 20th century, but their interest to (main group) chemists flourishes until today. Introduction of isolobal main group fragments into these unique conjugated molecules introduces unprecedented chemical reactivity, electronic structures, as well as electrochemically and photochemically triggered molecular processes. We have explored how these *Thiele* derived main group compounds can be used as molecular switches, in dynamic redox processes, thermally populated biradicaloids and other exciting applications. In particular, new opportunities for heteroaromatic compounds arise to utilize concepts that have been developed for overcrowded ethylenes (OCEs) to access unprecedented reactivities.

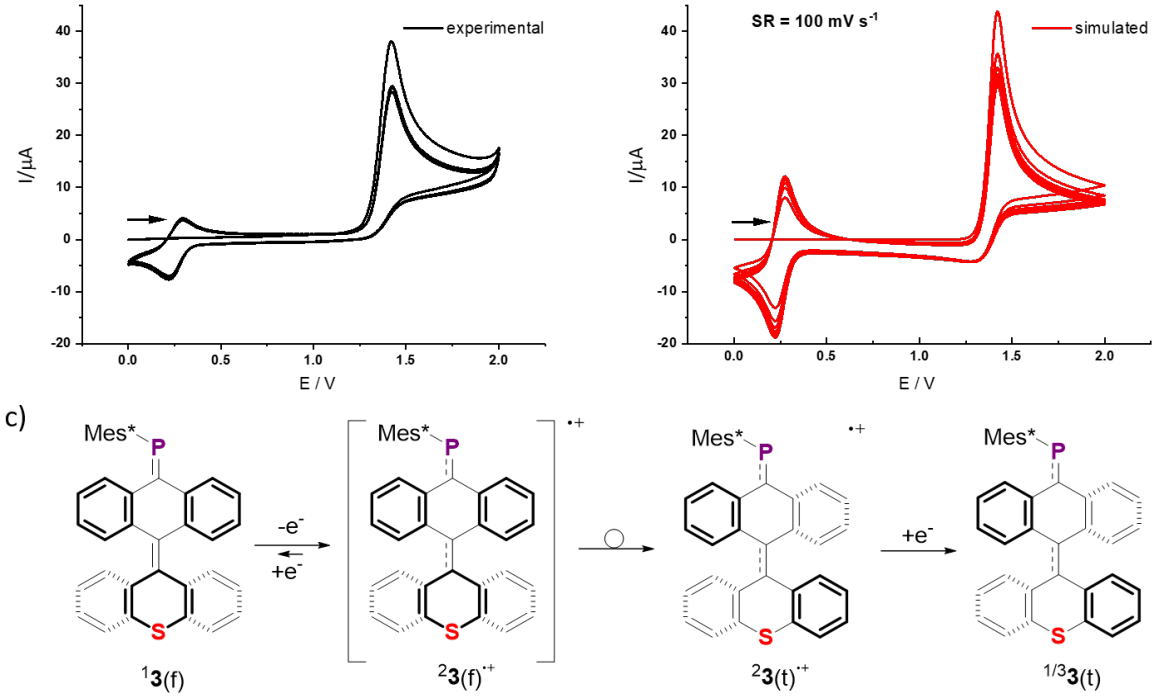


Figure 1. Example dynamic redox (dyrex) behaviour of a thioxanthyl terminated phosphaquinoid.

References

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