Structural Chemistry of Azulenes.

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Azulene is a dark-blue, polar, bicyclic aromatic hydrocarbon (Figure 1) that is a non-benzenoid isomer of naphthalene. In addition to its long-standing medicinal and pharmaceutical relevance, the polar non-benzenoid aromatic framework of azulene constitutes an attractive building block in the design of redox-addressable, optoelectronic, and conductive materials [1]. This presentation will highlight our recent developments in the chemistry of hybrid metal / azulene platforms featuring isocyanide and thiolate junctions (**X**) along their molecular axis (Figure 2) [2].

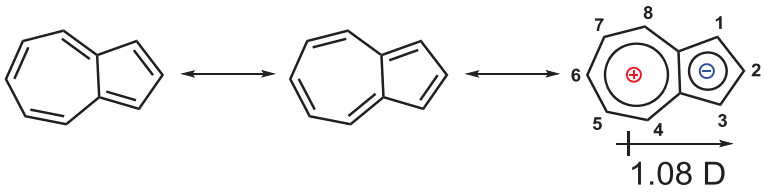

Fig 1.

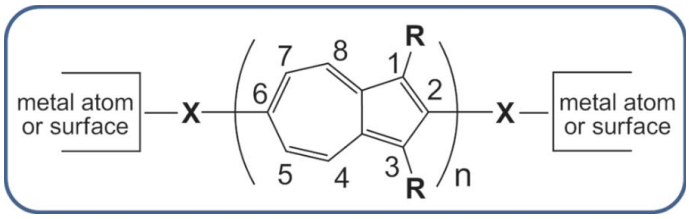

Fig 2.

Single crystal X-ray structural analysis of a series of novel 2,6-functionalized azulenes will be presented [3]. In particular, heterobimetallic ensembles that incorporate the first examples of a conjugated π-bridge equipped with both isocyanide and thiol junction groups in the same molecular linker will be discussed (e.g., Figure 3B).

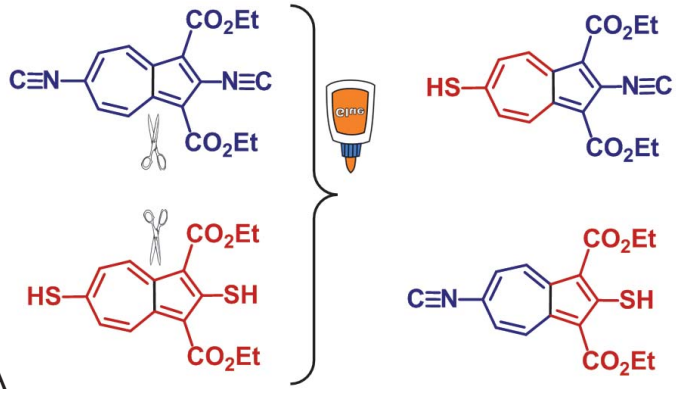

Fig 3

1. Holovics, T.; Robinson, R.E.; Weintrob, E.C.; Toriyama, M.; Lushington, G.H.; Barybin, M.V. *J. Am. Chem. Soc*., **128** (7), 2300–2309 (2006).
2. Scheetz, K. J.; Spaeth, A. D.; Vorushilov, A. S.; Powell, D. R.; Day, V. W.; Barybin, M. V. *Chem. Sci*. **4**, 4267-4272 (2013).
3. Applegate, J. C.; Okeowo, M. K.; Erickson, N. R.; Neal, B. M.; Berrie, C. L.; Gerasimchuk, N. N.; Barybin, M.V. *Chem. Sci*., **7**, 1422 (2016).