

"Generation and Observation of the Cyclopentadienyl Anion: A Negatively Charged Aromatic Molecule." Breton, G. W. *The Chemical Educator*, 1997, 2(6), 1.

Abstract: The study of charged aromatic species greatly enhances discussions of the theory of aromaticity. The conveniently low acidity of cyclopentadiene ($pK_a = 15$) affords the opportunity to generate the aromatic cyclopentadienyl anion in an organic laboratory class. This experiment describes the preparation of a solution of deuterated dimethylsulfinyl anion in an NMR tube, followed by the addition of freshly prepared cyclopentadiene. The ^1H NMR spectrum of the resulting aromatic anion is compared with that of the isoelectronic (but uncharged) benzene, and contrasted with the spectra of several nonaromatic and antiaromatic compounds. Treatment of the anion with an equivalent of trifluoroacetic acid quantitatively affords cyclopentadiene.