

Think It Over



This section of Resonance is meant to raise thought-provoking, interesting, or just plain brain-teasing questions every month, and discuss answers a few months later. Readers are welcome to send in suggestions for such questions, solutions to questions already posed, comments on the solutions discussed in the journal, etc. to Resonance, Indian Academy of Sciences, Bangalore 560 080, with "Think It Over" written on the cover or card to help us sort the correspondence. Due to limitations of space, it may not be possible to use all the material received. However, the coordinators of this section (currently A Sitaram and R Nityananda) will try and select items which best illustrate various ideas and concepts, for inclusion in this section.

Hydrocarbon Acts Funny!

Given a hydrocarbon of formula $C_{115}H_{90}$ the last thing one expects is that it is ionic. But, yes, that is what it was reported by the Japanese chemists K Okamoto, T Kitagawa, K Takeuchi, K Komatsu and K Takahashi (*J. Chem. Soc., Chem. Commun.*, 1985, 173). When tris (5-isopropyl-3,8-dimethylazulenyl) cyclopropenylium perchlorate, $C_{48}H_{51}^+ ClO_4^-$ and potassium tris (7-H-dibenzo [c,g] flurenylidene)methyl, $K^+ C_{67}H_{39}^-$ were mixed in tetrahydrofuran the organic solid **A** was obtained as greenish black crystals — stable upto six months under argon. Even though purely organic examples of ionic compounds were known in solution, this was the *first hydrocarbon* to earn such a distinction. Usually, carbocations and carbanions, if mixed together give rise to a C-C single bond. Can you figure out the tricks employed by the researchers to realise the hydrocarbon-only ionic compound?

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