

Previous synthesis of mesophase naphthalene pitches has used a Lewis acid catalyst, but a staggering number of individual chemical constituents are produced as a result. This is likely caused by the fragmentation of aromatic rings and the re-addition of the short hydrocarbons to other, growing oligomers. At relatively low reaction times, the use of higher reaction temperatures in lieu of catalyst minimizes fragmentation, making the number of chemical products being formed more manageable. Our goal in this work is to isolate pure naphthalene oligomers. We are interested in exploring the properties of these materials in general and their ability to form liquid crystalline mesophase in particular. Dense-gas extraction, using toluene as the solvent, has been shown to be capable of isolating each of these oligomers into monodisperse samples. With the ability to isolate appreciable quantities of these naphthalene oligomers, the lowest molecular weight naphthalene oligomer that can form a discotic liquid crystalline phase is in the process of being identified.