

Abstract

Seven 10-methyl-9-[(phenylthio)carbonyl]acridinium trifluoromethanesulphonates and their acridine precursors were synthesized and their identity was confirmed by mass spectrometry, as well as Raman and NMR spectroscopy. The crystal structure of all obtained compounds was determined by X-ray diffractometry. Intermolecular interactions in the crystal lattices of the salts and precursors have been disclosed and analyzed from the point of view of their chemical behavior. The stability and thermal features of the compounds have been evaluated on the basis of determined thermoanalytically their thermal and thermodynamic characteristics. 10-Methyl-9-[(phenylthio)carbonyl]acridinium cations exhibit chemiluminogenic ability and can find applications in analytics as chemiluminescent indicators or fragments of labels. Comparison of 10-methyl-9-[(phenylthio)carbonyl]acridinium and 10-Methyl-9-(phenoxy carbonyl) acridinium salts reveals that former once exhibit somewhat lower stability, which should not however influence their possible analytical applications.