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Supporting Information

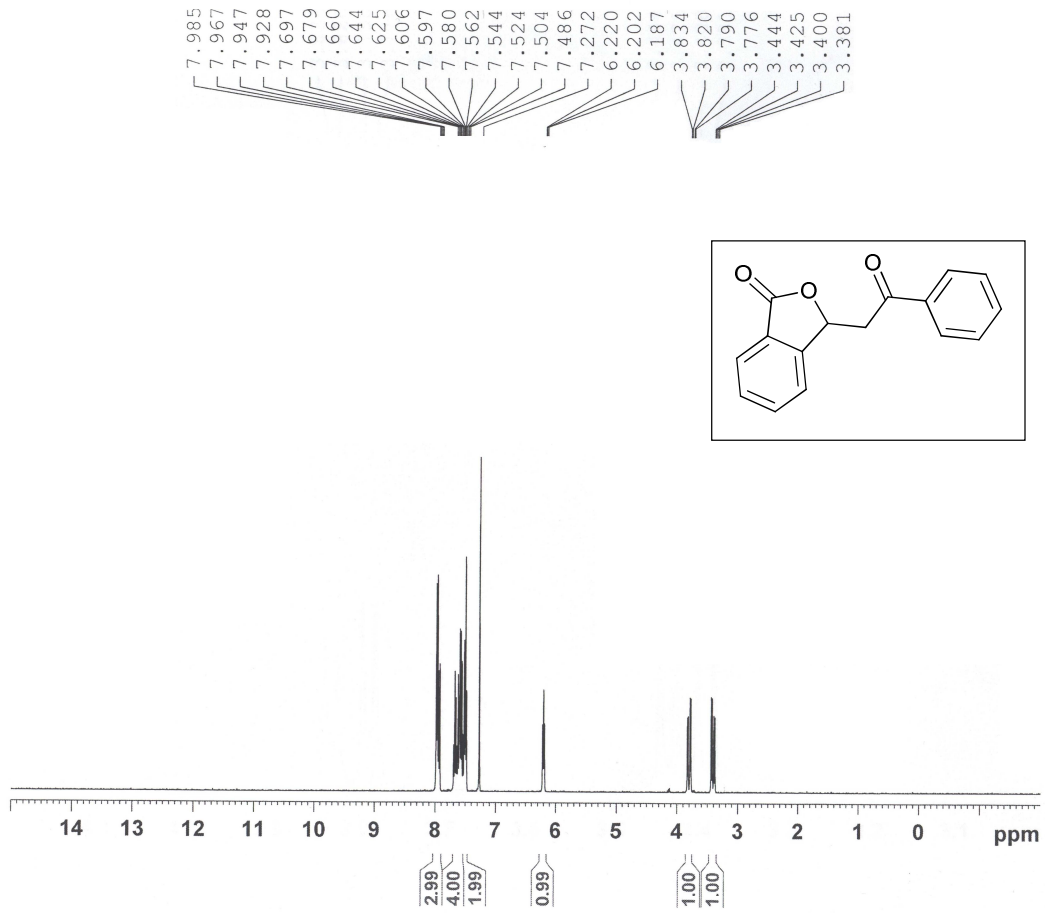
1-Methyl-3-(propyl-3-sulfonic acid)imidazolium triflate supported on magnetic nanoparticles: an efficient and reusable catalyst for synthesis of mono- and bis-isobenzofuran-1(3*H*)-ones under solvent-free conditions

Forouz Rastegari, Iraj Mohammadpoor-Baltork,* Ahmad R. Khosropour,* Shahram Tangestaninejad, Valiollah Mirkhani, and Majid Moghadam

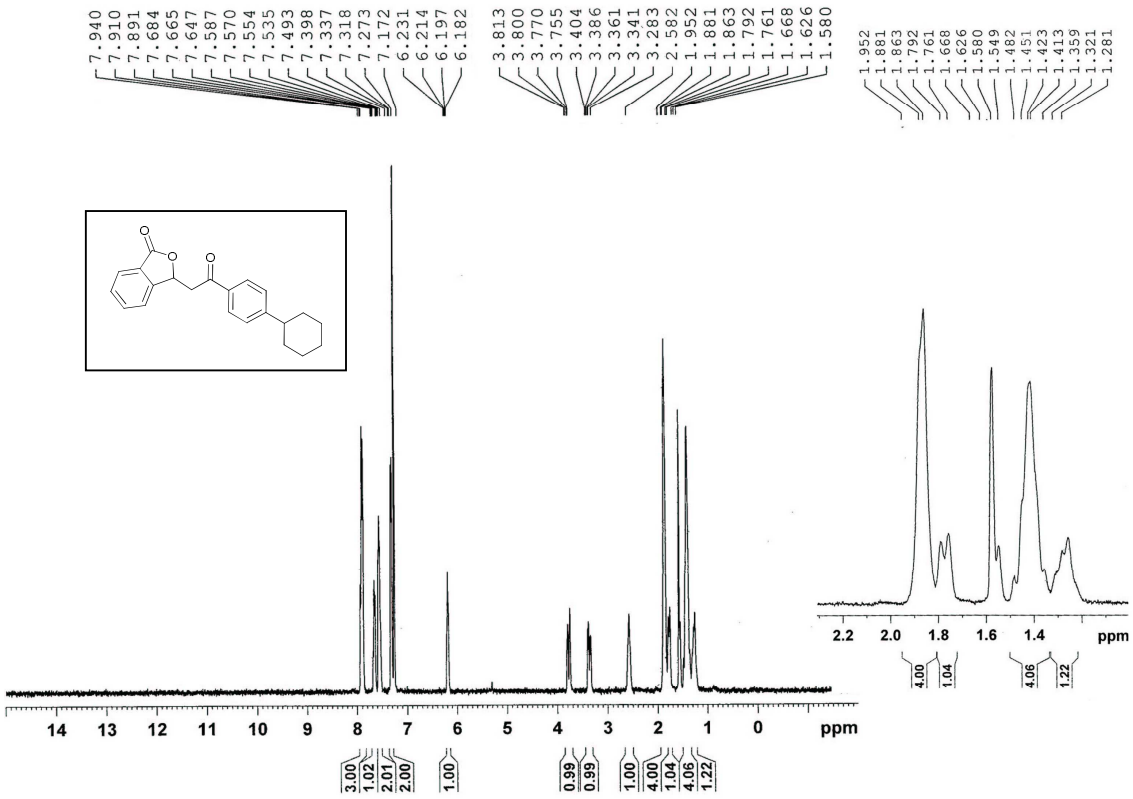
Department of Chemistry, Catalysis Division, University of Isfahan, Isfahan 81746-73441, Iran. Fax: +98-031-36689732; Tel: +98-031-37932705

E-mail addresses: imbaltork@sci.ui.ac.ir; arkhosropour@sci.ui.ac.ir

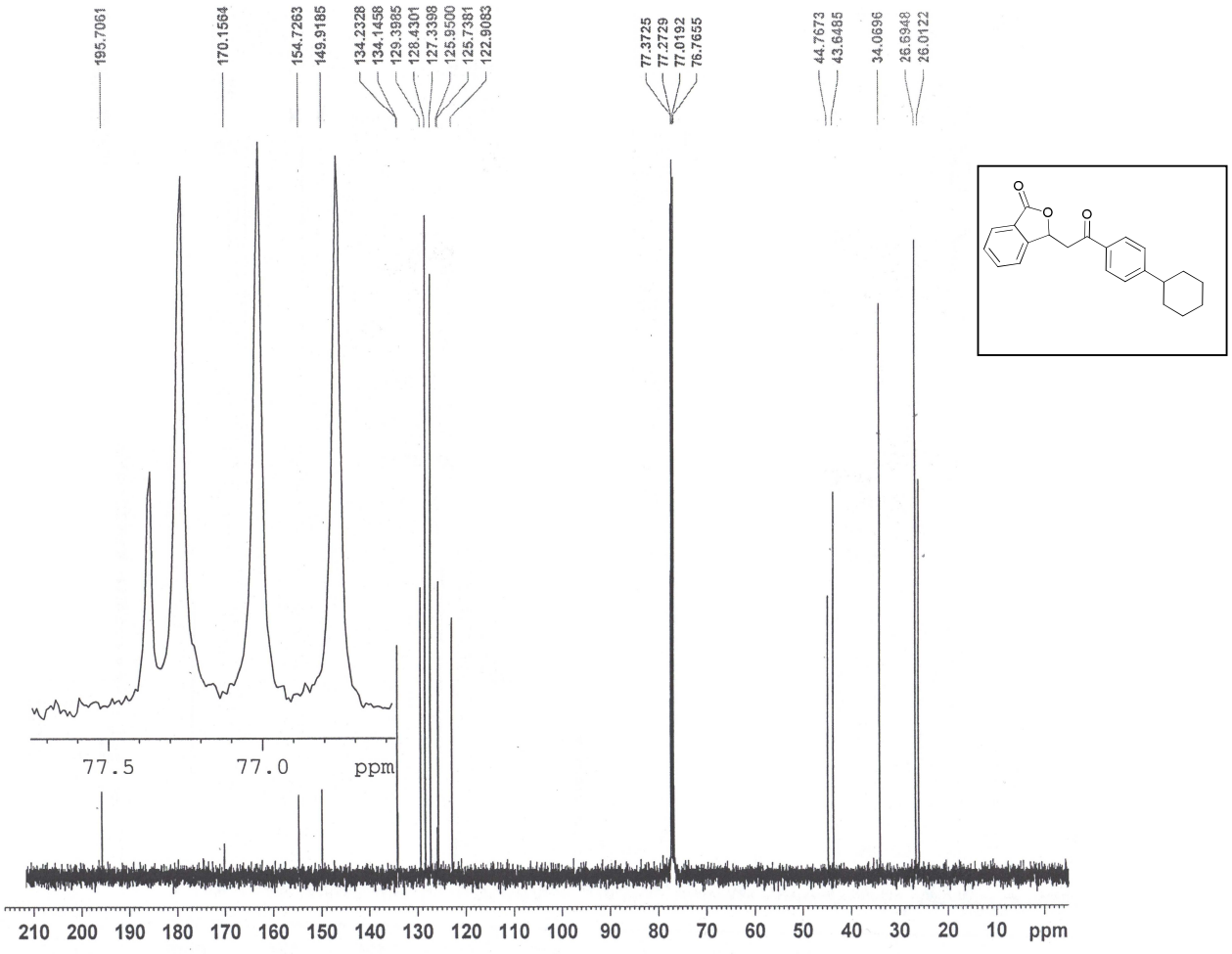
^{1}H NMR and ^{13}C NMR spectra of the products



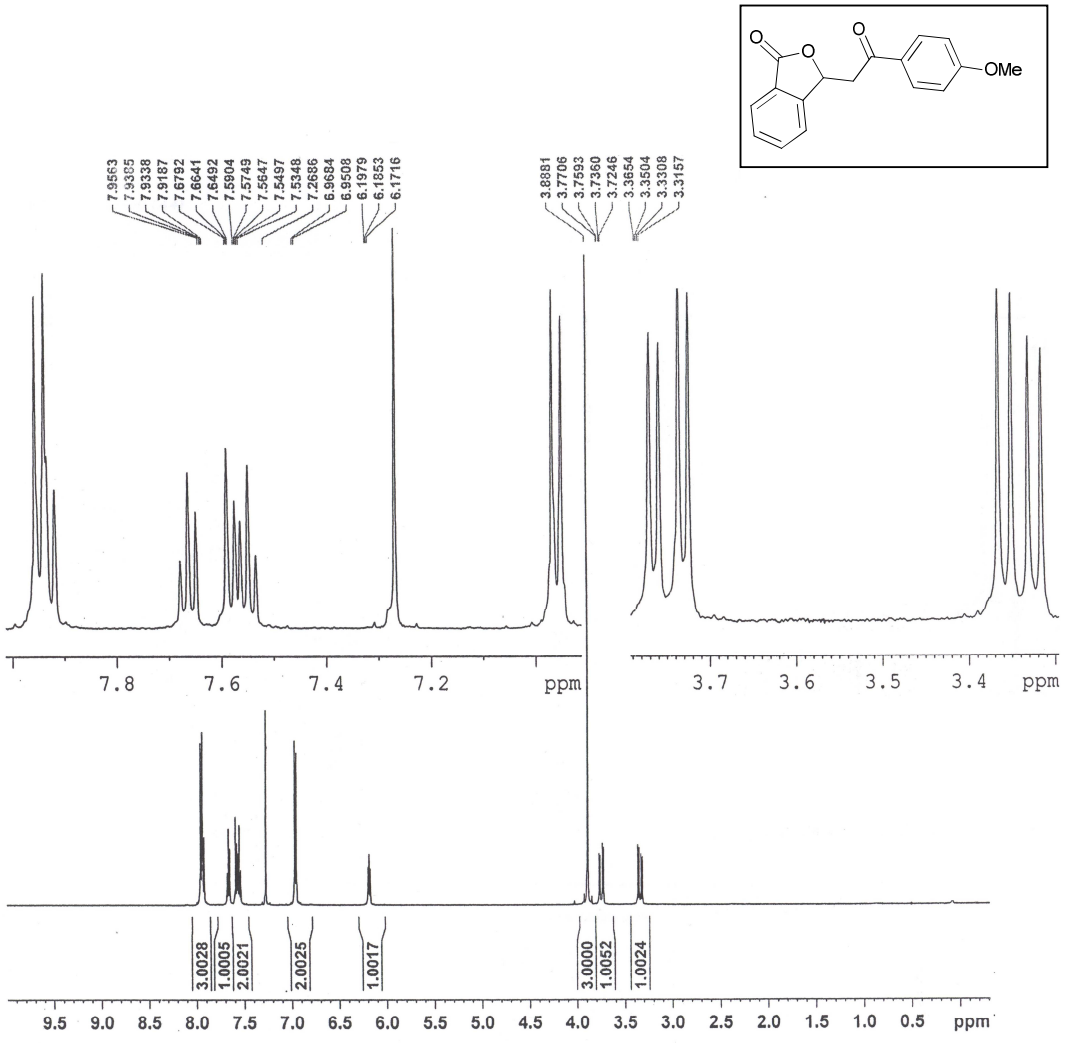
3-(2-Oxo-2-phenyl)isobenzofuran-1(3*H*)-one (3a); ^{1}H NMR (400 MHz, $CDCl_3$)



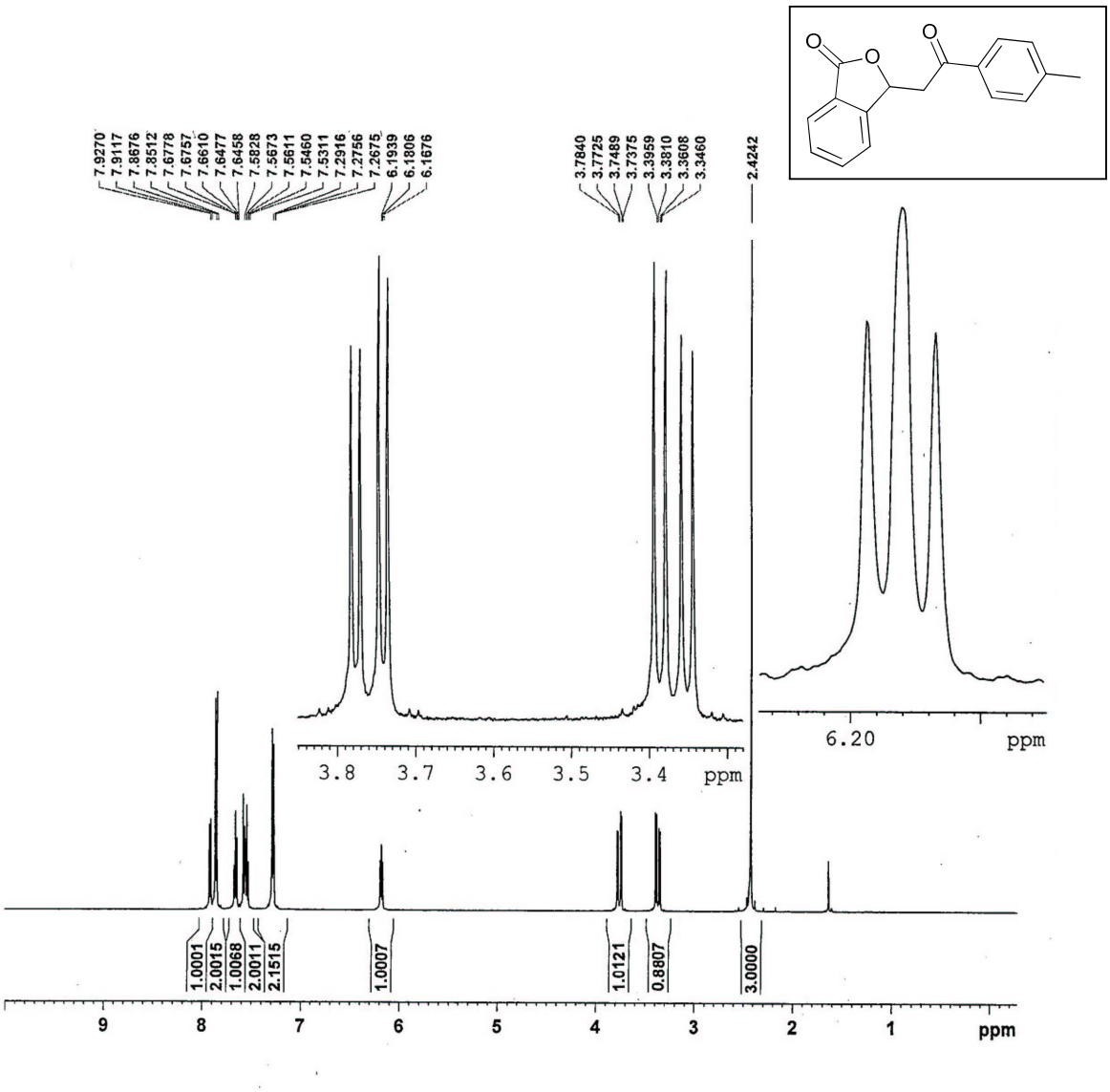
3-[2-(4-Cyclohexylphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3b); ^{1}H NMR (400 MHz, $CDCl_3$)



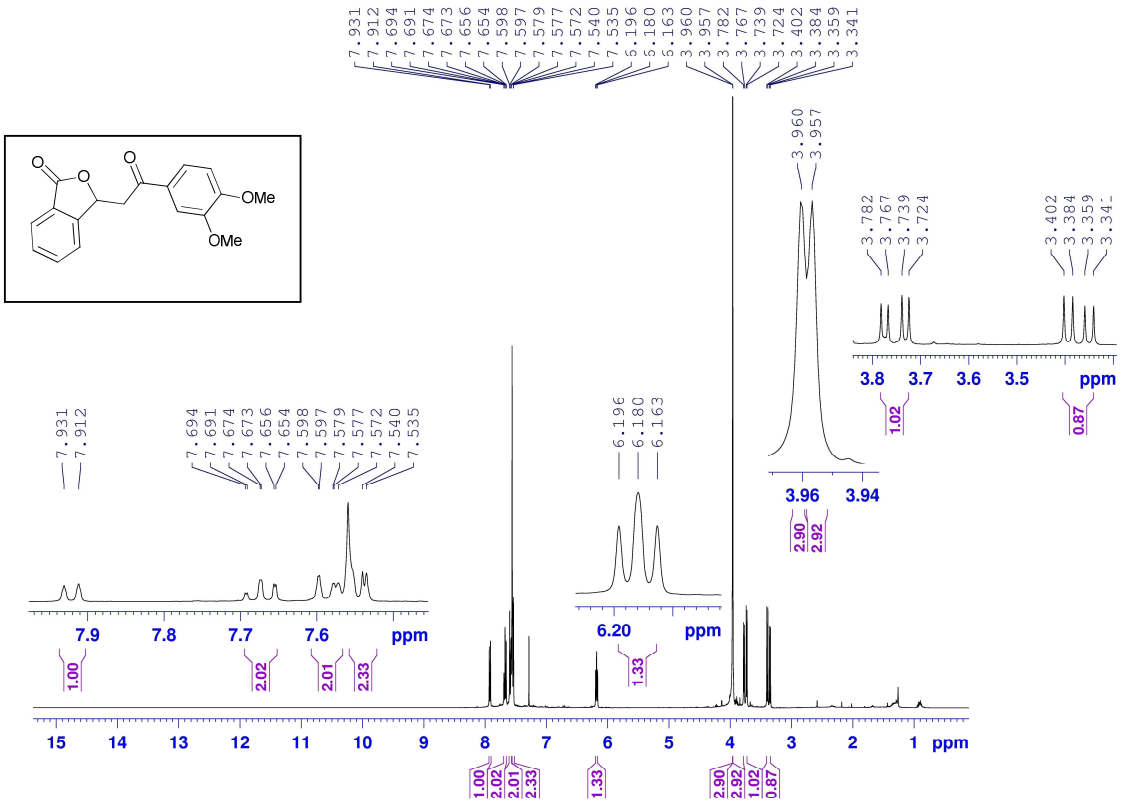
3-[2-(4-Cyclohexylphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3b); ^{13}C NMR (100 MHz, $CDCl_3$)



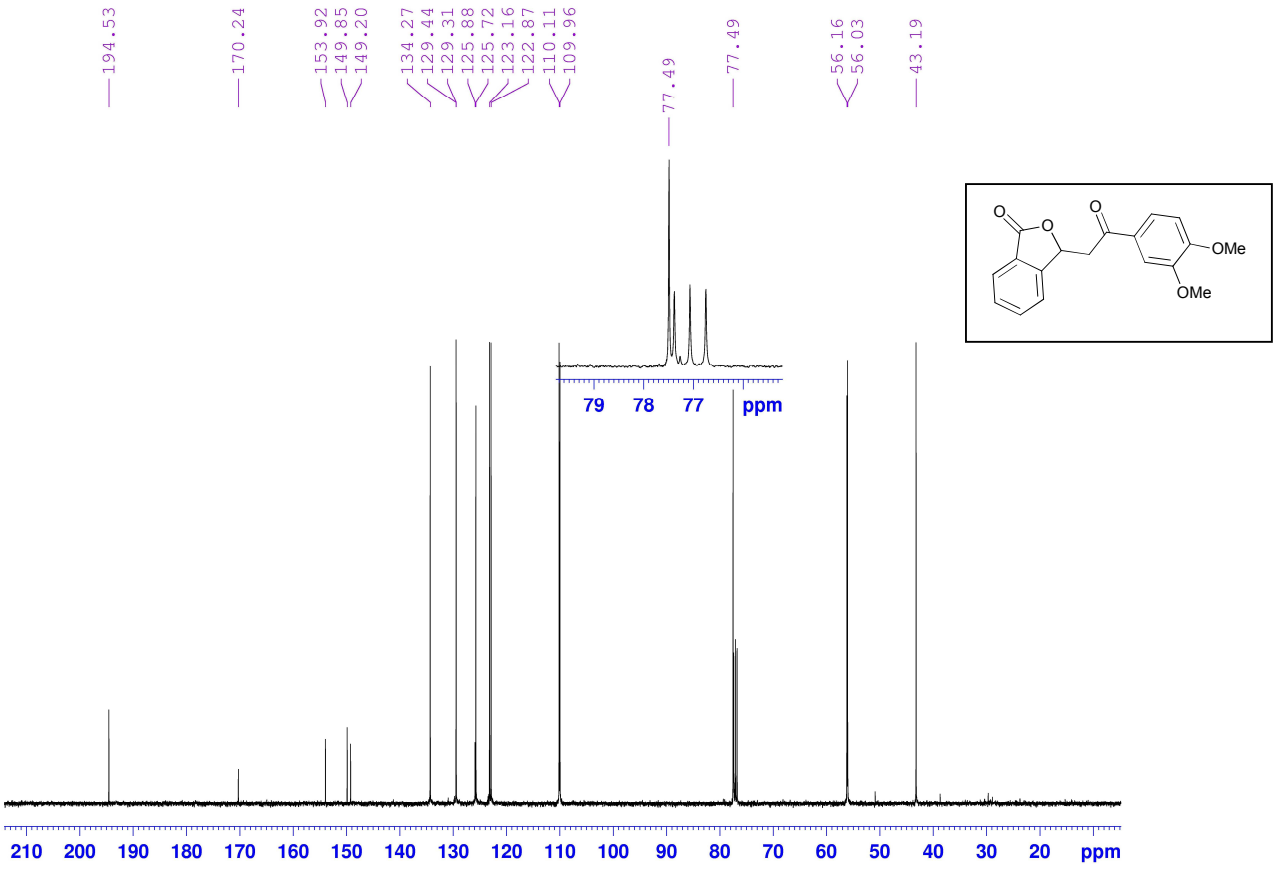
3-[2-(4-Methoxyphenyl)-2-oxoethyl]isobenzofuran-1(3*H*)-one (3c), ^{1}H NMR (500 MHz, $CDCl_3$)



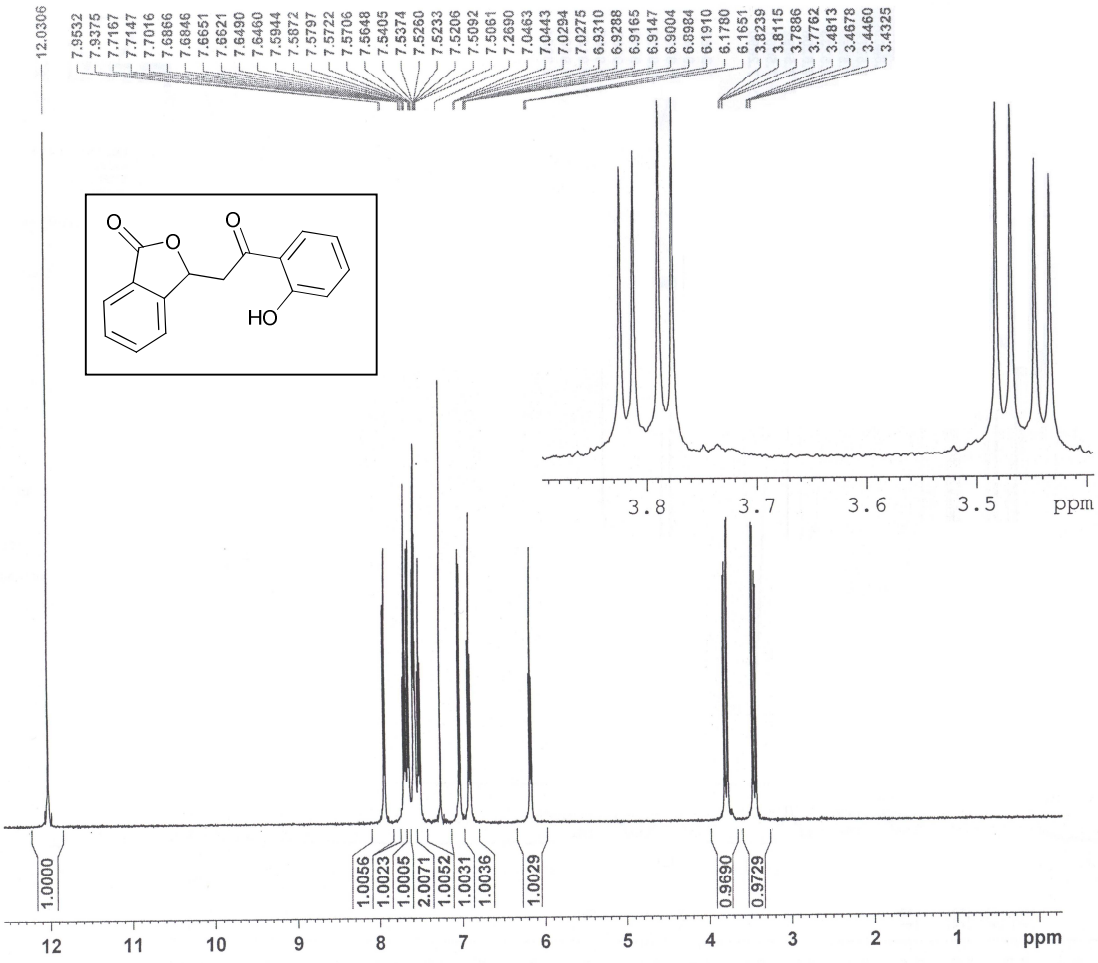
3-[2-(4-Methylphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3d); ^{1}H NMR (400 MHz, $CDCl_3$)



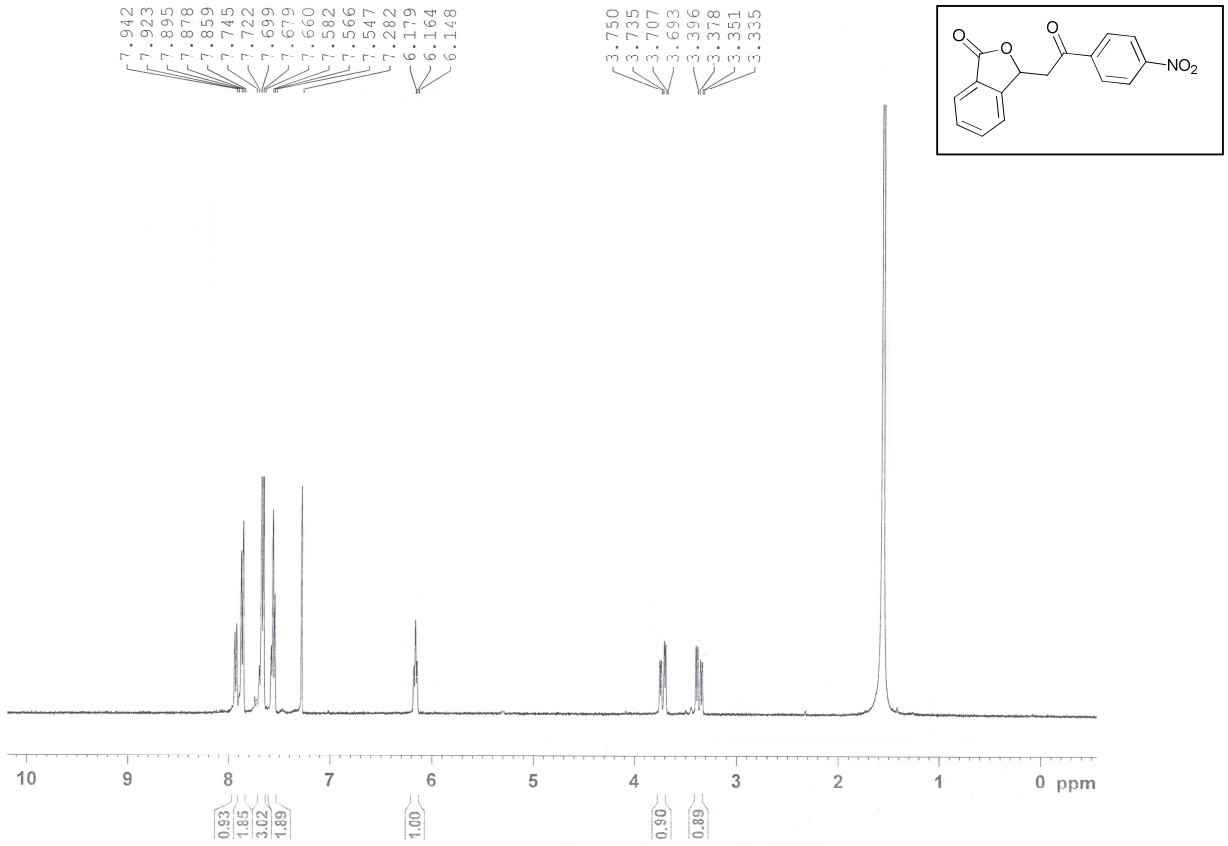
3-[2-(3,4-Dimethoxyphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3e); ^{1}H NMR (400 MHz, $CDCl_3$)



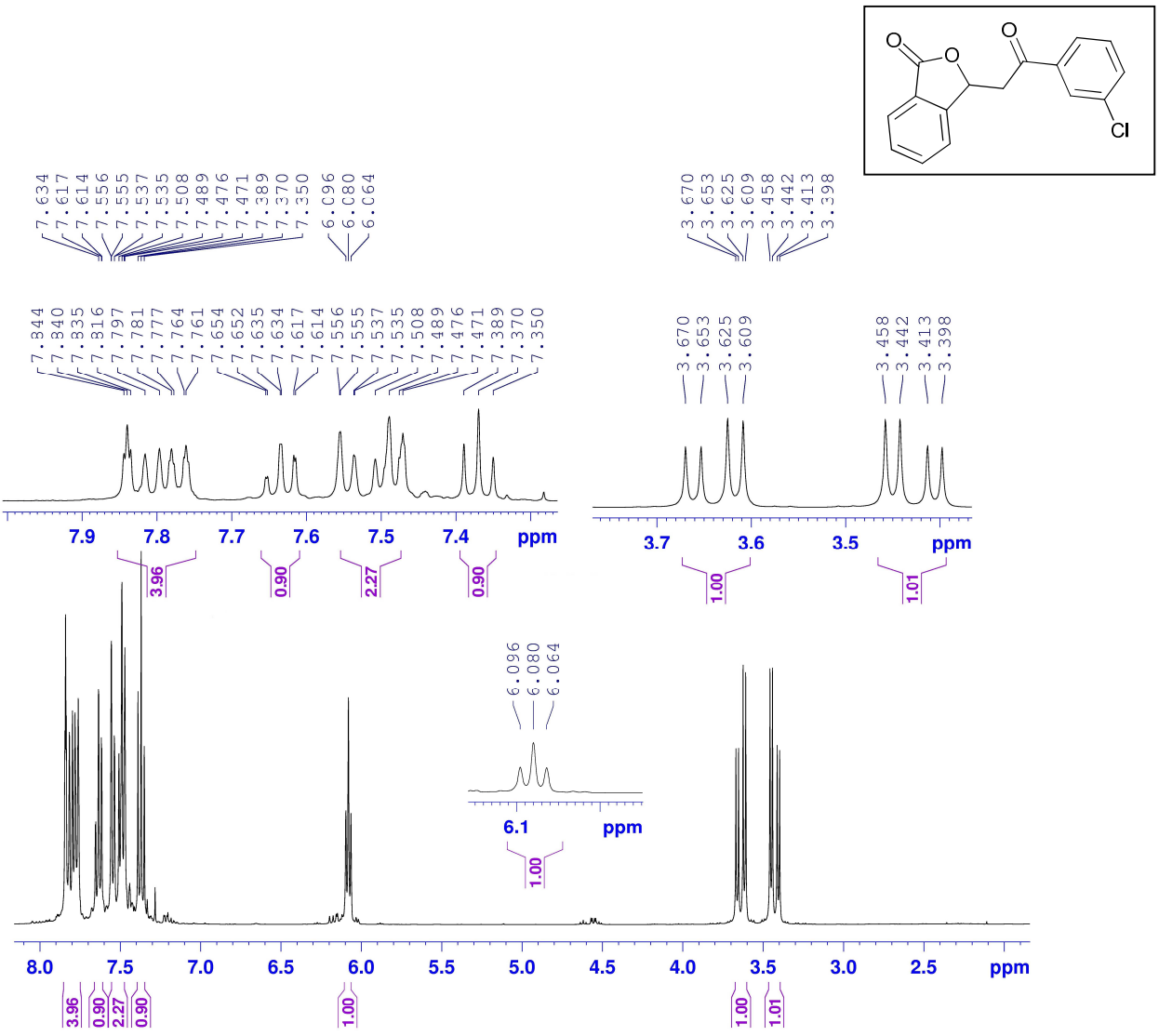
3-[2-(3,4-Dimethoxyphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3e); ^{13}C NMR (100 MHz, $CDCl_3$)



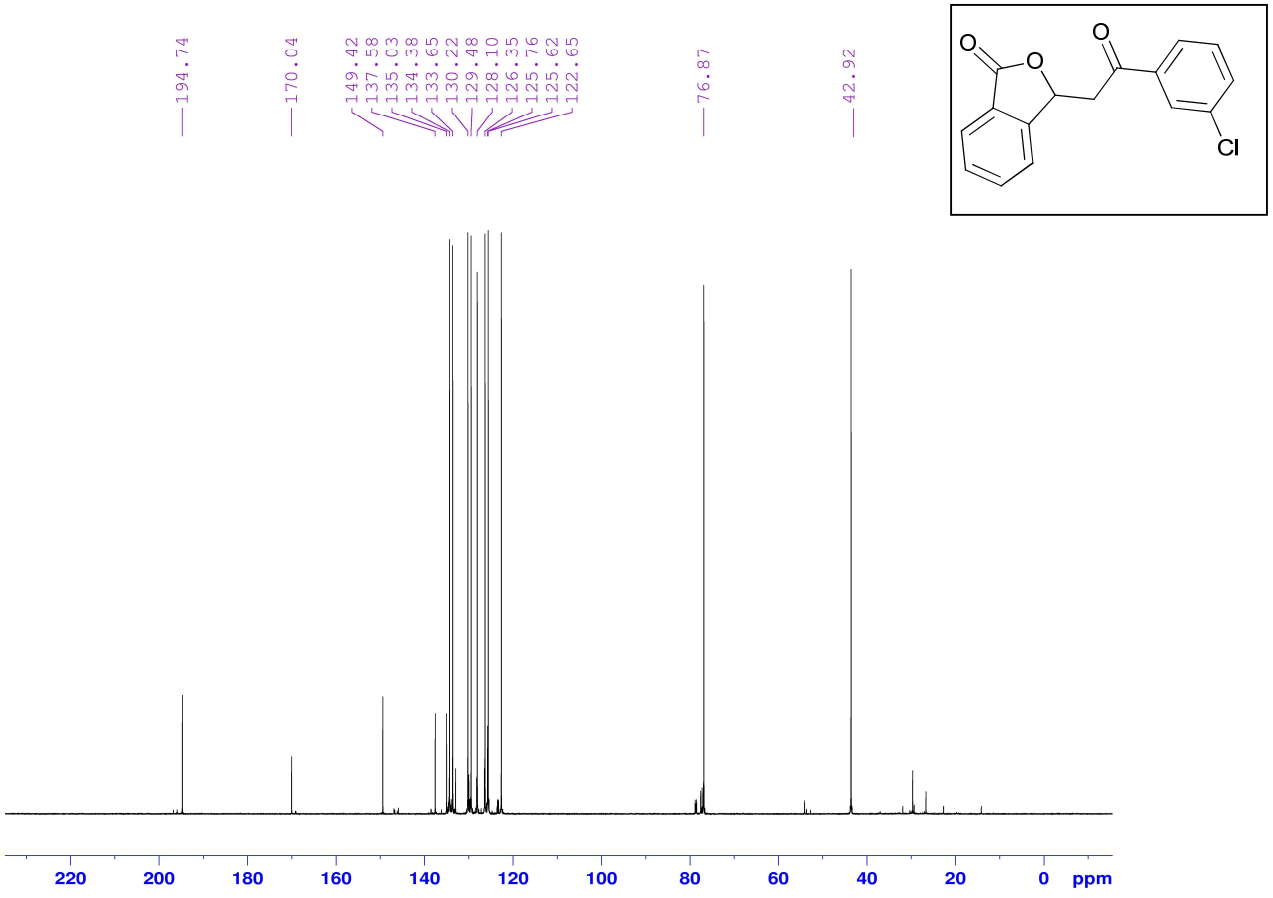
3-[2-(2-Hydroxyphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)one (3f); ^{1}H NMR (500 MHz, $CDCl_3$)



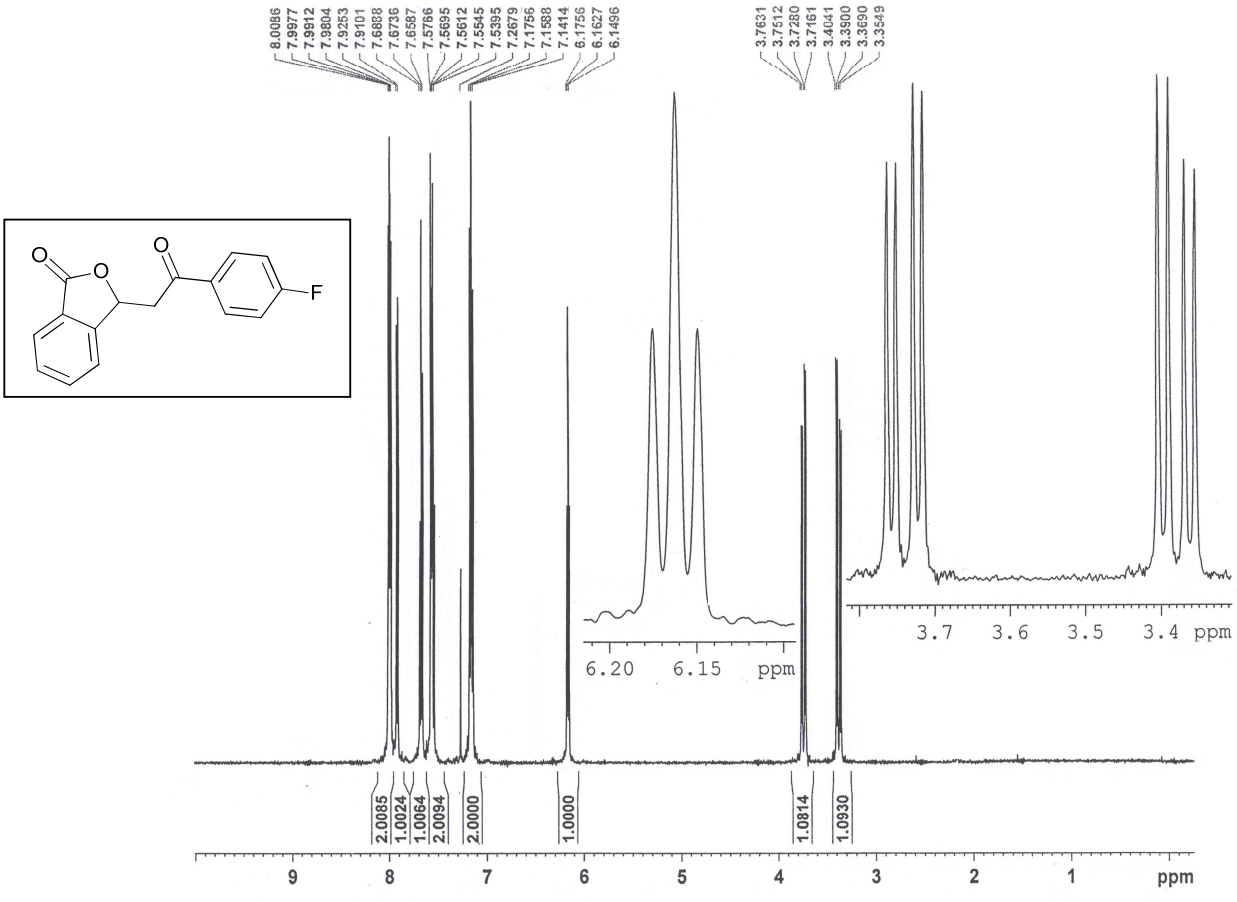
3-[2-(4-Nitrophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3g); ^{1}H NMR (400 MHz, $CDCl_3$)



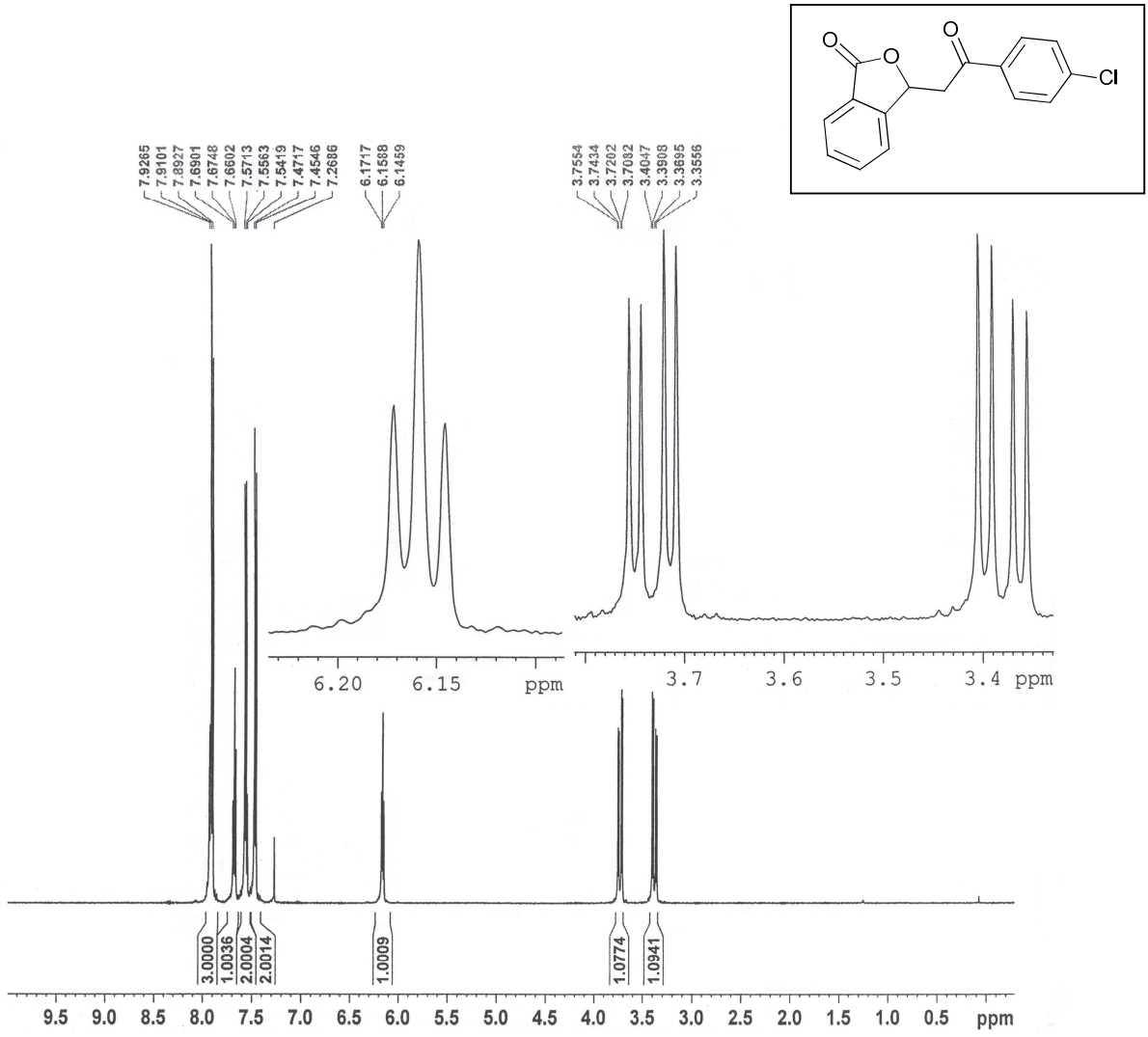
3-[2-(3-Chlorophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3h); ^{1}H NMR (400 MHz, $CDCl_3$)



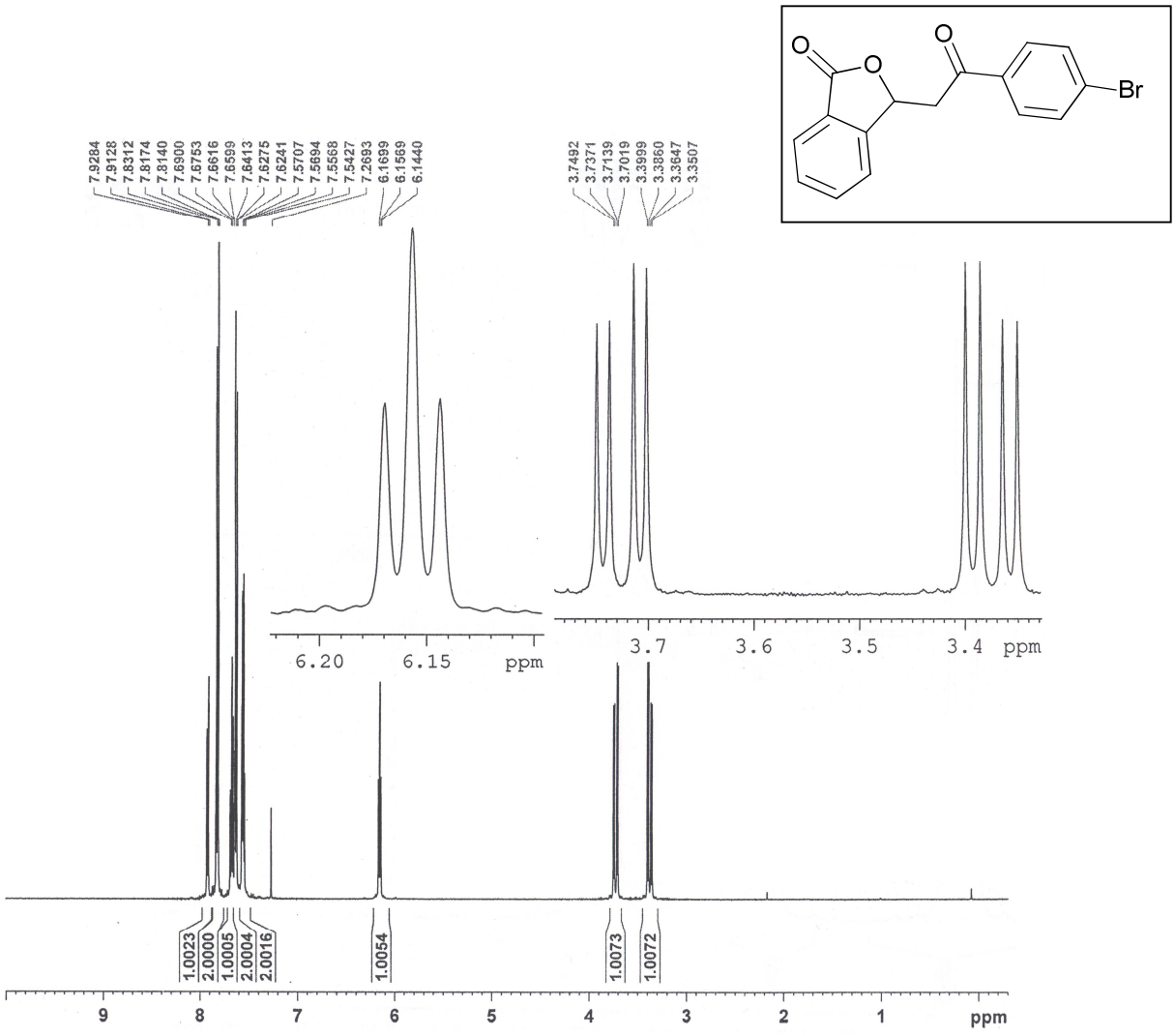
3-[2-(3-Chlorophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3h); ^{13}C NMR (100 MHz, $CDCl_3$)



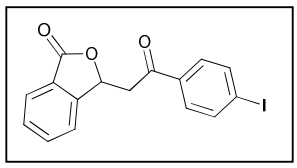
3-[2-(4-Fluorophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3i); ^{1}H NMR (500 MHz, $CDCl_3$)

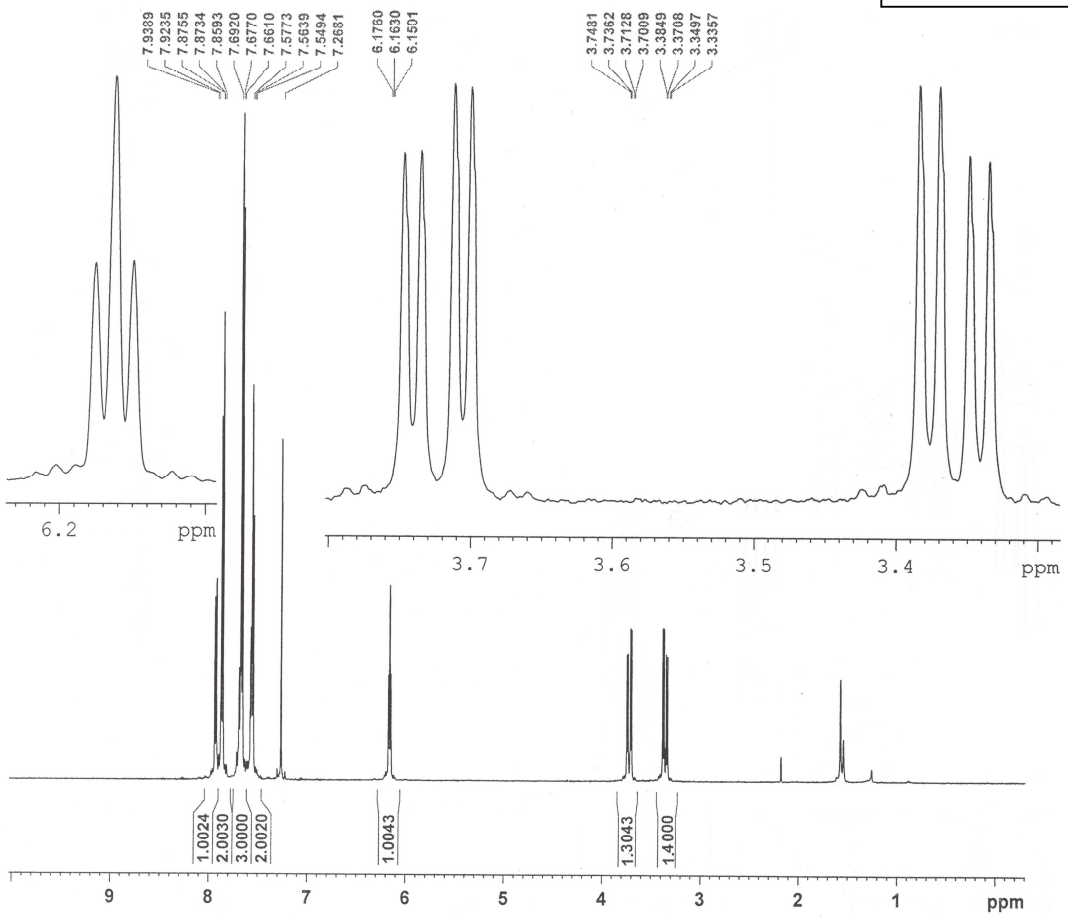


3-[2-(4-Chlorophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3j); ^{1}H NMR (500 MHz, $CDCl_3$)

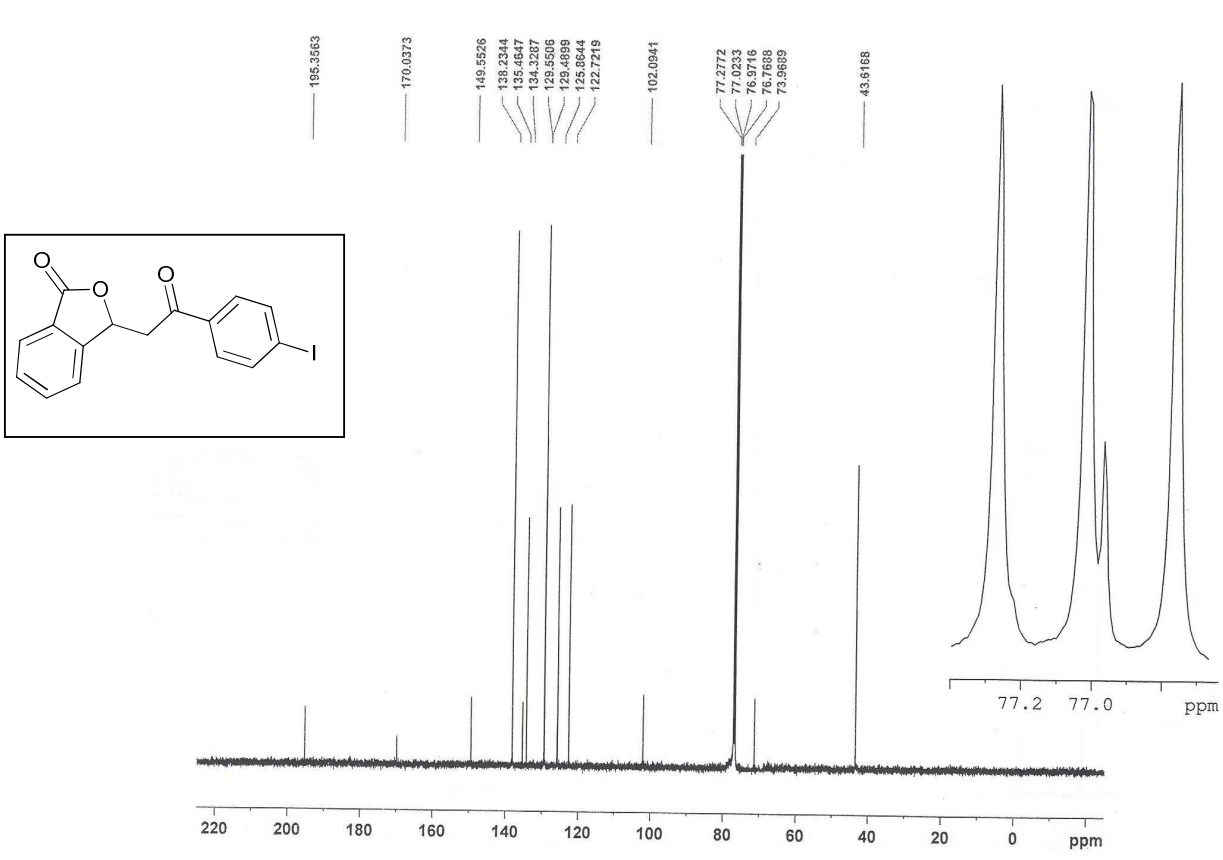


3-[2-(4-Bromophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3k); ^{1}H NMR (500 MHz, $CDCl_3$)

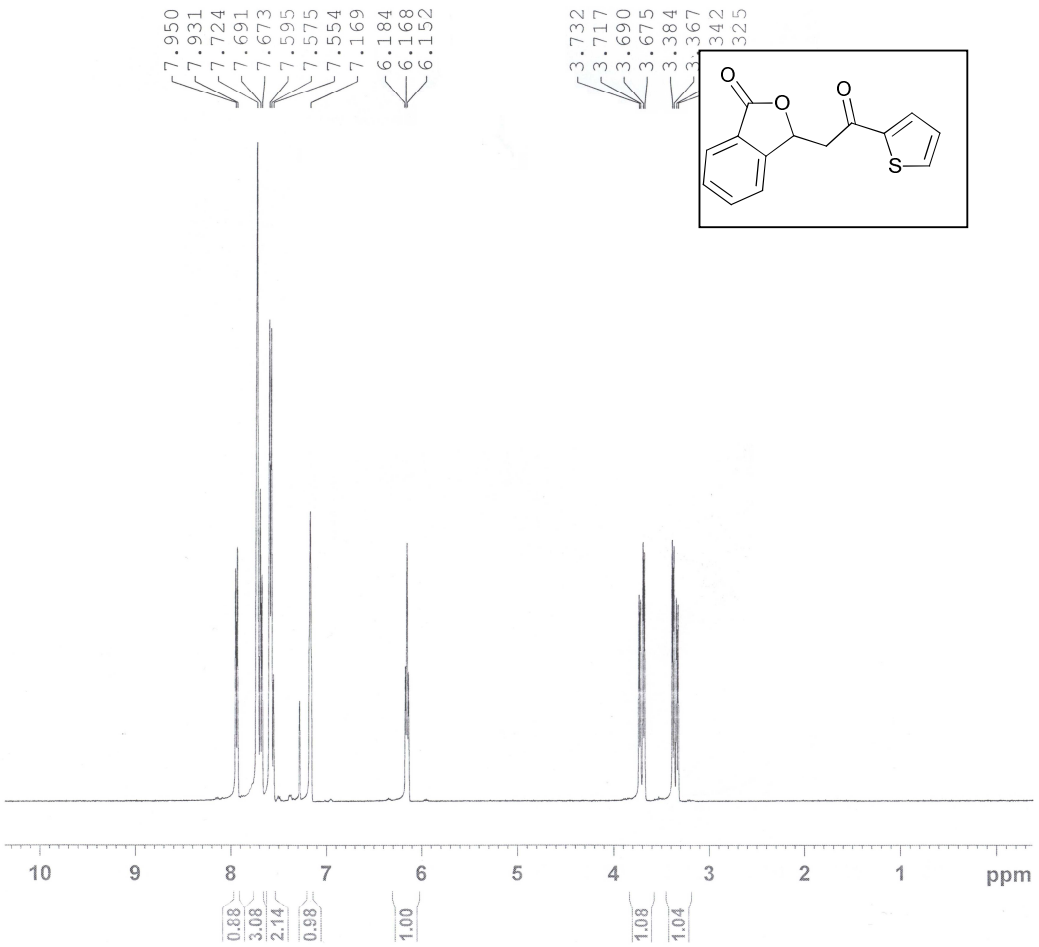




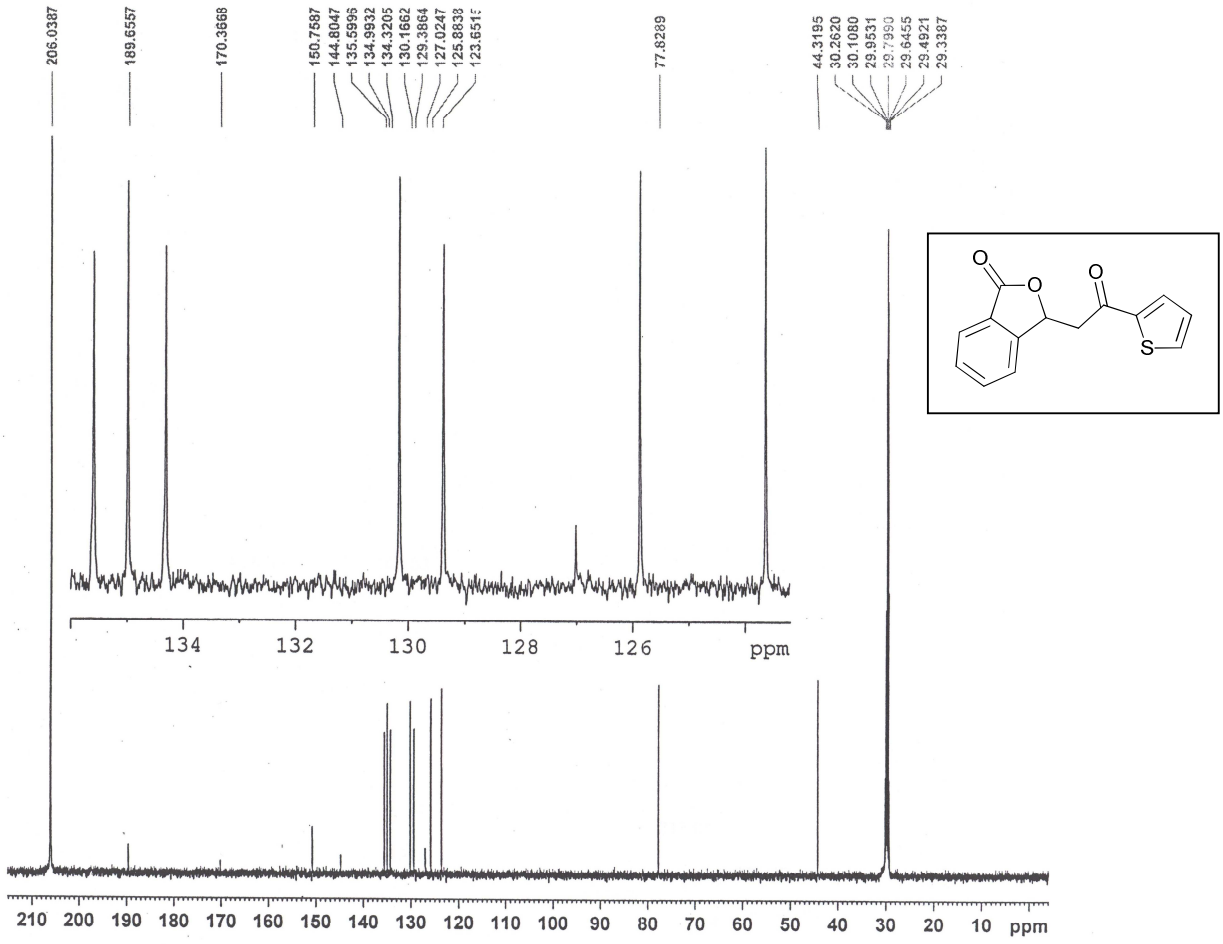
3-[2-(4-Iodophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3l); ^{1}H NMR (500 MHz, $CDCl_3$)



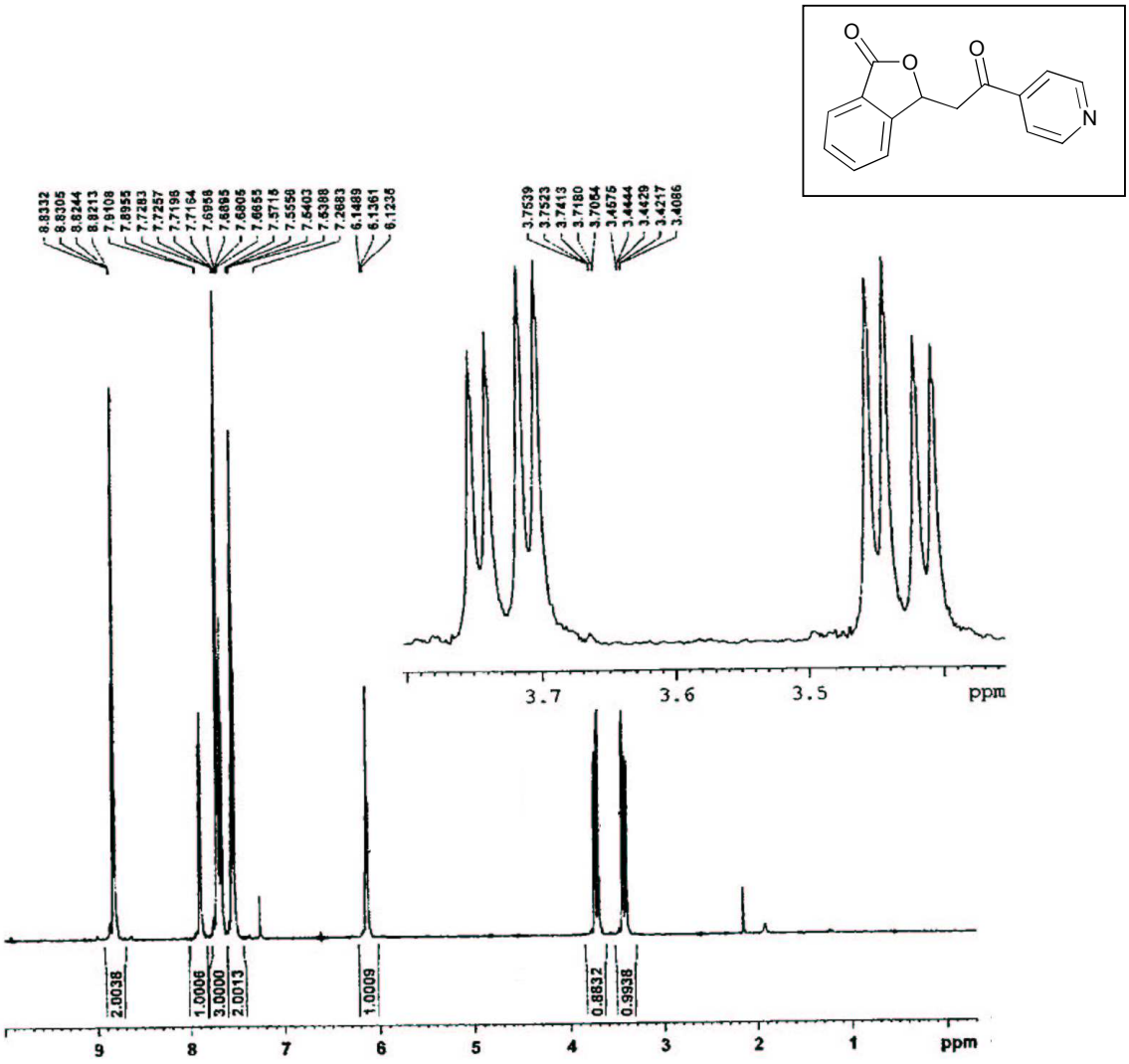
3-[2-(4-Iodophenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (3l); ^{13}C NMR (125 MHz, $CDCl_3$)



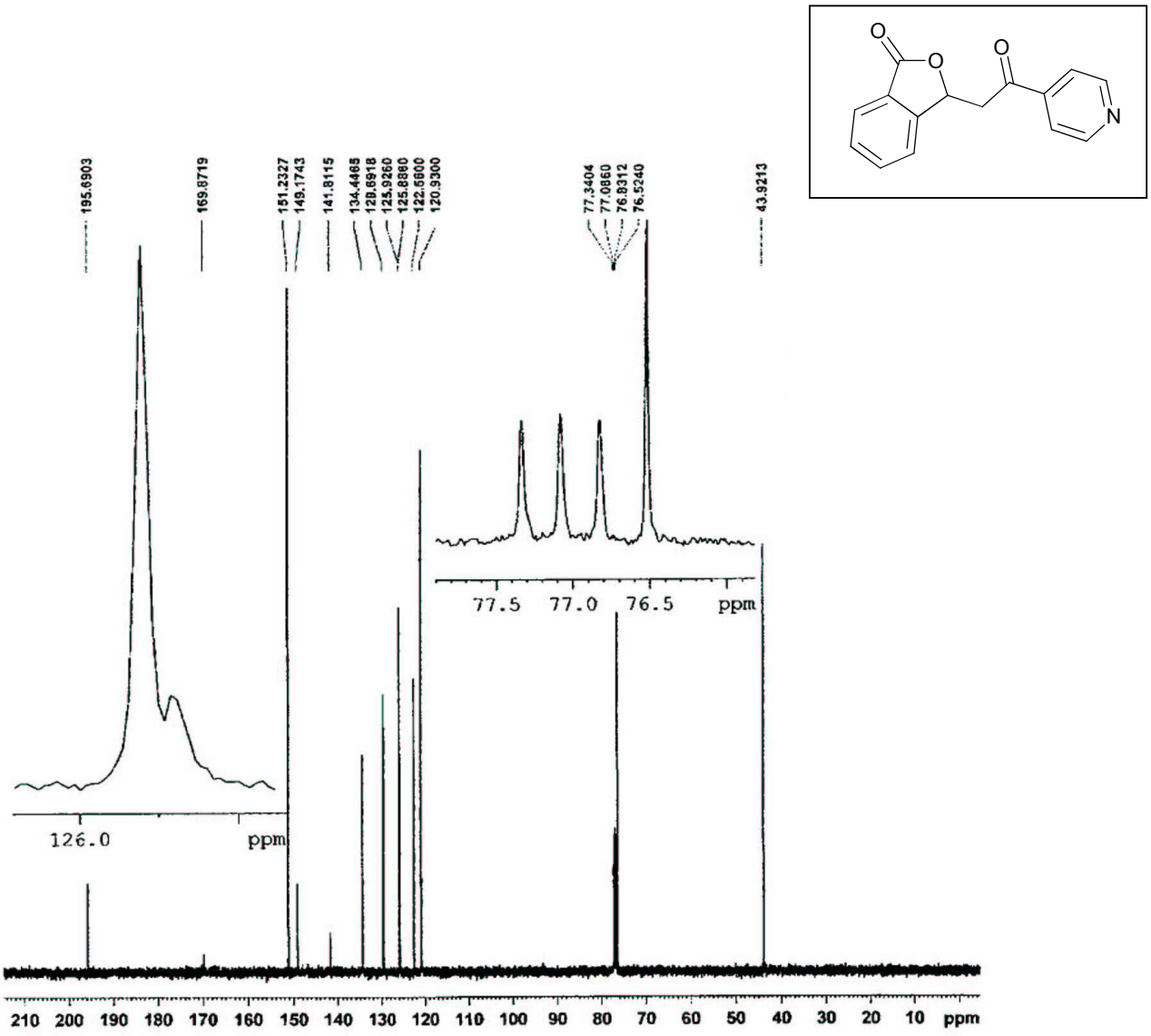
3-(2-Oxo-2-thiophen-2-yl-ethyl)isobenzofuran-1(3*H*)-one (3m); ^{1}H NMR (400 MHz, $CDCl_3$)



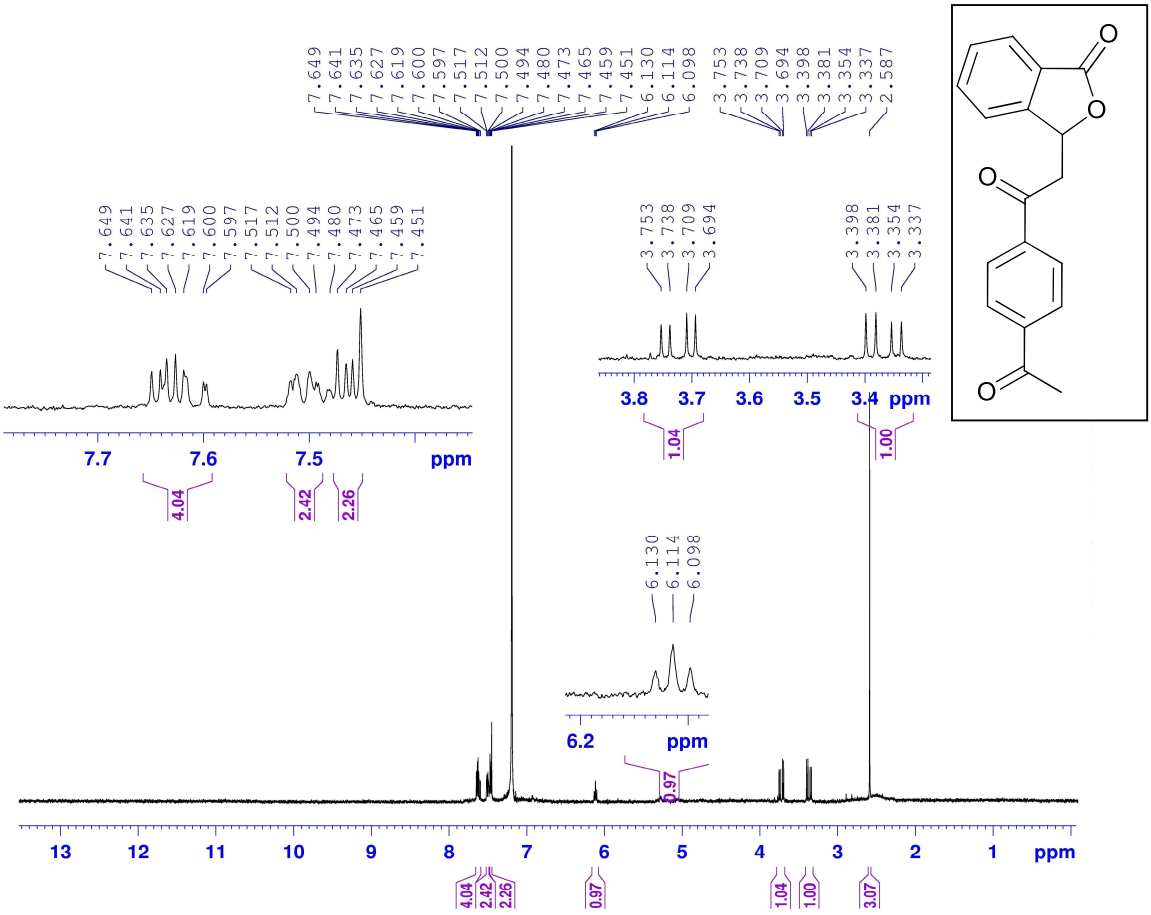
3-(2-Oxo-2-thiophen-2-yl-ethyl)isobenzofuran-1(3*H*)-one (3m); ^{13}C NMR (100 MHz, Acetone-d_6)



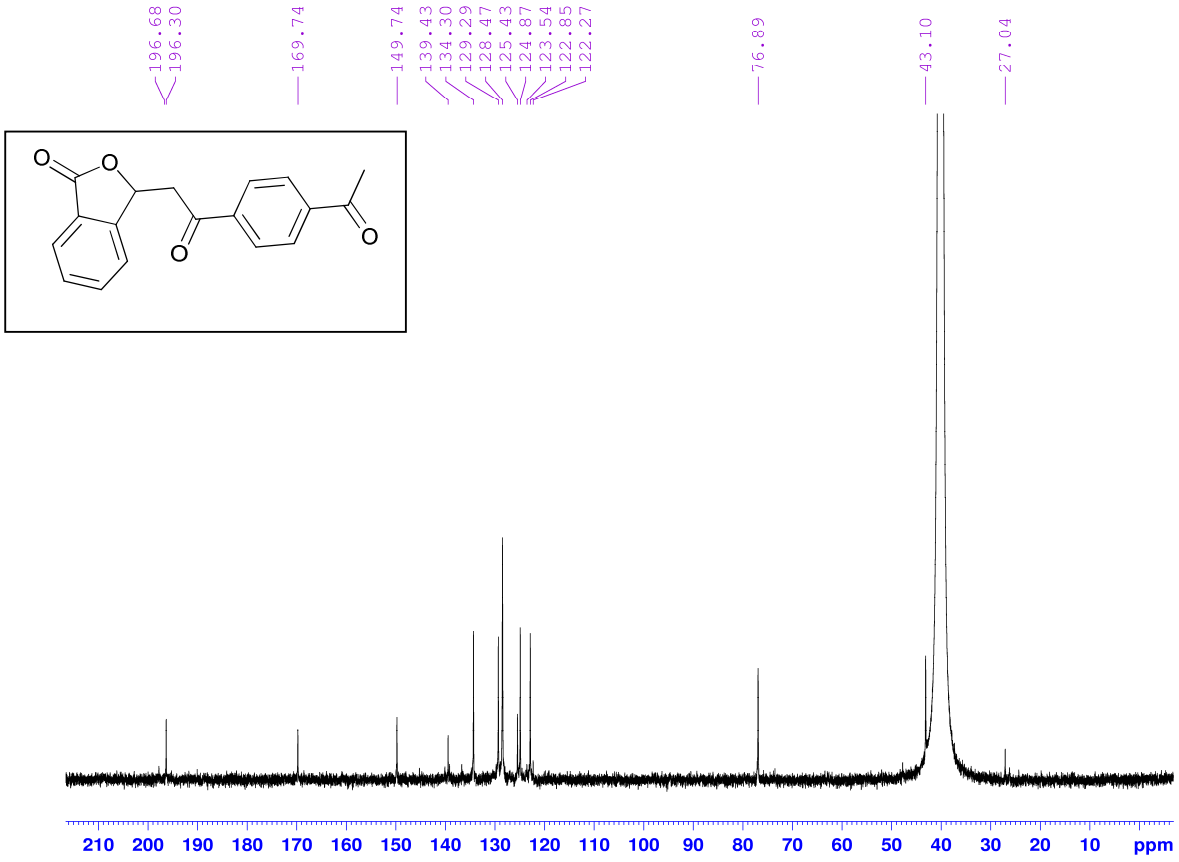
3-[2-Oxo-2-(pyridine-4-yl)ethyl]isobenzofuran-1(3*H*)-one (3n); ^{1}H NMR (500 MHz, $CDCl_3$)



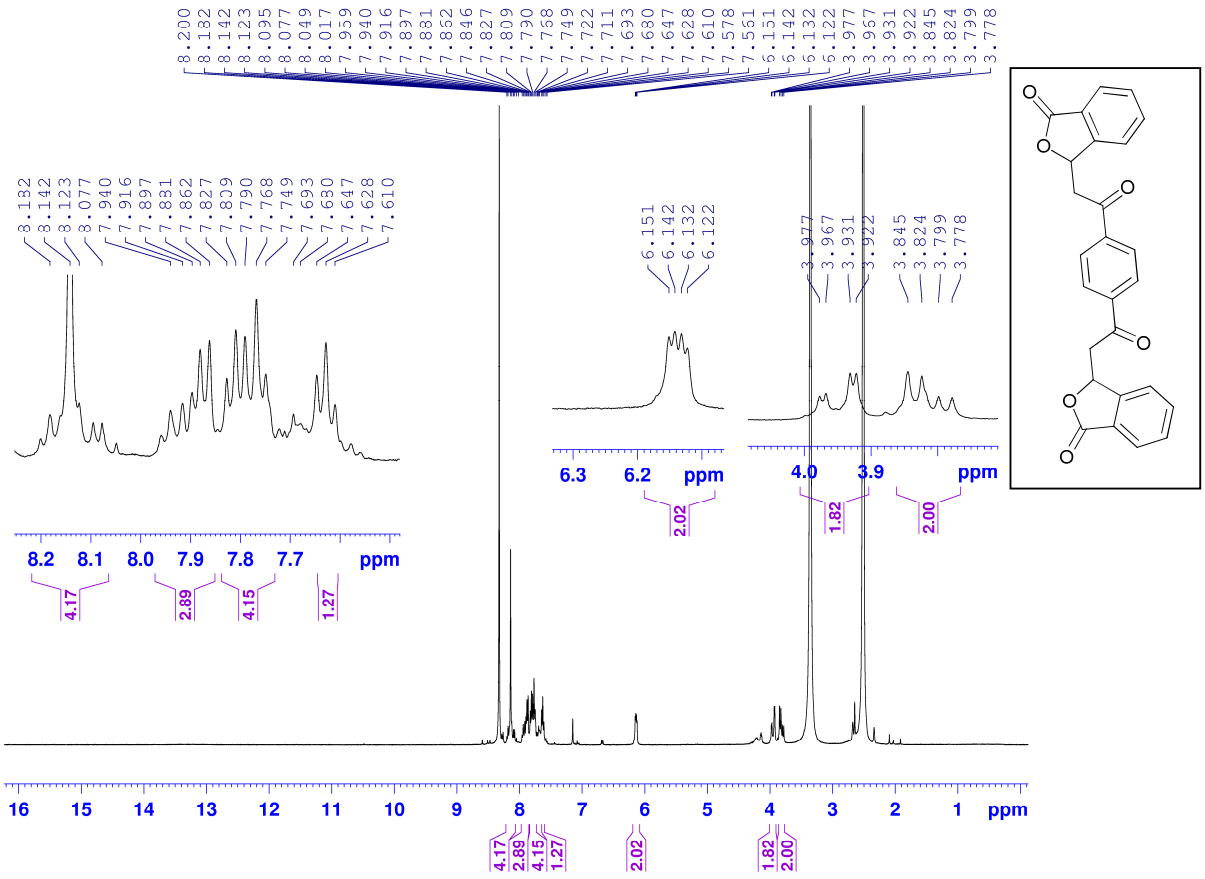
3-[2-Oxo-2-(pyridine-4-yl)ethyl]isobenzofuran-1(3*H*)-one (3n); ^{1}H NMR (125 MHz, $CDCl_3$)



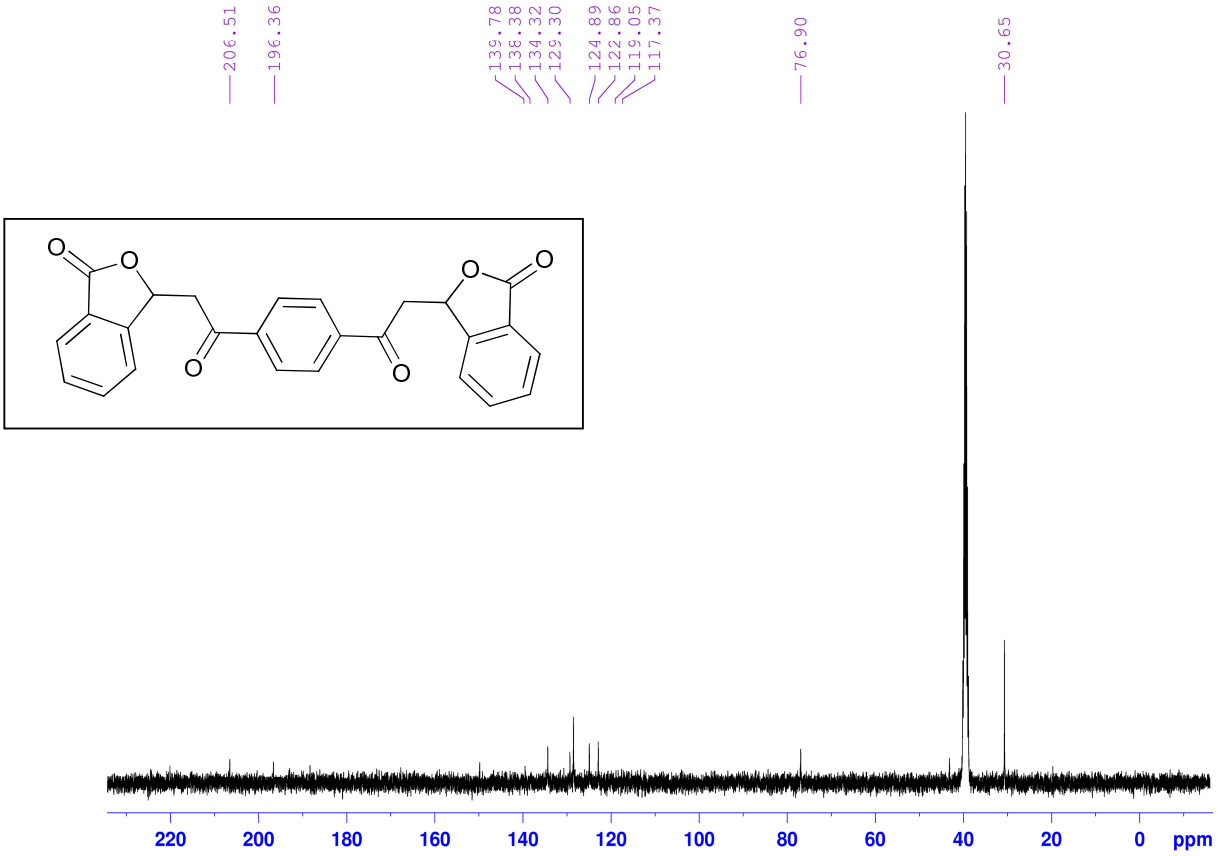
3-[2-(4-Acetylphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (5a); ^{1}H NMR (400 MHz, $CDCl_3$)



3-[2-(4-Acetylphenyl)-2-oxo-ethyl]isobenzofuran-1(3*H*)-one (5a); ^{13}C NMR (100 MHz, DMSO-d_6)



3,3'-(1,4-Phenylenebis(2-oxoethane-2,1-diyl))bis(isobenzofuran-1(3*H*)-one (5b); ^{1}H NMR (400 MHz, DMSO-d_6)



3,3'-(1,4-Phenylenebis(2-oxoethane-2,1-diyl))bis(isobenzofuran-1(3*H*)-one (5b); ^{13}C NMR (100 MHz, DMSO-d_6)