Synthetic, Infrared, ^{1}H and ^{13}C NMR Spectral Studies on *N*-(2/3/4-Substituted Phenyl)-2,4-Disubstituted Benzenesulphonamides, 2,4-$(CH_3)_2$/2-CH_3-4-Cl/2,4-$Cl_2C_6H_3SO_2NH$(*i*-XC_6H_4) (*i*-X = H, 2-CH_3, 3-CH_3, 4-CH_3, 2-Cl, 3-Cl, 4-Cl, 4-F, 4-Br)

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Twenty six *N*-(2/3/4-substituted phenyl)-2,4-disubstituted benzenesulphonamides of the general formulae 2,4-$(CH_3)_2C_6H_3SO_2NH$(*i*-XC_6H_4), 2-CH_3-4-$ClC_6H_3SO_2NH$(*i*-XC_6H_4) and 2,4-$Cl_2C_6H_3SO_2NH$(*i*-XC_6H_4), where *i*-X = H, 2-CH_3, 3-CH_3, 4-CH_3, 2-Cl, 3-Cl, 4-Cl, 4-F or 4-Br, have been prepared, characterized and their infrared spectra in the solid state and ^{1}H and ^{13}C NMR spectra in solution studied. The infrared N-H stretching vibrational frequencies vary in the range 3298 – 3233 cm^{-1}. Asymmetric and symmetric SO stretching vibrations appear in the ranges 1373 – 1311 cm^{-1} and 1177 – 1140 cm^{-1}, respectively, while C-S, S-N and C-N stretching absorptions vary in the ranges 840 – 812 cm^{-1}, 972 – 908 cm^{-1} and 1295 – 1209 cm^{-1}, respectively. The various ^{1}H and ^{13}C NMR chemical shifts are assigned to the protons and carbon atoms of the two benzene rings in line with those for similar compounds. The incremental shifts due to the groups in the parent compounds have been computed by comparing the chemical shifts of the protons or carbon atoms in these compounds with those of benzene or aniline, respectively. The computed incremental shifts and other data were used to calculate the ^{1}H and ^{13}C NMR chemical shifts of the substituted compounds in three different ways. The calculated chemical shifts by the three methods compared well with each other and with the observed chemical shifts. It is observed that there are no particular trends in the variation of either the infrared absorption frequencies or the chemical shifts with the nature or site of substitution.

Key words: IR; ^{1}H and ^{13}C NMR; *N*-(Monosubstituted Phenyl)-Disubstituted Benzenesulphonamides.