Research

(a) Completed

1. The role of the clinical pharmacist in the healthcare delivery system (B.Pharm. project March, 2004)
2. Engineering crystalline 4-carboxyl-2,6-dinitrobenzenediazonium (CDNBD) reagent: ionisation modelling in acid and basic media (M.Sc. project March, 2010)
3. Novel colorimetric sensors for cyanide based on azo-hydrazone tautomeric skeletons
4. Novel visible spectrophotometric method for the determination of phenothiazines using sulphonated dye intermediates
5. Design, synthesis and spectroscopic characterization of non-natural amino acids for use in the optimisation of a lead compound with antilipidemic activity
6. Design, synthesis optimisation and SAR of novel tetracyclic compounds as potential food additives and/or medicinal agents.
7. Purification, spectroscopic characterisation and solvatochromic investigation of novel tetracyclic compounds
8. Biophysical interactions of novel azo compounds with endogenous substances (albumin, DNA) and their genotoxicity evaluation using alkaline comet, cell nuclei diffusion assays UV and CD spectroscopic techniques

(b) In progress

1. Metabolites profiling of novel azo compounds as alternative to clinically useful marker dyes and food colourants

Ongoing efforts includes the structure elucidation of the metabolites of the compounds by GC-MS characterisation following anaerobic azo reductase cleavage of the azo linkages. In addition, acute and sub-chronic toxicity of the dyes will be carried out and the genotoxicity potential of the resultant metabolites examined by *in vivo* chromosomal aberration and micronuclei assays.

(c) Thesis

Design and synthesis of novel non-toxic azo colourants based on the tetracyclic skeleton