

A Residential Visit from St-Benedicts Catholic High School To The Department Of Chemistry @ The University of York

The primary aim of this residential was to give year 13 students some hands on analytical chemistry practical sessions in the undergraduate teaching labs in university, using methods and equipment that would not be possible in the school environment, and secondly to introduce the students to the life of a science student at university. The students stayed in the Halls of Residence at the university, and experienced two days of Lectures, and laboratory time.

Day one began at 10.30am after the long trek from Whitehaven (West Cumbria) to York. The students began in a lecture by Dr Annie Hodgson entitled "Chemistry @ University" where Annie introduced the students to the department, the courses that run at university's across the country, not just York, the expectations of successful candidates, and also what to write in a persuasive personal statement. This was followed by a tour of the campus and a break for some lunch at one of the university canteens.

The afternoon saw the first of the practical sessions lead by Professor Jane Thomas-Oates, preceded by the lecture "Analytical Chemistry – Methods to Analyse Fats". The students spent the rest of the afternoon in the labs preparing and analysing the various fats in the collection of fast food samples they had brought with them (burgers, pizza). This involved a saponification reaction, aqueous extraction and conversion to Fatty Acid Methyl Esters (FAMES) by acid catalysed esterification. These FAMES were then set aside for analysis on GC and GC-MS the next day.

The evening saw the students enjoy dinner in York City Centre and then a Ghost Tour of the city, which they thoroughly enjoyed.

The following morning the students had an introduction to GC-MS, HPLC and LC-MS where they analysed the samples that they had prepared the day before. This was followed by an Organic Synthesis practical session with Dr Paul Clarke where the students performed a Friedel-Crafts alkylation "Preparation of 4, 4'-Di-(tert-butyl)biphenyl. The students managed to follow the script very well and demonstrated great skill and knowledge with a preparation that is used for the first year synthesis course at the university. The crude product was recrystallized and the pure product was analysed by IR and ^1H NMR.

Finally the students had a lecture by Professor Dave Smith "Professor Dave's Amazing Molecules – Life Saving Organic Chemistry" which the students found very interesting, prompting many discussions for the 4 hour mini-bus journey back to Whitehaven that afternoon!

Many thanks to the academic staff at the Department of Chemistry @ The University of York for their help and time over the 2 days, the students thoroughly enjoyed themselves (as did the staff!)

I would like to thank the RSC and the NWAD in particular for the grant provided to allow us to give the students this fantastic 2 day experience of being a chemistry student.