

## Alexander Papiez

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## Education

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### September 2009-July 2013: Northumbria University

MChem Applied Chemistry, Year 3 Classification 2:1

Year 3 Dissertation title: Predicting Mass Spectra using Density Functional Theory Calculations.

### September 2007-July 2009: Stokesley Technology College

A2 Physics B, A2 Chemistry B, A2 Mathematics D AS French D,

### September 2002 – July 2007: Stokesley Secondary School

10 GCSEs including : Science double award A\*/A\*, Mathematics B, English Literature B, English Language B

## Volunteering

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### Northumberland Wildlife Trust - March 2011

I volunteered at Druridge Bay County Park for the Northumberland Wildlife Trust. I was involved in various tasks including the construction of a cobble path for visitors to the park, the maintenance of bird nests and the trimming of overgrown trees. I enjoyed this experience and found it extremely rewarding.

## Laboratory Experience

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4<sup>th</sup> Year dissertation project, **Synthesis of novel amino functionalized methacrylate polymers**. Working on this project, I have conducted experiments in **amino acid coupling techniques** and **polymer chemistry**. I have also researched and implemented synthetic methods to produce target materials in the desired amounts. I have used various separation techniques such as column chromatography to remove impurities and size exclusion chromatography to isolate polymers of the desired size range. I routinely use **NMR** and **FTIR** analysis to assess compound structure and Purity. Reaction yields were initially quite low, I increased these yields by allowing greater time for reactions to complete, this was due to the time sensitive nature of free Radical polymerization.

I have strongly developed analytical skills, honed during my studies. I have experience with a range of analytical techniques including **HPLC**, **GC**, **Size Exclusion Chromatography**, **X-Ray Fluorescence Spectroscopy** and **Atomic Absorption Spectroscopy** for quantitative studies. I also routinely use **NMR** and **FTIR** techniques in qualitative studies.

I have a good deal of practical laboratory experience covering a wide range of applications such as physical chemistry, organic and inorganic synthesis and quantitative analysis.

## Skills

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### **IT skills**

I have extensive experience in office packages, including Microsoft Word, PowerPoint and Excel; SPSS, for statistical analysis; Gaussian and Hyperchem for molecular mechanics and ab-initio studies of molecular structures. I am confident with Marvin sketch and other similar programs for the drawing of molecular structures for use in written reports. The wide range of programs that I have become familiar with while working towards my degree allow me to quickly and easily adapt to any new software I am tasked to use.

### **Presentation Skills**

My degree requires me to deliver presentations to large audiences of peers and to experts. These projects have developed both my confidence and presentation technique. I have learned to present complex concepts in a concise and easy to understand manner. These skills are important for a chemist as they allow me to relate the key points of an investigation to others while keeping their interest.

### **Report writing**

I have learned to write scientific reports in a manner that cuts out superfluous information and highlights important facts, making the results of my scientific investigations clear and transparent. My dissertation has taught me that effective use of images in a scientific report is crucial, as it can help illustrate a difficult concept in a very efficient manner.

### **Teamwork**

During my time at university, my ability to work in a team has been very important, several projects have required that I work in groups to produce data for later analysis, and I have helped ensure the group stay on task to deliver accurate and expedient results. I think the most important aspect to team work is the ability to appreciate and accommodate a range of personalities, to bring as many assets as possible to the team.

## About Me

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I am passionate about chemistry. I chose chemistry as my Degree subject because I am fascinated by the natural world, and am keen to develop the real world applications of scientific theory and knowledge. When I have completed my degree, I hope to find an occupation that will fit my personal talents and analytical mind-set.

- I am hard working and Dependable
- I have a high level of technical knowledge
- I have analytical and synthetic lab experience
- I work well in a team
- I work well under pressure

## Hobbies

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### **Building Computers**

I have built numerous computers for myself, for friends and for family. I find that that a better understanding of how a machine is put together helps me get the most out of a system and allows me to trouble shoot errors and improve productivity. To this end, I have also begun to learn Python, a computer programming language.

### **Reading**

I enjoy reading a wide range of books, from nonfiction including Antony Beevor's "*The Second World War*" to novels such as Stephen King's "*The Stand*". I also enjoy keeping up with current affairs, and reading articles from Chemistry World (RSC members magazine) to keep up with the latest techniques and advances in chemistry.

### **Sports**

I play golf and squash with friends. I find that these are excellent ways to relax and unwind with my friends.

### **Video Games**

I am passionate about video games as a hobby, and appreciate them as activities that engender team spirit and cooperation.

## References

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Dr Justin Perry,  
Tutor,  
4<sup>th</sup> Year Project Supervisor  
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