
Dr. Simge Davulcu

PhD in Chemistry Research at University of Bath

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Education

PhD in Chemistry Research

October 2010 – February 2014

University of Bath, UK

PhD Supervisor: Professor Jonathan M. J. Williams

Main research area is organic chemistry with interests in developing novel, transition metal catalysed methodologies to synthesize pharmaceutically important molecules. PhD research investigated the development of catalytic, more environmentally benign and cost effective methodologies for amide bond formation. The methodologies were aimed to address the current lack of atom efficient and more sustainable synthesis options for preparing amides which are widely found in pharmaceutical, agrochemical and natural products.

MChem Chemistry (Hons) with Industrial Training

September 2005 – June 2010

University of Bath, UK

MChem Project Supervisor: Professor Jonathan M. J. Williams

After three years of undergraduate study including one year industrial placement at GlaxoSmithKline, "BSc Hons in Chemistry with Industrial Training" degree was obtained (2005-2009). In 2009-2010 one year of study including a semester long research project and a set of semester long advanced chemistry lectures have led to "Master of Chemistry with Industrial Training" degree.

During the MChem year, my project involved working with aldoximes for acylation of amines to synthesize amides. A nickel chloride catalysed aldoxime rearrangement was established which proceeded *via* a nitrile intermediate to react with amines, yielding amides. This work was published in *Organic Letters* in 2010.

Science Foundation Year

September 2004 – June 2005

City of Bath College, UK

A Levels Obtained: Chemistry (Grade A), Biology (Grade A), English (Grade A)

Teaching & Work Experience

Organic Chemistry Teaching Fellow

March 2013 – Current

The American University, Cyprus Pre-Medical and Health Sciences Department

Taught General Chemistry and Organic Chemistry lectures to first and second year Pre-Medical Foundation students as well as first year undergraduate students studying Nutrition and Dietetics. Responsibilities included ensuring a high standard of teaching quality, preparation of teaching material, weekly held workshops and exam questions, as well as demonstrating in practical laboratory classes.

Residential Tutor

September 2012 – September 2013

University of Bath, UK Claverton Campus

Responsibilities included ensuring a high standard of student welfare within the university residences, helping students to settle in and providing advice, signposting to other support services where needed and arranging a wide range of social events throughout the academic year. Completed a two-day Mental Health First Aid Training course as part of providing a better welfare support for students.

Organic Chemistry Tutor

September 2012 – May 2013

University of Bath, UK Department of Chemistry

I gave one-to-one organic chemistry tutorials to second year undergraduate chemistry students who have been referred to me by the Department of Chemistry, to improve the students' learning outcomes.

Student Learning Support Worker

October 2010 – January 2013

Randstad, UK

Assisted undergraduate chemistry, biochemistry, pharmacy and pharmacology students who have learning disabilities with lecture notes and in practical laboratory classes. My role also included scribing and reading for the students in examinations.

Chemistry Undergraduate Laboratory Demonstrator

October 2010 – 2013

University of Bath, UK Department of Chemistry Undergraduate Teaching Labs

Supervision of undergraduate students in chemistry teaching laboratories. Demonstrated experiments to all year groups of undergraduate students. Roles involved dealing with small and bigger student groups (up to 90 students) in the laboratory to assist them with answering the pre-lab questions and interpreting experiment results, and also ensuring health and safety in the laboratory environment. Additional responsibilities included marking the laboratory reports and giving feedback to students on the marked laboratory reports.

HE-STEM OUTREACH Chemistry Student Ambassador

October 2011 – 2012

University of Bath, UK Department of Chemistry

Student ambassador at the Department of Chemistry as part of the National Higher Education (HE) Science, Technology, Engineering and Mathematics (STEM) Programme. Completed one day STEM OUTREACH training. I have been involved in many activities such as science festivals, school visits and chemistry summer schools which aimed to widen participation in STEM and inspire younger students to study science.

Industrial Placement Student

September 2008 – August 2009

GlaxoSmithKline, Stevenage UK Analytical Sciences Department

Industrial trainee as analytical chemist; analysis of the active pharmaceutical ingredients (API) of batch products to identify impurities using various analytical techniques such as High Performance Liquid Chromatography (HPLC), HPLC-Mass Spectrometry, Gas Chromatography and NMR Spectroscopy.

Scholarships and Awards

EU Scholarship

Turkish Republic of Northern Cyprus

20011/12 Academic Year

Scholar of EuropeAid - Scholarships for the Turkish Cypriot community Programme (Awarded EUR 15000 to cover the expenses of second year of PhD Research at Bath University.)

GlaxoSmithKline Duncan Bryant Memorial Prize

August 2009

GlaxoSmithKline, Stevenage, UK

I have been awarded "Duncan Bryant Memorial Prize for the Best Industrial Placement Student Presentation".

Publications to Date

1. S. Davulcu, C. L. Allen, K. Milne and J. M. J. Williams, *ChemCatChem* **2013**, 5, 435-438, "Catalytic Conversion of Nitriles into Secondary- and Tertiary Amides"
2. C. Liana Allen, Simge Davulcu, and Jonathan M. J. Williams, *Org. Lett.*, **2010**, 12 (22), 5096–5099, "Catalytic Acylation of Amines with Aldehydes or Aldoximes".

Conference presentations

1. Poster with oral presentation at the 5th European Association for Chemical and Molecular Sciences Chemistry Congress (EuCheMS), Istanbul, Turkey, poster titled "A new Intermediate in Catalytic Amide Synthesis: Amidoxime" and oral presentation "Mechanistic Studies into Zinc and Hydroxylamine Catalysed *N*-Substituted Amide Formation from Nitriles", 31 August – 4 September **2014**
2. Poster presentation at the 18th European Symposium on Organic Chemistry (ESOC), Marseille, France, "Catalytic Conversion of Unactivated Nitriles into *N*-Substituted Amides", 7-12 July **2013**
3. Invited Oral Presentation at the RSC Bio-Organic Group Postgraduate Symposium, Manchester University, "Mechanistic Studies on Catalytic Conversion of Nitriles into Secondary and Tertiary Amides", 11 April **2013**
4. Poster Presentation at South West Regional Meeting of the Organic Division of the Royal Society of Chemistry (RSC), Cardiff University, "Zinc triflate Catalysed Amide Synthesis from Nitriles and Amines", 11 January **2013**
5. Invited Poster Presentation at 243rd ACS National Meeting, San Diego, CA, "Metal Catalysed Amide and Amidine Synthesis", 25-29 March **2012**.

References

PhD Supervisor: Prof. Jonathan M J Williams, University of Bath, Bath, UK

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Second PhD Supervisor: Prof. Chris Frost, University of Bath, Bath, UK

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