

European Vacation Placements: Reports 2013

Below are reports on the Summer Placements provided by students who participated in the scheme in 2013.

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ETH, Zurich, Switzerland

Report 1

1. General

Placement Location: **ETH Zürich, Switzerland**

Arrival and Departure Dates: **1st July - 24th August**

No. of working days spent at Institution: **37**

2. Financial

Cost and method of return travel from the UK (£): **£209.30, British Airways London Heathrow-Zurich International**

Total cost of daily travel to and from Institution (£): **£84.28 (2xmonthly travel passes)**

Total cost of accommodation (say if provided free): **£754.14**

Value of Armourers & Brasiers/Alcan bursary: **£800**

Total received from College: **£500 for travel to and around Switzerland**

Total received from Institution (£): **£738**

3. Accommodation

Accommodation address: **Meierwiesenstrasse 62, Nr. 22/1. Stock, 8064 Zurich, Switzerland**

Type of Accommodation: **International Student House, small individual rooms, large common room, large shared kitchen & several shared bathrooms**

Distance from Institution: **20-25 minutes by tram and bus**

Quality of accommodation on a scale of 1 (low) to 10 (high): **7**

Quality of facilities on a scale of 1 (low) to 10 (high): **6 – the kitchen got very messy particularly on Sunday evenings**

Convenience of location on a scale of 1 (low) to 10 (high): **8**

4. Research Project

Title of Research Project: **Patterned Surfaces as Templates for Controlling the Crystallization of Active Pharmaceutical Ingredients**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Scanning electron microscope, optical setup**

Interest level of project on a scale of 1 (low) to 10 (high): **8**

Quality of support provided on a scale of 1 (low) to 10 (high): **9**

Interaction with other researchers on a scale of 1 (low) to 10 (high): **9**

Report 2

1. General

Placement Location: **ETH Zürich**

Arrival and Departure Dates: **30th June – 24th August**

No. of working days spent at Institution: **40**

2. Financial

Cost and method of return travel from the UK (£): **Flight £218.98 (Easyjet)**

Total cost of daily travel to and from Institution (£): **£0 (roughly a 30 minute walk)**

Total cost of accommodation (say if provided free): **CHF 1060, £720**

Value of Armourers & Brasiers/Alcan bursary: **£800**

Total received from College : **£112.50**

Total received from Institution (£) : **CHF 1100 (roughly £750)**

3. Accommodation

Accommodation address : **Meierwiesenstrasse 62, 8064 Zürich**

Type of Accommodation : **Block of about 160 student flats, with shared kitchen and bathrooms mostly used by international students so main language is English**

Distance from Institution : **About half an hour's walk (or 20 minutes by bus)**

Quality of accommodation on a scale of 1 (low) to 10 (high): **8**

Quality of facilities on a scale of 1 (low) to 10 (high): **7 (shared kitchen can get very busy and messy at weekends)**

Convenience of location on a scale of 1 (low) to 10 (high): **10**

4. Research Project

Title of Research Project: **The effect of grain structure on the electrical and mechanical behaviour of Al-Li metallic films on a polyamide substrate under uniaxial tension**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Tensile testing, SEM, Van der Pauw resistivity measurements**

Interest level of project on a scale of 1 (low) to 10 (high): **7**

Quality of support provided on a scale of 1 (low) to 10 (high): **10**

Interaction with other researchers on a scale of 1 (low) to 10 (high): **8**

Report 3

1. General

Placement Location: **ETH Zurich, Switzerland**

Arrival and Departure Dates: **13th July to 6th September**

No. of working days spent at Institution: **40**

2. Financial

Cost and method of return travel from the UK (£): **Flights: £250**

Total cost of daily travel to and from Institution (£): **City travel card: £70**

Total cost of accommodation (say if provided free): **2 months in student accommodation: £726
1 week in hostel (due to my dates): £280**

Value of Armourers & Brasiers/Alcan bursary: **£800**

Total received from College: **£0**

Total received from Institution (£): **£750**

3. Accommodation

Accommodation address: **Meierwiesenstrasse 62, 8064 Zürich, Switzerland**

Type of Accommodation: **student housing**

Distance from Institution: **2.5km or 20 minutes by bus**

Quality of accommodation on a scale of 1 (low) to 10 (high): **8**

Quality of facilities on a scale of 1 (low) to 10 (high): **6**

Convenience of location on a scale of 1 (low) to 10 (high): **8**

4. Research Project

Title of Research Project: **Using Hall Effect Measurements to Determine the Charge Carrier Type in a Typical Rare Earth Hexagonal Manganite**

Written Report submitted to host institution: **Yes, 3000 words**

Experimental Techniques used: **Hall effect**

Interest level of project on a scale of 1 (low) to 10 (high): **8**

Quality of support provided on a scale of 1 (low) to 10 (high): **7**

Interaction with other researchers on a scale of 1 (low) to 10 (high): **7**

EPFL, Lausanne, Switzerland

Report 1

1. General

Placement Location: **EPF Lausanne**

Arrival and Departure Dates: **01.07.13 – 24.08.13**

No. of working days spent at Institution: **37**

2. Financial

Cost and method of return travel from the UK (£): **Bus and Train: £180 total return from London**

Total cost of daily travel to and from Institution (£): **Free – 10 minute walk**

Total cost of accommodation (say if provided free): **Provided free**

Value of Armourers & Brasiers/Alcan bursary: **£600**

Total received from College: **£750**

Total received from Institution (£): **300CHF = £214**

3. Accommodation

Accommodation address: **Chemin des Triaudes-7, Ecublens – 1024, Lausanne, Suisse**

Type of Accommodation: **Flat shared between four (mixed) occupants**

Distance from Institution: **1km (10 minute walk)**

Quality of accommodation on a scale of 1 (low) to 10 (high): **7**

Quality of facilities on a scale of 1 (low) to 10 (high): **7**

Convenience of location on a scale of 1 (low) to 10 (high): **9**

4. Research Project

Title of Research Project: **Formation, extraction and testing of silicon particles in aluminium silicon alloys**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Casting, heat treating, metallographic sample preparation, SEM, etching, compression testing**

Interest level of project on a scale of 1 (low) to 10 (high): **8**

Quality of support provided on a scale of 1 (low) to 10 (high): **9**

Interaction with other researchers on a scale of 1 (low) to 10 (high): **9**

Report 2

1. General

Placement Location: **EPF Lausanne**

Arrival and Departure Dates: **29th June – 1st September**

No. of working days spent at Institution: **40**

2. Financial

Cost and method of return travel from the UK (£): **Flights £400**

Total cost of daily travel to and from Institution (£): **Monthly travel pass £34**

Total cost of accommodation (say if provided free): **Provided free**

Value of Armourers & Brasiers/Alcan bursary: **£600**

Total received from College: **£360**

Total received from Institution (£): **£480**

3. Accommodation

Accommodation address: **2 Chemin d'Eterpy, 1020 Renens, Vaud, Switzerland**

Type of Accommodation: **Studio**
Distance from Institution: **6 km**
Quality of accommodation on a scale of 1 (low) to 10 (high): **8**
Quality of facilities on a scale of 1 (low) to 10 (high): **6**
Convenience of location on a scale of 1 (low) to 10 (high): **4**

4. Research Project

Title of Research Project: **Monolayer Protected Gold Nanoparticles: Interaction and Assembly**
Written Report submitted to host institution : **Yes**
Experimental Techniques used: **Wet chemistry techniques, SEM, Langmuir-Blodgett/Langmuir-Schaeffer, plasma etching**
Interest level of project on a scale of 1 (low) to 10 (high): **8**
Quality of support provided on a scale of 1 (low) to 10 (high): **10**
Interaction with other researchers on a scale of 1 (low) to 10 (high): **7**

EMPA, Thun, Switzerland

1. General

Placement Location: **EMPA Thun, Switzerland**
Arrival and Departure Dates: **5/7/13 – 7/9/13**
No. of working days spent at Institution: **10 weeks, 7.5 days holiday**

2. Financial

Cost and method of return travel from the UK (£): **Outward: Easyjet plane to Zurich (approx. £100) and train to Thun (£40), Return: Private plane from Thun airfield**
Total cost of daily travel to and from Institution (£): **£40 total for hiring a bicycle**
Total cost of accommodation (say if provided free): **£825**
Value of Armourers & Brasiers/Alcan bursary: **£0**
Total received from College: **£0**
Total received from Institution (£): **Approx. £2000 (net. after insurance/tax etc)**

3. Accommodation

Accommodation address: **17b Buchholzstrasse, 3604 Thun**
Type of Accommodation: **Room in a family home, self catering in the shared kitchen.**
Distance from Institution: **10 minute cycle**
Quality of accommodation on a scale of 1 (low) to 10 (high): **9**
Quality of facilities on a scale of 1 (low) to 10 (high): **9**
Convenience of location on a scale of 1 (low) to 10 (high): **7**

4. Research Project

Title of Research Project: **Atomic Layer Deposition of Titanium Dioxide on Multiwall Carbon Nanotubes**
Written Report submitted to host institution: **Yes**
Experimental Techniques used: **Atomic layer deposition plus various analytical techniques**
Interest level of project on a scale of 1 (low) to 10 (high): **8**
Quality of support provided on a scale of 1 (low) to 10 (high): **8**
Interaction with other researchers on a scale of 1 (low) to 10 (high): **9**

PSI, Villigen, Switzerland

1. General

Placement Location: **Paul Scherrer Institute, Switzerland**

Arrival and Departure Dates: **16/07/13 – 21/09/13**

No. of working days spent at Institution: **48**

2. Financial

Cost and method of return travel from the UK (£): **Flights from Birmingham (£270 return, available from London for £150 return, both SwissAir)**

Total cost of daily travel to and from Institution (£): **Free (walk)**

Total cost of accommodation (say if provided free): **CHF 20**

Value of Armourers & Brasiers/Alcan bursary: **£0**

Total received from College: **£0**

Total received from Institution (£): **~£3220 for the length of the placement, post tax**

3. Accommodation

Accommodation address: **Guesthouse, Paul Scherrer Institute, Villigen, Switzerland.**

Type of Accommodation: **Shared room (was initially a single room, then moved to a twin room)**

Distance from Institution: **On site**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **6**

Quality of facilities: on a scale of 1 (low) to 10 (high): **7**

Convenience of location: on a scale of 1 (low) to 10 (high): **6**

4. Research Project

Title of Research Project: **Digital Image correlation for uniaxial and biaxial tests**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Digital image correlation, uni - and biaxial test rigs.**

Interest level of project: on a scale of 1 (low) to 10 (high): **7**

Quality of support provided: on a scale of 1 (low) to 10 (high): **7**

Interaction with other researchers: on a scale of 1 (low) to 10 (high): **7**

University of Erlangen, Germany

Report 1

1. General

Placement Location: **Erlangen, Germany**

Arrival and Departure Dates: **8th July-30th August**

No. of working days spent at Institution: **38**

2. Financial

Cost and method of return travel from the UK (£): **£427, aeroplane and train**

Total cost of daily travel to and from Institution (£): **£20 bike hire for my entire stay**

Total cost of accommodation (say if provided free): **Provided free by the institution**

Value of Armourers & Brasiers/Alcan bursary: **£ 710**

Total received from College: **£ 150 (towards flights)**

Total received from Institution (£): **£ 0**

3. Accommodation

Accommodation address: **Hallerstraße 17, 91054 Buckenhof, Germany**

Type of Accommodation: **A residential house**

Distance from Institution: **3.4km**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **8**

Quality of facilities: on a scale of 1 (low) to 10 (high): **6**

Convenience of location: on a scale of 1 (low) to 10 (high): **6**

4. Research Project

Title of Research Project: **Curvature Measurement on a Thermally Cycled NiAl Bond Coat for Turbine Applications for Residual Stress Measurement**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Thermomechanical analysis, finite element analysis, EDX measurements, microscopy work, grinding, polishing**

Interest level of project: on a scale of 1 (low) to 10(high): **10**

Quality of support provided: on a scale of 1 (low) to 10 (high): **10**

Interaction with other researchers: on a scale of 1 (low) to 10 (high): **9**

Report 2

1. General

Placement Location: **Erlangen, Germany**

Arrival and Departure Dates: **20th July - 14th September 2013**

No. of working days spent at Institution: **40, including 5 at a conference**

2. Financial

Cost and method of return travel from the UK (£): **Return Flights, Manchester to Frankfurt: £235
Return Trains, Frankfurt to Erlangen: ~£48.50 (€58)**

Total cost of daily travel to and from Institution (£): **£0, bicycle provided**

Total cost of accommodation (say if provided free): **Provided free by the university**

Value of Armourers & Brasiers/Alcan bursary: **£710**

Total received from College: **£200**

Total received from Institution (£): **£0**

3. Accommodation

Accommodation address: **Hallerstraße 17, Buckenhof, Erlangen**

Type of Accommodation: **Room in a shared house**

Distance from Institution: **3 km**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **8**

Quality of facilities: on a scale of 1 (low) to 10 (high): **6**

Convenience of location: on a scale of 1 (low) to 10 (high): **9**

4. Research Project

Title of Research Project: **Fracture Investigation into the Initiation of Precipitation of Topologically Close Packed phases in Nickel Based Superalloys**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Using Furnace, Mounting, Grinding, Polishing, Etching, Light Microscopy, SEM, FIB Tomography. Software: ImageJ, Avizo Fire, Origin, MATLAB**

Interest level of project: on a scale of 1 (low) to 10(high): **10**

Quality of support provided : on a scale of 1 (low) to 10 (high): **10**

Interaction with other researchers: on a scale of 1 (low) to 10 (high): **8**

University of Goettingen, Germany

Report 1

1. General

Placement Location: **Goettingen, Germany**

Arrival and Departure Dates: **1 Aug - 30 Sept**

No. of working days spent at Institution: **41, of which 5 at institute seminar**

2. Financial

Cost and method of return travel from the UK (£): **each way: £114, train and Ryanair (Dusseldorf Weeze- Stansted)**

Total cost of daily travel to and from Institution (£): **Free (bicycle)**

Total cost of accommodation (say if provided free): **Free**

Value of Armourers & Brasiers/Alcan bursary: **£700**

Total received from College: **£0**

Total received from Institution (£): **£0**

3. Accommodation

Accommodation address: **Gutenbergstrasse 4a**

Type of Accommodation: **Room in student accommodation, shared kitchen and bathroom**

Distance from Institution: **10 minute cycle**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **8**

Quality of facilities: on a scale of 1 (low) to 10 (high): **8**

Convenience of location: on a scale of 1 (low) to 10 (high): **9**

4. Research Project

Title of Research Project: **Temperature Curves from ultrafast heating of metallic glasses**

Written Report submitted to host institution: **15minute presentation given to combined groups**

Experimental Techniques used: **rapid capacitive heating, Differential Scanning Calorimetry, XRay Diffractometer, glass polishing to 40nm suspension suitable for AFM, SEM, AFM**

Interest level of project: on a scale of 1 (low) to 10(high): **9**

Quality of support provided: on a scale of 1 (low) to 10 (high): **9**

Interaction with other researchers: on a scale of 1 (low) to 10 (high): **7**

Report 2

None submitted.

TUHH, Hamburg, Germany

Report 1

1. General

Placement Location: **TUHH, Hamburg, Germany**

Arrival and Departure Dates: **1st July –23rd August**

No. of working days spent at Institution: **37**

2. Financial

Cost and method of return travel from the UK(£): **Air (Easyjet), £104, London Luton to Hamburg Airport**

Total cost of daily travel to and from Institution(£): **Walked (5 min), free**
Total cost of accommodation (say if provided free): **€612.5, €600 provided by the institute**
Value of Armourers & Brasiers/Alcan bursary: **£740**
Total received from College: **£300**
Total received from Institution (£): **€600 for accommodation**

3. Accommodation

Accommodation address: **Northern Institute of Technology Management, Kasernenstrasse 12, D-21073 Hamburg**
Type of Accommodation: **Ensuite room, with a mini-kitchen (also a common kitchen in corridor)**
Distance from Institution: **300m**
Quality of accommodation: on a scale of 1 (low) to 10 (high): **10**
Quality of facilities: on a scale of 1 (low) to 10 (high): **10**
Convenience of location: on a scale of 1 (low) to 10 (high): **10**

4. Research Project

Title of Research Project: **PVB Coating of Platelet-Shaped Alumina Particles**
Written Report submitted to host institution: **Yes**
Experimental Techniques used: **Titration, Centrifugation, TGA, SEM**
Interest level of project: on a scale of 1 (low) to 10 (high): **10**
Quality of support provided: on a scale of 1 (low) to 10 (high): **10**
Interaction with other researchers: on a scale of 1 (low) to 10 (high): **9**

Report 2

1. General

Address: **TUHH, Hamburg-Harburg, Germany**
Arrival and Departure Dates: **01/07/13-30/09/13**
No. of working days spent at the Institution: **40**

2. Financial

Cost and method of return travel from the UK (£): **Flights (£184)**
Total cost of daily travel to and from Institution (£): **£0**
Total cost of accommodation (say if provided free): **free**
Value of Armourers & Brasiers/Alcan bursary: **£700**
Total received from College: **£0**
Total received from Institution (£): **£0**

3. Accommodation

Accommodation address: **55 Hoppenstedstraße**
Type of Accommodation: **2 rooms in a house, total 3 occupants**
Distance from Institution (km): **1.3km according to google (10min walk in practice)**
Quality of accommodation: on scale of 1 (low) to 10 (high): **10**
Quality of facilities/social environment: on scale of 1 (low) to 10 (high): **10**
Convenience of location: on scale of 1 (low) to 10 (high): **10**

4. Research project

Title of Research Project: **Electrical and thermal conductivity of carbon nanotube-epoxy composites**
Written Report submitted to Institute? **Yes**
Experimental Techniques used: **sample preparation (epoxy preparation, degassing, curing) DSC, TGA, impedance analysis (electrical conductivity measurement)**
Interest level of project: on scale of 1 (low) to 10 (high): **7**
Quality of support provided: on scale of 1 (low) to 10 (high): **10**
Interaction with other researchers: on scale of 1 (low) to 10 (high): **10**

MagIC, HZG-Geesthacht, Germany

1. General

Placement Location: **HZG, Geesthacht, Germany**

Arrival and Departure Dates: **01 August 2013 – 01 October 2013**

No. of working days spent at Institution: **42**

2. Financial

Cost and method of return travel from the UK (£): **Easyjet Flight Tickets £176** (Due to a visa uncertainty issues I paid an extra ~£70 to change flight dates)**

Total cost of daily travel to and from Institution (£): **£0**

Total cost of accommodation (say if provided free): **€ 216**

Value of Armourers & Brasiers/Alcan bursary: **£400**

Total received from College: **£0**

Total received from Institution (£): **€650**

3. Accommodation

Accommodation address: **Otto-Hahn Straße 1, Geesthacht 21502, Deutschland**

Type of Accommodation: **Non-ensuite fully furnished room at the HZG's Guesthouse.**

Distance from Institution: **7 minute walk**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **8**

Quality of facilities: on a scale of 1 (low) to 10 (high): **8**

Convenience of location: on a scale of 1 (low) to 10 (high): **7 (practically next to institute – 10, centre of town about 5km away with buses coming in once every hour – 4)**

4. Research Project

Title of Research Project: **In-situ synchrotron diffraction of the solidification of Mg-RE alloys.**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Synchrotron Diffraction, Scanning Electron Microscopy**

Interest level of project: on a scale of 1 (low) to 10 (high): **8**

Quality of support provided: on a scale of 1 (low) to 10 (high): **10**

Interaction with other researchers: on a scale of 1 (low) to 10 (high): **10**

Rolls-Royce Deutschland, Germany

1. General

Placement Location: **Rolls-Royce Deutschland, Dahlewitz, nr. Berlin, Germany**

Arrival and Departure Dates: **5.7.13 to 15.9.13**

No. of working days spent at Institution: **50**

2. Financial

Cost and method of return travel from the UK (£): **£171 by plane**

Total cost of daily travel to and from Institution (£): **Free (I rode a bike borrowed from the couple I lived with).**

Total cost of accommodation (say if provided free): **£756**

Value of Armourers & Brasiers/Alcan bursary: **£100**

Total received from College: **£300**

Total received from Institution (£): **£1680**

3. Accommodation

Accommodation address: **4a, Waldhohe, Rangsdorf, 15834**

Type of Accommodation: **Apartment with private kitchen and bathroom**

Distance from Institution: **1.5 miles**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **10**

Quality of facilities: on a scale of 1 (low) to 10 (high): **10**

Convenience of location: on a scale of 1 (low) to 10 (high): **10 for institution (6 for travelling into Berlin)**

4. Research project

Title of Research Project: **An Investigation into the Multi-axial Fatigue of a Nickel-based Superalloy.**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **Finite Element Analysis**

Interest level of project: on scale of 1 (low) to 10 (high): **9**

Quality of support provided: on scale of 1 (low) to 10 (high): **9**

Interaction with other researchers: on scale of 1 (low) to 10 (high): **9**

Linde AG, Germany

1. General

Placement Location: **Linde AG, Unterschleissheim, near Munich, Germany**

Arrival and Departure Dates: **01.07.2013-07.09.2013**

No. of working days spent at Institution: **49**

2. Financial

Cost and method of return travel from the UK (£): **£280 return flight**

Total cost of daily travel to and from Institution (£): **£169 (€200 total, €80 a month)**

Total cost of accommodation (say if provided free): **£777 (€910, living in several locations)**

Value of Armourers & Brasiers/Alcan bursary: **£350**

Total received from College: **£100**

Total received from Institution (£): **£1480 (€1750)**

3. Accommodation

Accommodation address: **Agnesstr. 33, Munich**

Type of Accommodation: **student accommodation**

Distance from Institution: **45 min by public transport**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **7**

Quality of facilities: on a scale of 1 (low) to 10 (high): **8**

Convenience of location: on a scale of 1 (low) to 10 (high): **8**

4. Research project

Title of Research Project: **Porous surface on metals**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **Heat treatment, SEM, optical microscopy**

Interest level of project: on scale of 1 (low) to 10 (high): **7**

Quality of support provided: on scale of 1 (low) to 10 (high): **7**

Interaction with other researchers: on scale of 1 (low) to 10 (high): **7**

ESI, Leoben, Austria

1. General

Placement Location: **ESI, Leoben**

Arrival and Departure Dates: **8th June – 5th September**

No. of working days spent at Institution: **40**

2. Financial

Cost and method of return travel from the UK (£):**£325 (Coach, plane and train)**

Total cost of daily travel to and from Institution (£): **£0**

Total cost of accommodation (say if provided free): **€622 (about £526)**

Value of Armourers & Brasiers/Alcan bursary: **Nil**

Total received from College: **Nil**

Total received from Institution (£): **£2087.54**

3. Accommodation

Accommodation address: **15 Gösserstrasse, Leoben**

Type of Accommodation: **student accommodation**

Distance from Institution: **1 km**

Quality of accommodation: on a scale of 1 (low) to 10 (high): **5**

Quality of facilities: on a scale of 1 (low) to 10 (high): **5**

Convenience of location: on a scale of 1 (low) to 10 (high): **10**

4. Research Project

Title of Research Project: **Investigation into the Adhesive Strength of Printed Circuit Boards**

Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Four point bending, Scanning electron microscopy, Atomic force microscopy, Tensile testing**

Interest level of project: on a scale of 1 (low) to 10(high): **8**

Quality of support provided: on a scale of 1 (low) to 10 (high): **10**

Interaction with other researchers: on a scale of 1 (low) to 10 (high): **5**

TU Wien, Austria

No students sent to TU Wien this year.