

European Vacation Placements: Reports 2015

Below are reports on the Summer Placements provided by students who participated in the scheme in 2015.

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ETH, Zurich, Switzerland

Report 1

1. General

Placement Location: **ETH Zürich, Switzerland**

Arrival and Departure Dates: **3rd July - 31 September**

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

2. Financial

Cost and method of return travel from the UK (£): **£180 (Flights to/from Manchester)**

Total cost of daily travel to and from Institution (£): **61 CHF (£40) per month (monthly travel pass)**

Total cost of accommodation (say if provided free): **CHF 800 for two months (£520)**

Value of Armourers & Brasiers/Alcan bursary: **£1040**

Total received from College: **£250**

Total received from Institution (£): **1100 CHF (£720)**

3. Accommodation

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

Type of Accommodation: **Student Dorm (shared kitchen and bathrooms)**

Distance from Institution: **2.1 km (15mins by bus + walking)**

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): **5**

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

4. Research Project

Title of Research Project: **Hydrogels and Polymer Brushes**

Written Report submitted to host institution: **Yes, presentation and written report.**

Experimental Techniques used: **AFM, UV-Vis spectroscopy, hydrogel synthesis**

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): **9**

Report 2

1. General

Placement Location: **ETH Zürich, Switzerland**

Arrival and Departure Dates: **03/07-30/08/2015**

No. of working days spent at Institution: **56**

2. Financial

Cost and method of return travel from the UK (£): **Plane - £163**

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

Total cost of accommodation (say if provided free): **900 CHF**

Value of Armourers & Brasiers/Alcan bursary: **£1040**

Total received from College: **£450**

Total received from Institution (£): **1100 CHF (£720)**

3. Accommodation

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

Type of Accommodation: **Student accommodation**

Distance from Institution: **5.5 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): **7**

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

4. Research Project

Title of Research Project: **Possible alternatives for the inorganic phase in p[VBTMA][PF6]/inorganic composite chemo-resistive CO2 sensors**

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

Experimental Techniques used: **SEM, Powder XRD, UV/vis spectroscopy, electrochemical impedance spectroscopy (EIS)**

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): **4**

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

Report 3

1. General

Placement Location: **ETH Zürich, Switzerland**

Arrival and Departure Dates: **2015-07-06 to 2015-09-04**

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

2. Financial

Cost and method of return travel from the UK (£): **£141, Flying**

Total cost of daily travel to and from Institution (£): **£81**

Total cost of accommodation (say if provided free): **£569**

Value of Armourers & Brasiers/Alcan bursary: **£1040**

Total received from College: **£400**

Total received from Institution (£): **£765**

3. Accommodation

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

Type of Accommodation: **Student accommodation**

Distance from Institution: **2 km; 20 minutes by bus**

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): **3**

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

4. Research Project

Title of Research Project: **IBAD Cu-Cr thin films**

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

Experimental Techniques used: **Tensile testing, four point resistance, nanoindentation, optical microscopy, SEM, reflectance anisotropy spectroscopy (RAS)**

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**

EPFL, Lausanne, Switzerland

Report 1

1. General

Placement Location: **EPF Lausanne**

Arrival and Departure Dates: **24th June – 14th August**

No. of working days spent at Institution: **36**

2. Financial

Cost and method of return travel from the UK (£): **Easyjet flights - £215**

Total cost of daily travel to and from Institution (£): **£0 – borrowed a bike for free from lab, and it would have been walkable. I also received a free transport pass for the entire Lausanne area (bus and metro) from my accommodation.**

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

Value of Armourers & Brasiers/Alcan bursary: **£675**

Total received from College: **£100**

Total received from Institution (£): **£187**

3. Accommodation

Accommodation address: **97 Route Cantonale, 1025 Saint-Sulpice, Lausanne, Switzerland**

Type of Accommodation: **Studio apartment**

Distance from Institution: **5 minutes by bike, 15-20 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**

4. Research Project

Title of Research Project: **Investigating the fracture properties of silicon particles extracted from aluminium silicon alloys by nanoindentation and 'Nutcracking'**

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

Experimental Techniques used: **Optical microscopy, SEM, Nanoindentation, using 'Nutcracker' machine, tensile tests, measuring porosity, heat treatments, casting**

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): **8**

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

Report 2

1. General

Placement Location: **EPF Lausanne**

Arrival and Departure Dates: **20/07/15 to 07/09/15**

No. of working days spent at Institution: **35**

2. Financial

Cost and method of return travel from the UK (£): **Trains then flights £250**

Total cost of daily travel to and from Institution (£): **£70 (£8.44 for day return, but cycled for most)**

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

Value of Armourers & Brasiers/Alcan bursary: **£475**

Total received from College: **£300**

Total received from Institution (£): **£400**

3. Accommodation

Accommodation address: **99A 1025 St.-Sulpice**

Type of Accommodation: **Studio apartment**

Distance from Institution: **1 mile**

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**

4. Research Project

Title of Research Project: **Electric properties of Ag44 Crystals**

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

Experimental Techniques used: **Using micromanipulators/probe stations. Visible spectroscopy.**

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**

EMPA, Thun, Switzerland

1. General

Placement Location: **EMPA Thun, Switzerland**

Arrival and Departure Dates: **29.06.15 – 02.08.15**

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

2. Financial

Cost and method of return travel from the UK (£): **Plane and train. Flights: £110 easyjet Manchester/Basel return. Trains: £72 Basel/Thun return.**

Total cost of daily travel to and from Institution (£): **£0 (Bike at EMPA I could use)**

Total cost of accommodation (say if provided free): **£729 (CHF 550)**

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

Total received from College: **£0**

Total received from Institution (£): **£2253 gross (CHF 3400)**

3. Accommodation

Accommodation address: **3 Bellevuestrasse, Thun 3600, Switzerland**

Type of Accommodation: **Flat (2 people)**

Distance from Institution: **15 mins by bike**

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**

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

4. Research Project

Title of Research Project: **Investigating the adhesion of thin diamond films using nanoindentation**

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

Experimental Techniques used: **Atomic Nanoindentation, SEM, AFM**

Interest level of project on a scale of 1 (low) to 10 (high): **5**

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): **8**

PSI, Villigen, Switzerland

1. General

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

Arrival and Departure Dates: **Arrived 4/7/15. Departed 12/9/15**

No. of working days spent at Institution: **44 days plus 5 days of allocated vacation**

2. Financial

Cost and method of return travel from the UK (£): **£125 including outgoing and return flights from Stansted to Basel**

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

Total cost of accommodation (say if provided free): **20 CHF (~£13) per night**

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

Total received from College: **£0**

Total received from Institution (£): **Monthly salary of 2100 CHF (~£1400) before tax**

3. Accommodation

Accommodation address: **WGHA, Paul Scherrer Institute, 5232 Villigen.**

Type of Accommodation: **Double room in a guesthouse**

Distance from Institution: **Few hundred metres**

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): **8**

Convenience of location: on a scale of 1 (low) to 10 (high): **7 (quite far from shops etc)**

4. Research Project

Title of Research Project: **The Use of Digital Image Correlation for Measuring Micro & Macroscopic Strains During Biaxial Tension Tests**

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

Experimental Techniques used: **Biaxial testing, DIC analysis, uniaxial tensile testing, MATLAB**

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**

University of Erlangen, Germany

Report 1

1. General

Placement Location: **Erlangen, Germany**

Arrival and Departure Dates: **6/7/15 – 28/8/15**

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

2. Financial

Cost and method of return travel from the UK (£): **£115 / Plane to Nuremberg, Train to Erlangen**

Total cost of daily travel to and from Institution (£): **£0 if walk (45mins each way) or £3.10 if bus**

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

Value of Armourers & Brasiers/Alcan bursary: **£ 770**

Total received from College: **£ 466**

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

3. Accommodation

Accommodation address: **Bayreuther Strasse 1, Erlangen**

Type of Accommodation: **Room in shared apartment**

Distance from Institution: **4.2 km**

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): **8**

4. Research Project

Title of Research Project: **The Influence Of γ Precipitates Within the γ' Phase On The Mechanical Properties Of A Ni-Al-Ti Superalloy**

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

Experimental Techniques used: **Sample preparation using grinding and polishing machines, Heat treatments, Compression tests at room temperature and at 1023 K, Observation of use of FIB SEM Observation of use of Nanoindenter, Image analyses using Fiji and ImageC software**

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**

Report 2

1. General

Placement Location: **Erlangen, Germany**

Arrival and Departure Dates: **Arrival 19.07.2015. Departure 20.09.2015**

No. of working days spent at Institution: **45**

2. Financial

Cost and method of return travel from the UK (£): **Flights between London Stansted and Nuremburg. Total cost of flights £183.98.**

Total cost of daily travel to and from Institution (£): **Free, using bicycle provided by institution.**

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

Value of Armourers & Brasiers/Alcan bursary: **£770**

Total received from College: **£400**

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

3. Accommodation

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

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

Distance from Institution: **3.2 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): **7**

Convenience of location: on a scale of 1 (low) to 10 (high): **5**

4. Research Project

Title of Research Project: **Reprecipitation of η/δ phase in the weld line of friction welded A718Plus**

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

Experimental Techniques used: **Cutting specimens, furnace operation, mounting, grinding and polishing of metal specimens, SEM, and microhardness testing.**

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): **8**

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

University of Goettingen, Germany

Report 1

1. General

Placement Location: **Goettingen, Germany**

Arrival and Departure Dates: **1st August - 26th September**

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

2. Financial

Cost and method of return travel from the UK (£): **Flight, £194 and Train, £33**

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: **£770**

Total received from College: **£150**

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

3. Accommodation

Accommodation address: **Humboldtallee 14 37073 Göttingen, Germany**

Type of Accommodation: **student house**

Distance from Institution: **2 km**

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): **8**

4. Research Project

Title of Research Project: **Measuring avalanches in metallic glasses, and the dependence of the shear transform zone's cooperativity on the normalized stress and composition**

Written Report submitted to host institution: **Slides presented at the institution seminar**

Experimental Techniques used: **Differential scanning calorimetry, Dynamic mechanical analysis, X-Ray Diffraction**

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): **10**

TUHH, Hamburg, Germany

Report 1

1. General

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

Arrival and Departure Dates: **1st July-31st August**

No. of working days spent at the Institution: **43**

2. Financial

Cost and method of return travel from the UK (£): **Plane, £170**

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

Total cost of accommodation (say if provided free): **650 Euros**

Value of Armourers & Brasiers/Alcan bursary: **£715**

Total received from College: **£250**

Total received from Institution (£): **600 Euros**

3. Accommodation

Accommodation address: **NIT, Kasernenstrasse 12, D-21073 Hamburg**

Type of Accommodation: **Student apartment**

Distance from Institution (km): **5 minute walk**

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

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: **The Effect of Particle Interactions on the Structure of YSZ/PS films**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **Optical microscopy, Plasma cleaner, Deposition via drop-casting, SEM, Ultra-sonication, Mathematica**

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): **6**

Report 2

1. General

Address: **TUHH, Hamburg-Harburg, Germany**

Arrival and Departure Dates: **02/08 – 30/09/2014**

No. of working days spent at the Institution: **41**

2. Financial

Cost and method of return travel from the UK (£): **Visited family in Denmark, so flight to Copenhagen £98, train from Copenhagen to Hamburg £30, flight back from Hamburg Airport to London Heathrow £58, TOTAL : £186**

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

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

Value of Armourers & Brasiers/Alcan bursary: **£770**

Total received from College: **£500**

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

3. Accommodation

Accommodation address: **Apartment nr 5, Ruststr. 8, 21073 Hamburg, GERMANY**

Type of Accommodation: **Private flat**

Distance from Institution (km): **14 minute walk**

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): **9**

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

4. Research project

Title of Research Project: **Thermal and electrical conductivity of epoxy composites with three different carbon aerogel fillers**

Written Report submitted to Institute? **Yes, plus presentation**

Experimental Techniques used: **CVD, SEM, laser flash analysis, TGA, epoxy preparation and vacuum infiltration, electrical resistance measurements**

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): **9**

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

MagIC, HZG-Geesthacht, Germany

1. General

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

Arrival and Departure Dates: **01/07/2015 – 29/07/2015 & 01/09/2015 – 29/09/2015**

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

2. Financial

Cost and method of return travel from the UK (£): **£187 for two return flights (London – Hamburg)**

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

Total cost of accommodation (say if provided free): **€446/ca. £320 (€223/ca. £160 per month)**

Value of Armourers & Brasiers/Alcan bursary: **£450**

Total received from College: **£100**

Total received from Institution (£): **€1200/ca. £850 (€600/ca. £425 per month)**

3. Accommodation

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

Type of Accommodation **Furnished room in a guesthouse of approx. 20 other students; shared, fully-equipped kitchen and bathroom**

Distance from Institution: **5-10 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): **6 – close to HZG; one nearby supermarket (1 mile away); relatively infrequent but punctual buses to Geesthacht (15 minutes journey); a bus and a train away from Hamburg city centre (1 hour journey)**

4. Research Project

Title of Research Project: **In situ investigation of the solidification of Mg-rare earth alloys with synchrotron radiation**

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): **4**

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): **4**

Rolls-Royce Deutschland, Germany

1. General

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

Arrival and Departure Dates: **3/7/15 – 12/9/15**

No. of working days spent at Institution: **70**

2. Financial

Cost and method of return travel from the UK (£): **Flight- £170**

Total cost of daily travel to and from Institution (£): **£200**

Total cost of accommodation (say if provided free): **1200**

Value of Armourers & Brasiers/Alcan bursary: **£650**

Total received from College: **nil**

Total received from Institution (£): **£600**

3. Accommodation

Accommodation address: **33 Glogauer Strasse**

Type of Accommodation: **Apartment**

Distance from Institution: **30 km**

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): **5**

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

4. Research project

Title of Research Project: **HYDROFLEX Evaluation of Lifting Correlations for Biaxial Fatigue of Allvac 718Plus**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **Finite Element Analysis**

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

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: **19/06/15 – 02/09/15**

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

2. Financial

Cost and method of return travel from the UK (£): **About 200, by air**

Total cost of daily travel to and from Institution (£): **£180**

Total cost of accommodation (say if provided free): **2000**

Value of Armourers & Brasiers/Alcan bursary: **£420**

Total received from College: **£400**

Total received from Institution (£): **1280**

3. Accommodation

Accommodation address: **Rm. 213, Franziskaner Str. 16, 81667, Munich, Germany**

Type of Accommodation: **Single room apartment**

Distance from Institution: **31 km**

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): **9**

4. Research project

Title of Research Project: **HYDROFLEX probe - O2 measurement for very dry atmospheres**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **N/A**

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): **8**

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

Max-Planck Institut für Eisenforschung, Düsseldorf, Germany

Report 1

1. General

Placement Location: **MPIE, Düsseldorf, Germany**

Arrival and Departure Dates: **28th June and 31st August**

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

2. Financial

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

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

Total cost of accommodation (say if provided free): **£800**

Value of Armourers & Brasiers/Alcan bursary: **£ 130**

Total received from College: **£300**

Total received from Institution (£): **£1000**

3. Accommodation

Accommodation address: **10A Wielandstrasse**

Type of Accommodation: **Shared flat**

Distance from Institution: **30 min walk**

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): **3**

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

4. Research Project

Title of Research Project: **Observing grain boundaries as dislocation sources**

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

Experimental Techniques used: **Electropolishing, TEM sample preparation, EBSD scans**

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): **9**

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

Report 2

1. General

Placement Location: **MPIE, Düsseldorf, Germany**

Arrival and Departure Dates: **10/07 – 28/08**

No. of working days spent at Institution: **36**

2. Financial

Cost and method of return travel from the UK (£): **Aeroplane - £151**

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

Total cost of accommodation (say if provided free): **€880**

Value of Armourers & Brasiers/Alcan bursary: **£130**

Total received from College: **£0**

Total received from Institution (£): **€1600**

3. Accommodation

Accommodation address: **58 Lindemannstraße, Düsseldorf**

Type of Accommodation: **Flat share**

Distance from Institution: **750 m**

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): **8**

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

4. Research Project

Title of Research Project: **Failure of Thin Films during Scratching**

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

Experimental Techniques used: **SEM, AFM, Nano-indentation, Optical microscopy, EDX**

Interest level of project: on a scale of 1 (low) to 10(high): **6**

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**

ESI, Leoben, Austria

Report 1

1. General

Placement Location: **ESI, Leoben**

Arrival and Departure Dates: **18th July- 11th September**

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

2. Financial

Cost and method of return travel from the UK (£):**Outward- Flights from Newcastle to Vienna (BA) via Heathrow. Followed by 3 trains to Leoben, from the airport to main station in Vienna and then to Bruck an der Mur and then Leoben. Better trains were available at other times and days.**

Cost of flight: £214

Cost of trains: €20.50 (with an Austrian railcard, a Vorteils card jungend (€19.50 entitles 50% off) which could be purchased from the UK and a temporary card printed until the actual card was posted. Tickets also available for home printing. Total £29

Return-I didn't return immediately to the UK but went walking for a week in Innsbruck. Returned on a flight from Innsbruck to Gatwick (EasyJet) and a train to Newcastle

Cost of Flight: £92.20

Cost of Train: £34 (with railcard)

Total: £369

Total cost of daily travel to and from Institution (£):**Free (Within walking distance)**

Total cost of accommodation (say if provided free): **€600 (at the time £435)**

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

Total received from College: **£75 towards flights**

Total received from Institution (£): **£973**

3. Accommodation

Accommodation address: **Hauptplatz 21/5, Leoben, Steiermark**

Type of Accommodation: **Flat, shared with another CAMPUS student for first 4 weeks and 2 Austrians. (Same accommodation may not be available again as this was where someone who worked at the institution lived who was in America at the time.)**

Distance from Institution: **10 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): **9**

4. Research Project

Title of Research Project: **Compression tests on ultra-fine grained tungsten (W) to study characteristic deformation mechanisms** Written Report submitted to host institution: **Yes**

Experimental Techniques used: **Metallography preparation, SEM, using a tensometer**

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): **8**

Interaction with other researchers: on a scale of 1 (low) to 10 (high): **6**

Report 2

(Incomplete report provided.)

1. General

Placement Location: **ESI, Leoben**

Arrival and Departure Dates:

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

2. Financial

Cost and method of return travel from the UK (£): **roughly £100 pounds flight to Vienna followed by €30 to travel by train from Vienna to Leoben. 100% recommend student to buy a travel card (Jugend Vorteilschart) which cost me €19.90 and saves half price on tickets – clearly worth it already even if one only travel to Vienna and back, however enables student to travel much more during placement – e.g. Wien, Graz, Judenbourg (Spa!), Villach etc. Can be bought online which the other student did, but I didn't and regretted it.**

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

Total cost of accommodation (say if provided free): **€600**

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

Total received from College:

Total received from Institution (£):

3. Accommodation

Accommodation address: **Hauptplatz 21/5, Leoben, Steiermark**

Type of Accommodation: **Flat, shared with another CAMPUS student for first 4 weeks and 2 Austrians. (Same accommodation may not be available again as this was where someone who worked at the institution lived who was in America at the time.)**

Distance from Institution: **8 minute walk**

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

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

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

4. Research Project

Title of Research Project: **Copper films on silicon wafers**

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

Experimental Techniques used: **SEM**

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

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

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