

# European Vacation Placements: Reports 2012

Below are reports on the Summer Placements provided by students who participated in the scheme in 2012.

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## **ETH, Zurich, Switzerland**

### **Report 1**

#### **1. General**

Placement Location: **ETH Zürich, Switzerland**

Arrival and Departure Dates: **4<sup>th</sup> July, 31<sup>st</sup> August**

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

#### **2. Financial**

Cost and method of return travel from the UK (£): **£119.45**

Total cost of daily travel to and from Institution (£): **£75.24**

Total cost of accommodation (say if provided free): **£699.60**

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

Total received from College: **£1000 for research, language course and travel outside Switzerland.**

Total received from Institution (£): **£792**

#### **3. Accommodation**

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

Type of Accommodation: **WOKO, a student housing company**

Distance from Institution: **20-25 minutes by tram and 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): **8**

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

#### **4. Research Project**

Title of Research Project: **Investigation of localised surface plasmon resonance of Au nanocylinders**

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): **6**

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**

### **Report 2**

#### **1. General**

Placement Location: **ETH Zürich**

Arrival and Departure Dates: **1<sup>st</sup> July – 31<sup>st</sup> August**

No. of working days spent at Institution: **34**

#### **2. Financial**

Cost and method of return travel from the UK (£): **British airways Heathrow-Zürich/Zürich-City, total cost £168.75**

Total cost of daily travel to and from Institution (£): **2 x month travel pass, 57CHF each**

Total cost of accommodation (say if provided free): **£668.46**

Value of Armourers & Brasiers/Alcan bursary: **£660**

Total received from College :-

Total received from Institution (£) : **962.50CHF**

#### **3. Accommodation**

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

Type of Accommodation : **Student halls**  
Distance from Institution : **20 minutes on public transport**  
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): **8**

#### **4. Research Project**

Title of Research Project : **Strain-induced multiferroicity in SrMnO<sub>3</sub>**  
Written Report submitted to host institution :**Yes**  
Experimental Techniques used: **Class 4 laser optical setups and measurements, use of associated software, building components for the 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 3**

#### **1. General**

Placement Location: **ETH Zurich, Switzerland**  
Arrival and Departure Dates: **27th June – 20th August**  
No. of working days spent at Institution: **49**

#### **2. Financial**

Cost and method of return travel from the UK (£): **Swiss International Airlines AG, £180, Birmingham to Zurich**  
Total cost of daily travel to and from Institution (£): **ZVV Zone 10 Monthly Travel Pass, 2 x 57CHF ≈ £75**  
Total cost of accommodation (say if provided free):**2 x 530CHF ≈ £701**  
Value of Armourers & Brasiers/Alcan bursary: **£760**  
Total received from College: **£500 (Travel Grant, req. application)**  
Total received from Institution (£): **970CHF ≈ £640 (for 7 weeks)**

#### **3. Accommodation**

Accommodation address: **Meierwiesenstrasse 62, Room 306, 8064 Zürich, Switzerland**  
Type of Accommodation: **International Student House, small individual rooms, large common room, large shared kitchen & several shared bathrooms**  
Distance from Institution: **2.2km, 25 min walk or 15 min 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**  
Convenience of location on a scale of 1 (low) to 10 (high): **10**

#### **4. Research Project**

Title of Research Project: **Ionic Liquid-Mediated Nanolubrication**  
Written Report submitted to host institution: **Brief technical report outlining methods, problems and results. Presentation of results given at Offsite Group Meeting**  
Experimental Techniques used: **AFM imaging (Veeco Dimension 3000), Liquid cell AFM/LFM (MFP3DTM, Asylum Research), Colloid Gluing & Manipulation, Plasma Cleaning, UV/Ozone Cleaning, solvent washing**  
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): **10**

## **Report 4**

### **1. General**

Placement Location: **ETH Zurich**

Arrival and Departure Dates : **Arrived 1<sup>st</sup> July, departed 27<sup>th</sup> August 2012**

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

### **2. Financial**

Cost and method of return travel from the UK (£): **Swiss airlines return flight: £227.37**

Total cost of daily travel to and from Institution (£): **2 monthly passes: £75.50**

Total cost of accommodation (say if provided free): **2 months' rent: £701.98 (1060 CHF)**

Value of Armourers & Brasiers/Alcan bursary: **£760.00**

Total received from College : **£148.00**

Total received from Institution (£) : **£757.58 (1000 CHF)**

### **3. Accommodation**

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

Type of Accommodation : **Student accommodation block of rooms**

Distance from Institution : **20 minutes on the 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**

Convenience of location on a scale of 1 (low) to 10 (high): **7**

### **4. Research Project**

Title of Research Project : **Electroless deposition of metallic copper on fibres**

Written Report submitted to host institution : **Electroless deposition of metallic copper on fibres**

Experimental Techniques used: **Reflux, XRD measurements, sputtering, taking SEM images, using the centrifuge, using the glove box**

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 5**

### **1. General**

Placement Location: **ETH Zurich, Switzerland**

Arrival and Departure Dates: **01/07/2012 – 25/08/2012**

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

### **2. Financial**

Cost and method of return travel from the UK (£): **Return flight from Luton: £184.98**

Total cost of daily travel to and from Institution (£): **Monthly travel pass (X2): 114 CHF = £75.10**

Total cost of accommodation (say if provided free): **1000 CHF = £658.81**

Value of Armourers & Brasiers/Alcan bursary: **£760**

Total received from College: **£250**

Total received from Institution (£): **1107 CHF = £729.30**

### **3. Accommodation**

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

Type of Accommodation: **Student Hostel/ Halls**

Distance from Institution: **10-15 mins 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 – kitchen got messy on Sunday evenings, only one large kitchen for everyone to use.**

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

#### **4. Research Project**

Title of Research Project: **Strain rate sensitivity & microstructure of thin film Al based alloys on a flexible polymer substrate**

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

Experimental Techniques used: **Tensile testing, SEM, AFM, TEM, Optical microscopy, Sputtering**

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): **10 – had a very good supervisor**

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

### **Report 6**

#### **1. General**

Placement Location: **ETH Zurich, Switzerland**

Arrival and Departure Dates: **1/7/12 – 31/8/12**

No. of working days spent at Institution: **33**

#### **2. Financial**

Cost and method of return travel from the UK (£): **British Airways Flights from/to Heathrow Terminal 5 £236.65**

Total cost of daily travel to and from Institution (£): **I bought two monthly Zone 10 travel passes, which include buses, trains, trams and boats costing £38 each. Both the accommodation and Science City were in zone 10, so this covered the tram and bus to work.**

Total cost of accommodation (say if provided free): **£700**

Value of Armourers & Brasiers/Alcan bursary: **£760**

Total received from College: **none**

Total received from Institution (£): **£690**

#### **3. Accommodation**

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

Type of Accommodation **Student Halls of Residence**

Distance from Institution: **~2km (15 minutes by bus/tram)**

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: **The Impact of Oxygen Content on the Mechanical Properties of Metallic Glass Vit-105**

Written Report submitted to host institution: **The Impact of Oxygen Content on the Mechanical Properties of Metallic Glass Vit-105**

Experimental Techniques used: **Inductive arc melting; mini arc and big arc, tilt casting, suction casting, saw cutting, grinding, polishing, XRD, SEM, oxygen content testing, 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): **4**

## **EMPA, Thun, Switzerland**

### **1. General**

Placement Location: **Thun, Switzerland**

Arrival and Departure Dates: **30th June 2012 - 29th Sept 2012**

No. of working days spent at Institution: **65**

### **2. Financial**

Cost and method of return travel from the UK (£): **203 By flight (Easyjet)**

Total cost of daily travel to and from Institution (£): **≈1.6**

Total cost of accommodation (say if provided free): **≈1160**

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

Total received from College: **0**

Total received from Institution (£) : **≈1060 (After tax)**

### **3. Accommodation**

Accommodation address: **1 Göttibachweg, Thun, Switzerland CH3600**

Type of Accommodation: **Flat**

Distance from Institution: **23 minutes (walking plus taking 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**

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

### **4. Research Project**

Title of Research Project: **Electrochemical Deposition of Aluminum-doped Zinc Oxide Compact Films and Nano-Patterning on Zinc Oxide by Natural Lithography**

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

Experimental Techniques used: **Electrochemical deposition**

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): **7**

## **PSI, Villigen, Switzerland**

### **1. General**

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

Arrival and Departure Dates: **16/7/12 – 28/9/12**

No. of working days spent at Institution: **40 (8 weeks with one week of annual leave)**

### **2. Financial**

Cost and method of return travel from the UK (£): **Flights to and from Zurich - £200**

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

Total cost of accommodation (say if provided free): **£13 a night**

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

Total received from College: **0**

Total received from Institution (£): **£3000 (after local tax deduction)**

### **3. Accommodation**

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

Type of Accommodation: **Shared room with one other person – all the summer students are accommodated in the guest house**

Distance from Institution: **200 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): **9**

Convenience of location: on a scale of 1 (low) to 10 (high): **7**

#### **4. Research Project**

Title of Research Project: **Analysing atomistic simulations on the deformation of nanocrystalline metals**

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

Experimental Techniques used: **N/A**

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): **9**

## **University of Erlangen, Germany**

### **Report 1**

#### **1. General**

Placement Location: **Erlangen, Germany**

Arrival and Departure Dates: **23/07/12, 14/09/12**

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

#### **2. Financial**

Cost and method of return travel from the UK (£): **Plane. £150**

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

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

Value of Armourers & Brasiers/Alcan bursary: **£ 750**

Total received from College: **£ 150**

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

#### **3. Accommodation**

Accommodation address: **Hallerstrasse 17, Erlangen-Buckenhof**

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

Distance from Institution: **3 miles**

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): **4**

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

#### **4. Research Project**

Title of Research Project: **The effect of ruthenium on the solubility of rhenium in the matrix of Nickel based superalloys.**

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

Experimental Techniques used: **Use of the furnace, cutting, mounting, grinding, polishing, etching, light microscopy, SEM, image analysis (imagej)**

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): **6**

## **Report 2**

### **1. General**

Placement Location: **Erlangen, Germany**

Arrival and Departure Dates: **2nd July – 4th September**

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

### **2. Financial**

Cost and method of return travel from the UK (£): **KLM Airlines (£200), and approx. £25 to and from airport**

Total cost of daily travel to and from Institution (£): **£92.60**

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

Value of Armourers & Brasiers/Alcan bursary: **£750**

Total received from College: **£200**

Total received from Institution (£): **Accommodation Costs**

### **3. Accommodation**

Accommodation address: **Straßberg 27, Büchenbach, Erlangen, Nuremberg, Germany**

Type of Accommodation: **Shared house**

Distance from Institution: **6 miles**

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): **9**

Convenience of location: on a scale of 1 (low) to 10 (high): **7**

### **4. Research Project**

Title of Research Project: **Fracture Toughness and NiAl**

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

Experimental Techniques used: **SEM, Optical Microscopy, Finite Element Modelling, Digital Image Correlation, Mechanical Testing stage with strain gauge systems**

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): **9**

## **University of Goettingen, Germany**

### **Report 1**

#### **1. General**

Placement Location: **Goettingen, Germany**

Arrival and Departure Dates: **August 13th – September 27th**

No. of working days spent at Institution: **30 plus 5 at group seminar**

#### **2. Financial**

Cost and method of return travel from the UK (£): **There: Train, Ferry and Train: £112**

**Return: Train and Eurostar: £110, Used an Interrail Pass which I also used for other summer travels.**

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: **£750**

Total received from College: **None (did not apply)**

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



### 3. Accommodation

Accommodation address: **Kreuzbergring 44, Göttingen**

Type of Accommodation: **Student dormitory**

Distance from Institution: **2.4 km, with a very nice cycle path**

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: **The Change of Glass Transition Temperature with Heating Rate**

Written Report submitted to host institution: **Presentation given at full lab meeting and submitted. Continued analysis and detailed report still underway.**

Experimental Techniques used: **Ultra-rapid capacitive heating, differential scanning calorimetry**

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): **8**

## Report 2

### 1. General

Placement Location: **Goettingen - Germany**

Arrival and Departure Dates: **13th August – 29th September 2012**

No. of working days spent at Institution: **30 in the department and 5 at the institute seminar**

### 2. Financial

Cost and method of return travel from the UK (£): **Flights (London to Hamburg): £75**

**(Hamburg to London): 142 Euros (~£113)**

**Trains (Hamburg to Goettingen return): 76 Euros (~£60)**

**£27 Goettingen – Frankfurt (train), £105 Frankfurt – Cambridge (flight to Heathrow and bus to Cambridge);**

Total cost of daily travel to and from Institution (£): **Nil, bike provided by Institute**

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

Value of Armourers & Brasiers/Alcan bursary: **£ 750**

Total received from College: **£300**

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

### 3. Accommodation

Accommodation address: **Kreuzbergring 44, Goettingen, Germany**

Type of Accommodation: **University-owned Student Halls**

Distance from Institution: **15 minute bike ride or 25 minute walk**

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): **9 (half-way between department and city centre)**

### 4. Research Project

Title of Research Project: **Investigation of Oxide Thin Films deposited using MAD techniques**

Written Report submitted to host institution: **By email to Professor Samwer**

Experimental Techniques used: **MAD deposition, Ellipsometry, STM, AFM, XRD, PPMS**

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): 9

## **TUHH, Hamburg, Germany**

### **Report 1**

#### **1. General**

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

Arrival and Departure Dates: **1st July to 28th August**

No. of working days spent at Institution: **39**

#### **2. Financial**

Cost and method of return travel from the UK(£): **£110 Flight**

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

Total cost of accommodation (say if provided free): **€700, €600 provided by the institute**

Value of Armourers & Brasiers/Alcan bursary: **£750**

Total received from College: **£0**

Total received from Institution (£): **€600 for accommodation**

#### **3. Accommodation**

Accommodation address: **Northern Insitute of Technology Management, Kasernenstrasse 12, D-21073 Hamburg**

Type of Accommodation: **Student halls with ensuite**

Distance from Institution: **300m**

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): **10**

#### **4. Research Project**

Title of Research Project: **Fabrication and mechanical characterization of SiO<sub>2</sub>- PMMA composites using silanes as coupling agents**

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

Experimental Techniques used: **Planetary Ball Mill, Centrifuge, Uniaxial press, Automated circular saw, Thermogravital analysis, Nanoindentation, four point bend**

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): **8**

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

### **Report 2**

#### **1. General**

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

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

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

#### **2. Financial**

Cost and method of return travel from the UK (£): **150, Easyjet**

Total cost of daily travel to and from Institution (£): **50**

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

Value of Armourers & Brasiers/Alcan bursary: **£750**

Total received from College: **£250**

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

### 3. Accommodation

Accommodation address: **Eigenheimweg 12, 21077 Hamburg**

Type of Accommodation: **Family house with my own bedroom**

Distance from Institution (km): **30 minutes walk or 10 minutes by bus**

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): **6**

### 4. Research project

Title of Research Project: **Thermal, electrical and mechanical properties of vertically-aligned multiwalled carbon nanotube forest wetted in epoxy**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **CVD; SEM, DSC, DMTA, TGA**

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): **8**

Interaction with other researchers: on 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: **16th July – 22nd September**

No. of working days spent at Institution: **65**

### 2. Financial

Cost and method of return travel from the UK (£): **241 ,by plane (I live in Romania and tickets to Berlin are more expensive for some reason). (From the UK it would have been roughly 121.)**

Total cost of daily travel to and from Institution (£): **144 (over the whole period)**

Total cost of accommodation (say if provided free): **636**

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

Total received from College: **nil**

Total received from Institution (£): **1591**

### 3. Accommodation

Accommodation address: **Kaiserkorso 2, Etage 3, bei Zacharias Fisches, Berlin**

Type of Accommodation: **Room in a flat**

Distance from Institution: **1 hour with S-Bahn and bike**

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): **8**

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

### 4. Research project

Title of Research Project: **Report on component lifing methods and parameters**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **Finite Element Analysis**

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

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): **10**

## **Linde AG, Germany**

### **1. General**

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

Arrival and Departure Dates: **27/06/2012 – 31/08/2012**

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

### **2. Financial**

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

Total cost of daily travel to and from Institution (£): **£130 in total, €60 per month (student discount)**

Total cost of accommodation (say if provided free): **£660 in total, €300 per month**

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

Total received from College: **£430**

Total received from Institution (£): **£1305, €700 per month**

### **3. Accommodation**

Accommodation address: **Oberschleissheim and Josephsplatz**

Type of Accommodation: **Self find student accommodation**

Distance from Institution: **40 min by public transport**

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): **7**

Convenience of location: on a scale of 1 (low) to 10 (high): **7**

### **4. Research project**

Title of Research Project: **Porous surface of stainless steel**

Written Report submitted to Institute? **Yes**

Experimental Techniques used: **Optical microscope, SEM**

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

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**

## **ESI, Leoben, Austria**

### **Report 1**

#### **1. General**

Placement Location: **ESI, Leoben**

Arrival and Departure Dates: **22nd June - 19th August**

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

#### **2. Financial**

Cost and method of return travel from the UK (£): **Air (British Airways), £150, London Heathrow to Vienna Airport**

Total cost of daily travel to and from Institution (£): **Bus (A monthly bus pass was 40 euros, and a weekly bus pass was 12 euros)**

Total cost of accommodation (say if provided free): **317 euros for two months**

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

Total received from College: **Nil**

Total received from Institution (£): **£1550 (2700 euros for two months in the contract, but they deducted the difference between 'two months' and 'eight weeks', the local taxation, and compulsory health insurance)**

### 3. Accommodation

Accommodation address: **ÖH Studentenheim, Kerpelystraße 129, 8700 Donawitz**

Type of Accommodation: **Single room with shared kitchen (among ~10) and bathroom (among 5)**

Distance from Institution: **3km. 40min walk or 15min by 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): **7**

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

### 4. Research Project

Title of Research Project: **Recovery of PET Substrates**

Written Report submitted to host institution: **Yes, Time Dependent Mechanical Behaviour of PET Substrates**

Experimental Techniques used: **Optical and Scanning Electron Microscopy, Vickers diamond pyramid indenter.**

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: **ESI Leoben, Austria**

Arrival and Departure Dates: **23/06/2012- 18/08/2012**

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

### 2. Financial

Cost and method of return travel from the UK (£): **Flight to Graz (via Munich) with Lufthansa- £180**

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

Total cost of accommodation (say if provided free): **370 Euros (~£290)**

Value of Armourers & Brasiers/Alcan bursary: **none**

Total received from College: **£400**

Total received from Institution (£) : **2009.30 Euro (£1550)**

### 3. Accommodation

Accommodation address: **Kerpelystrasse 129/3/49, 8700 Leoben, Austria**

Type of Accommodation: **Student dormitory**

Distance from Institution: **3.5 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): **4**

### 4. Research Project

Title of Research Project: **Preparation and Characterisation of Microporous Copper**

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

Experimental Techniques used: **Cutting tools- rotating blade and diamond wire; Vicker's Hardness/nanoindenter; SEM; Grinding tool; Sand blaster; HPT; Grain size classifier; Mixing tool; Oven; Optical microscope.**

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): **7**

## TU Vienna, Austria

### 1. General

Placement Location: **Technical University, Vienna, Austria**

Arrival and Departure Dates: **1 July - 30 August**

No. of working days spent at Institution: **47**

### 2. Financial

Cost and method of return travel from the UK (£): **N/A**

Total cost of daily travel to and from Institution (£): **€50**

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

Value of Armourers & Brasiers/Alcan bursary: **£530**

Total received from College: **£0**

Total received from Institution (£): **£300**

### 3. Accommodation

Accommodation address: **83 Neustiftgasse 1070 Wien**

Type of Accommodation: **Student Halls**

Distance from Institution: **~2km**

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): **9-10**

### 4. Research Project

Title of Research Project: **Comparison of Thermomechanical Properties of Aluminium-Copper Alloys**

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

Experimental Techniques used: **Thermal treatments, compression tests/analysis, optical microscopy**

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): **9**

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