

European Vacation Placements: Reports 2018

Below are reports on the Summer Placements provided by students who participated in the scheme in 2018.

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ETH, Zurich, Switzerland

Report 1

1. General		
Placement Location	ETH Zürich, Laboratory for Multifunctional Materials	
Arrival and Departure Dates	14/08 – 1/10	
No. of working days spent at Institution	35	
2. Financial		
Cost and method of return travel from the UK (£)	Airplane (return LHR/ZRH) + transfers (home to LHR) £240 + £60	
Total cost of daily travel to and from Institution	£0 (walking distance)	
Total cost of accommodation (say if provided free)	£800	
Value of Armourers & Brasiers bursary	£1265	
Total received from College	£250	
Total received from Institution	£860	
3. Accommodation		
Accommodation address	Bächlerstrasse 46, 8046, Zürich.	
Type of Accommodation	Student Apartment (Woko)	
Distance from Institution	20 mins 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)	8
Convenience of location	on a scale of 1 (low) to 10 (high)	9
4. Research Project		
Title of Research Project	Preliminary investigation into ZnS quantum dots for use in lithium-ion batteries	
Written Report submitted to host institution	Y	
Experimental Techniques used:	Misc. wet chemistry methods, microwave synthesis, autoclave synthesis, tube furnace heat-treatment, XRD powder diffraction, use of Ar glovebox for Li-ion battery assembly, SEM/TEM imaging with EDX mapping (observed, didn't operate)	
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
Short summary (~ 200 words) of technical content of project:		

Report 2

1. General		
Placement Location	ETH Zürich	
Arrival and Departure Dates	16.07.18-07.09.18	
No. of working days spent at Institution	40	
2. Financial		
Cost and method of return travel from the UK (£)	£ 260.00	
Total cost of daily travel to and from Institution	£ 2.50	
Total cost of accommodation (say if provided free)	£ 1020	
Value of Armourers & Brasiers bursary	£ 1165	
Total received from College	£ 1200	
Total received from Institution	1100 CHF (£880)	
3. Accommodation		
Accommodation address	23, Sonneggstrasse, 8006, Zürich	
Type of Accommodation	Room in shared flat (subletting via WOKO)	
Distance from Institution	7 km	
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	Mechanical strengthening of new Al-based alloys via structural manipulation	
Written Report submitted to host institution	Mechanical strengthening of new Al-based alloys via structural manipulation	
Experimental Techniques used:	Mechanical grinding and polishing, annealing, light microscopy, SEM (supervised), TEM (supervisor operating the microscope), TEM sample preparation (including electropolishing), melt spinning (supervised), wire spinning (supervised)	
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
Interaction with other researchers	on a scale of 1 (low) to 10(high)	8

EPFL, Lausanne, Switzerland

1. General	
Placement Location	EPFL, Lausanne, Switzerland

Arrival and Departure Dates	30/07/18 – 06/07/18	
No. of working days spent at Institution	39	
2. Financial		
Cost and method of return travel from the UK (£)	By air: £70.33 outward flight, CHF207.56 return flight	
Total cost of daily travel to and from Institution	Free	
Total cost of accommodation (say if provided free)	Provided free	
Value of Armourers & Brasiers bursary	£460	
Total received from College	£350	
Total received from Institution	900 francs	
3. Accommodation		
Accommodation address	“Les Estudiantines”, Route Cantonale 37, 1025 Saint-Sulpice, Switzerland	
Type of Accommodation	Shared student flat with own room (en-suite)	
Distance from Institution	5 minutes 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)	9
Convenience of location	on a scale of 1 (low) to 10 (high)	10
4. Research Project		
Title of Research Project	“Optimisation of an ABL kinase assay in order to test the effect of gold nanoparticles on the enzyme”	
Written Report submitted to host institution	Yes	
Experimental Techniques used:	HTRF (Homogeneous Time Resolved Fluorescence), NMR (Nuclear Magnetic Resonance), TEM (Transmission Electron Microscopy), TGA (Thermogravimetric Analysis)	
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

EMPA, Thun, Switzerland

1. General		
Placement Location	EMPA, Thun, Switzerland	
Arrival and Departure Dates	Arrival: 01/07/18 Departure: 07/09/18	
No. of working days spent at Institution	49	

2. Financial		
Cost and method of return travel from the UK (£)	Easyjet flight, Luton to Zurich (with 23kg bag): £74.37 Train, Zurich to Thun: 65CHF (£50.10) Train, Thun to Basel: 51CHF Easyjet flight, Basel to Luton (with 23kg bag): £60.93	
Total cost of daily travel to and from Institution	None, borrowed a bike	
Total cost of accommodation (say if provided free)	Provided free	
Value of Armourers & Brasiers bursary	None	
Total received from College	Up to £145	
Total received from Institution	750CHF per month	
3. Accommodation		
Accommodation address	Hotelfachschule Thun, Mönchstrasse 37, 3600 Thun, Switzerland	
Type of Accommodation	Long-term hotel (with communal kitchen)	
Distance from Institution	4.3km (20min by bike or 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)	9
Convenience of location	on a scale of 1 (low) to 10 (high)	8
4. Research Project		
Title of Research Project	Investigating the fracture mechanics and toughness of LT-ALD Alumina and Zinc Oxide nanolaminates on Kapton	
Written Report submitted to host institution	Yes	
Experimental Techniques used:	Tensile stage operation, with image capture microscope SEM (under supervision)	
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)	6

PSI, Villigen, Switzerland

1. General	
Placement Location	Paul Scherrer Institute, Switzerland
Arrival and Departure Dates	24/06 – 31/08
No. of working days spent at Institution	50 (Including 4.5 days holiday and Swiss national holiday)
2. Financial	
Cost and method of return travel from the UK (£)	Easyjet – Bristol to Basel return. Cost: £110

Total cost of daily travel to and from Institution	£0	
Total cost of accommodation (say if provided free)	CHF 1750 (CHF 25 per night)	
Value of Armourers & Brasiers bursary	£0	
Total received from College	£0	
Total received from Institution	~ CHF 4250 after taxes (~8 %)	
3. Accommodation		
Accommodation address	PSI Gastehaus, Paul Scherrer Institut, Villigen, Aargau	
Type of Accommodation	Shared room in institute guesthouse	
Distance from Institution	Walk of about five minutes (enough time to eat two bananas)	
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
4. Research Project		
Title of Research Project	Transmission behavior of screw dislocations with incoherent Σ3 twin boundaries in fcc metals	
Written Report submitted to host institution	Yes	
Experimental Techniques used:	Atomistic modelling using LAMMPS on the CSCS (Swiss supercomputer), analysis in OVITO, script writing in python	
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)	3

University of Erlangen, Germany

1. General	
Placement Location	Erlangen, Germany
Arrival and Departure Dates	July 1st – August 31st
No. of working days spent at Institution	44
2. Financial	
Cost and method of return travel from the UK (£)	London Stansted-Frankfurt (flight): £78.23 Frankfurt-Erlangen return(trains): around 80€ in total (I got a 3-month 25 Bahn Card for 20€ which saved me a lot of money travelling with DB)
Total cost of daily travel to and from Institution	€7.2 (for journeys before given a bike)
Total cost of accommodation (say if provided free)	Provided free

Value of Armourers & Brasiers bursary	£860	
Total received from College	£700	
Total received from Institution	£0 (accommodation provided free)	
3. Accommodation		
Accommodation address	Loewenichstraße 33, 91054 Erlangen	
Type of Accommodation	En-suite room in an apart-hotel with shared kitchen.	
Distance from Institution	3.5km	
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	1. Recrystallization behaviour of cobalt based superalloys 2. Microstructure characterisation of 2 Co-Al-W series superalloys	
Written Report submitted to host institution	Yes	
Experimental Techniques used:	Heat treatments, cutting, metallography, light and electron microscopy, 3D tomography microscopy, micro indentations/hardness testing	
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)	8
Interaction with other researchers	on a scale of 1 (low) to 10(high)	6

TUHH, Hamburg, Germany

Report 1

1. General	
Placement Location	TUHH
Arrival and Departure Dates	1st July -31st Aug
No. of working days spent at Institution	40
2. Financial	
Cost and method of return travel from the UK (£)	£50 return flight
Total cost of daily travel to and from Institution	0
Total cost of accommodation (say if provided free)	800EUR for 8 weeks
Value of Armourers & Brasiers bursary	800EUR

Total received from College	0	
Total received from Institution	600EUR	
3. Accommodation		
Accommodation address	Kasernenstrasse 12, Hamburg 21073	
Type of Accommodation	Uni flat	
Distance from Institution	2 mins	
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
4. Research Project		
Title of Research Project	Investigation of the scale-up production of oleic acid covered magnetite supercrystals	
Written Report submitted to host institution	Y	
Experimental Techniques used:	SEM, Nanoindentation, optical microscopy, ATS pressing	
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)	7
Interaction with other researchers	on a scale of 1 (low) to 10(high)	6

Report 2

1. General		
Placement Location	TUHH Institute of Polymers and Composites, TUHH, Hamburg, Germany.	
Arrival and Departure Dates	Sunday 1st July – Wednesday 29th August	
No. of working days spent at Institution	40	
2. Financial		
Cost and method of return travel from the UK (£)	£32 flight out, £35 flight return with Ryanair. Train to Manchester airport approximately £30 return. Public transport to Hamburg airport approximately £6.	
Total cost of daily travel to and from Institution	£4 return by bus (10 minutes) or walk (25 minutes). Unfortunately, because you're not a registered student you don't qualify for the reduced student transport pass. Instead, I bought a bike which I then sold at the end of my stay (10-minute cycle).	
Total cost of accommodation (say if provided free)	Provided free of charge by TUHH.	
Value of Armourers & Brasiers bursary	£865 (£765 before trip, £100 expected afterwards).	
Total received from College	£700	
Total received from Institution	None, free accommodation only.	
3. Accommodation		

Accommodation address	Große Straße 124 C, 21075 Hamburg	
Type of Accommodation	Shared basement flat. Private bedroom, then sharing kitchen and bathroom with another student. Hosts/landlords live above.	
Distance from Institution	3 km	
Quality of accommodation	on a scale of 1 (low) to 10 (high)	9 – Very large bedroom with double bed, patio and even a grand piano. Hosts made me feel welcome and were happy for me to host guests.
Quality of facilities	on a scale of 1 (low) to 10 (high)	8 – Washing machine and tumble dryer included. Two hobs and a microwave.
Convenience of location	on a scale of 1 (low) to 10 (high)	5 – Roughly one hour to the centre of Hamburg. Public transport to the university is expensive if used every day. Buses to Harburg every 10min then less frequent from 8-9pm. Very quiet location.
4. Research Project		
Title of Research Project	Investigating the Strength of the Interface between Glass Rovings and Epoxy Resin	
Written Report submitted to host institution	Presentation	
Experimental Techniques used:	RTM – Resin Transfer Moulding, Tensile testing, CAD/CAM/CNC, Optical 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)	8
Interaction with other researchers	on a scale of 1 (low) to 10(high)	8

MagIC, HZG-Geesthacht, Germany

1. General	
Placement Location	MagIC, Helmholtz Zentrum Geesthacht (HZG)
Arrival and Departure Dates	August 2nd – September 21st
No. of working days spent at Institution	37
2. Financial	
Cost and method of return travel from the UK (£)	£135 by plane

Total cost of daily travel to and from Institution	Free	
Total cost of accommodation (say if provided free)	€374	
Value of Armourers & Brasiers bursary	£415	
Total received from College	£0	
Total received from Institution	€700	
3. Accommodation		
Accommodation address	Otto-Hahn Straße 1, 21502, Geesthacht, Germany	
Type of Accommodation	Guest house	
Distance from Institution	500m	
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)	10
4. Research Project		
Title of Research Project	In Situ Synchrotron Radiation Diffraction of the Solidification of Mg-Nd-Zn(-Zr) Alloys	
Written Report submitted to host institution	Yes	
Experimental Techniques used:	Metallography (grinding and polishing), optical microscopy, SEM, TEM and synchrotron diffraction (carried out before I arrived to obtain data)	
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
Interaction with other researchers	on a scale of 1 (low) to 10(high)	9

Rolls-Royce Deutschland, Germany

1. General		
Placement Location	Rolls-Royce Deutschland – Dahlewitz, Berlin	
Arrival and Departure Dates	14th July - 27th Sept	
No. of working days spent at Institution	43	
2. Financial		
Cost and method of return travel from the UK (£)	Flight - 96 Euros	
Total cost of daily travel to and from Institution	3.5 Euros	
Total cost of accommodation (say if provided free)	1500 Euros	

Value of Armourers & Brasiers bursary	600 Pounds	
Total received from College	400 Pounds	
Total received from Institution	1600 Euros	
3. Accommodation		
Accommodation address	4 Konradinstrasse, Tempelhof, Berlin, 12105	
Type of Accommodation	Flat shared with 1 roommate	
Distance from Institution	~ 20 km	
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)	5
4. Research Project		
Title of Research Project	Stress- Strain Analysis for a Compressor Disc Feature by Means of an Equivalent Simplified Model	
Written Report submitted to host institution	Yes	
Experimental Techniques used:	Finite Element Analysis	
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)	6

Linde AG, Germany

1. General		
Placement Location	Linde AG, Unterschleißheim	
Arrival and Departure Dates	02/07/18 – 26/09/18	
No. of working days spent at Institution	50	
2. Financial		
Cost and method of return travel from the UK (£)	£160, flight	
Total cost of daily travel to and from Institution	Commuted by bike - £125 total for 10 weeks	
Total cost of accommodation (say if provided free)	£1863.04	
Value of Armourers & Brasiers bursary	£750	
Total received from College	£100	
Total received from Institution	£1720.88	
3. Accommodation		

Accommodation address	Triebstraße 8b / Stuntzstraße 15	
Type of Accommodation	AirBNB / sub-let of private flat	
Distance from Institution	13 km / 20 km	
Quality of accommodation	on a scale of 1 (low) to 10 (high)	6 / 9
Quality of facilities	on a scale of 1 (low) to 10 (high)	8 / 8
Convenience of location	on a scale of 1 (low) to 10 (high)	9 / 9
4. Research Project		
Title of Research Project	N/A	
Written Report submitted to host institution	Yes	
Experimental Techniques used:	3D printing, visible light microscopy, hardness testing, metallography preparation	
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

Max-Planck Institut für Eisenforschung, Düsseldorf, Germany

Report 1

1. General	
Placement Location	Max Planck Institut für Eisenforschung Düsseldorf
Arrival and Departure Dates	30/06/2018 – 01/09/2018
No. of working days spent at Institution	45
2. Financial	
Cost and method of return travel from the UK (£)	British Airways LHR to DUS £132.00
Total cost of daily travel to and from Institution	Free (15 min walk)
Total cost of accommodation (say if provided free)	€950 per month
Value of Armourers & Brasiers bursary	£230
Total received from College	£200
Total received from Institution	€800 per month
3. Accommodation	
Accommodation address	Brehmstraße 33A, Düsseldorf, 40239
Type of Accommodation	1 bedroom apartment with kitchen and bathroom

	found on thehomelike.com	
Distance from Institution	1 km	
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
4. Research Project		
Title of Research Project	Experimental investigations of phase relations in Co-rich Co-Ti alloys	
Written Report submitted to host institution	Yes and presentation	
Experimental Techniques used:	Metallography, Scanning Electron Microscopy (SEM), Energy Dispersive X-ray Spectroscopy (EDX), Differential Scanning Calorimetry (DSC), X-ray Diffraction (XRD)	
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)	7

Report 2

1. General		
Placement Location	MPIE, Düsseldorf, Germany	
Arrival and Departure Dates	1/7/18 - 1/9/18	
No. of working days spent at Institution	45	
2. Financial		
Cost and method of return travel from the UK (£)	Flights from Manchester to Dusseldorf with Eurowings - £146.80 inc. baggage	
Total cost of daily travel to and from Institution	€140 for a YoungTicketPlus but included travel across the entire local region	
Total cost of accommodation (say if provided free)	€1020	
Value of Armourers & Brasiers bursary	£330	
Total received from College	£200	
Total received from Institution	€800 per month	
3. Accommodation		
Accommodation address	Dürener Straße, 40223, Düsseldorf	
Type of Accommodation	Shared flat	
Distance from Institution	7 km, 30 minutes using public transport	
Quality of accommodation	on a scale of 1 (low) to 10 (high)	3
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	Microstructure evaluation of pearlite in nanoindentation	
Written Report submitted to host institution	Yes, along with poster and presentation	
Experimental Techniques used:	Metallography, scanning electron microscopy, scientific programming in python	
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)	9