



## Summer School in High Energy Processing Ultrasound & Microwave technologies Université d'Avignon, France 6-10 June 2011

- Four day event aimed at postgraduate students and Post-doc researchers with an interest in expanding their knowledge in ultrasound and microwaves technologies applied to chemical processes (Sonochemistry, Microwaves, Green technologies, Environmental processing, Synthesis, Extraction). The course will include both theoretical and practical classes.
- The microwave sessions will be lead by Prof Gary Bond who has over 20 years experience of applying microwaves to chemical systems. The microwave course will start by introducing students to the interaction of microwaves with matter and use this understanding to address fundamental issues relating to the design of microwave based experiments. While it is outside the scope of this course to cover the fundamentals of microwave applicator design students will be introduced to a range of applicators that can be used / modified for chemicals synthesis / processing. A review of current applications of microwaves in the areas of organic synthesis, polymer processing, catalysis and materials characterisation will be provided. This will cumulate in a session devoted to looking at industrial scale microwave processes for chemicals production and processing.
- The ultrasound techniques will be covered by Prof Tim Mason and Dr. Eadaoin Joyce who are both internationally recognised for their work in the application of ultra sound to chemical systems.
- The summer school is limited to **50 participants**. All coffee and lunches will be provided by the organising committee.
- **Registration fee for the Summer School is €100 (cash)** which can be paid at registration. Transportation to and from ICMS is included.
- **Three Scholarship of 400.00 Euro/each** will be offered to AMPERE young members who will present proper request to AMPERE Secretariat (see website [www.ampereurope.org](http://www.ampereurope.org))
- A formal conference dinner will be arranged for 8<sup>th</sup> June 2011. This can be paid for at the point of registration.
- There will be a poster session for participants on Thursday 9<sup>th</sup> April 2011 during the visit of ICMS Centre de Marcoule. If you wish to present a poster please prepare to **size A0** (Height x Width - 1189 x 841 mm or 46.8 x 33.1 inches) and email the title of the poster to Dr E. Joyce ([e.joyce@coventry.ac.uk](mailto:e.joyce@coventry.ac.uk)) by the **16<sup>th</sup> May 2011**.
- **Travel:** UK - direct flights to Avignon or Marseille (+ TGV to Avignon, Paris is only 2h40)
- **Accommodation:** Please arrange your own accommodation directly with the student's residence or hotels listed below the agenda.
- **Please note: As this is a peak summer season in Avignon early reservation of accommodation is strongly advised**



## Summer School Agenda

### Monday 6<sup>th</sup> June 2011

Time	Activity
12.30-14.00	Registration
14.00-14.30	Prof F. Chemat – Introduction to practical laboratories
14.30-15.45	Prof T. Mason – Introduction to Ultrasound (US) <ul style="list-style-type: none"> <li>• Background and theory</li> </ul> Designs of ultrasonic equipment
15.45-17.00	Dr. G. Bond – Introduction to Microwaves (MW) <ul style="list-style-type: none"> <li>• Interaction of Microwave with matter</li> <li>• Microwave cavities <ul style="list-style-type: none"> <li>○ Multimode cavity</li> <li>○ Single mode cavities</li> </ul> </li> </ul> Specialist cavities

### Tuesday 7<sup>th</sup> June 2011

Time	Activity
9.00-10.45	Ultrasound lectures (US) <ul style="list-style-type: none"> <li>• Applications of ultrasound in a range of fields</li> </ul>
10.45-11.00	Coffee
11.00-12.30	Dr G. Bond – Microwaves lectures (MW) <ul style="list-style-type: none"> <li>• Microwave enhanced organic chemistry <ul style="list-style-type: none"> <li>○ Homogeneous reactions</li> <li>○ Solvent free reactions</li> </ul> </li> <li>• Applications of Microwaves in ceramic processing</li> <li>• Applications of Microwaves in polymer processing</li> </ul>
12.30-14.00	Lunch
14.00-17.00	Practical laboratories – Ultrasound & Microwaves

### Wednesday 8<sup>th</sup> June 2011

Time	Activity
9.00-11.45	Prof F. Chemat - Ultrasound lectures (US) <ul style="list-style-type: none"> <li>• Ultrasound in food technologies</li> </ul> Dr. Eadaoin Joyce - Ultrasound lectures (US) <ul style="list-style-type: none"> <li>• Ultrasound in environmental protection</li> </ul>
10.45-11.00	Coffee
11.00-12.30	Dr G. Bond – Microwaves lectures (MW) <ul style="list-style-type: none"> <li>• Industrial Applications (TBC)</li> <li>• Possible specialists topic Microwave stimulation of catalysts</li> <li>• Applications of Microwaves in pollution abatement</li> </ul>
12.30-14.00	Lunch
14.00-17.00	Practical laboratories – Ultrasound & Microwaves
TBC	Official dinner (TBC & paid for on registration)



## Thursday 9<sup>th</sup> June 2011

Time	Activity (Visit of ICSM Centre de Marcoule)
8.15	Bus to take participants from Avignon-Marcoule
9.00	Prof. Th. Zemb, Director of ICSM - Welcome
9.30	Dr. S. Nikitenko – Multi-frequency Sonochemistry & Sonoluminescence
10.30	Coffee and Participant Poster Session
11.00	Dr. L. Venault - Sonochemistry of Actinides
12.00	Lunch at restaurant in Marcoule
14.00	Visit of ICSM, & discussions with researches
16.30	Bus to take participants from Marcoule-Avignon

## Student Accommodation

### Option 1

"Espace Europe", 2, str. Paul Mérindol, 84 000, Avignon

Phone: 0490164020

Fax: 0490854234

Web: [www.declipoutoit.com](http://www.declipoutoit.com)

Cost: **€19.34 per person per night** (Reservation = 30% of Total price on reservation)

Room for 4-5 people, (bedclothes), bath room, WC, micro-wave, fridge no restaurant or breakfast provided.

**The residence is located 5 minutes from the city centre**

### Option 2

"Les Fenaisons", Avenue de Mme. Maisonneuve, CROUS Service of student's l'Amandier, 84000 Avignon

Phone: 0490806523

Web: [helene.maisonneuve@crous-aix-marseille.fr](mailto:helene.maisonneuve@crous-aix-marseille.fr)

Cost: **€155.00 per week**

No restaurant or breakfast provided.

**The residence is located 6 km from the city centre or a 20 in bus N3, stop "Patinoire" 07h00-20h00. Commercial Centre "Cap Sud" is a 15 min a walk or 5 min bus**

## Hotels:

List of Hotels and Residences in Avignon			
Nom	Cost in Euros per night	Address	Telephone / Fax / mail
<b>ETAP HÔTEL</b> Room equipped with a double bed and a simple bed Salle de bain +	47.00 € simple 56.00 € double 4.70 € breakfast	8, boulevard Saint Dominique 84 000 AVIGNON	Tél: 08 92 68 07 24 Fax: 04 90 86 27 19 Site web: <a href="http://www.etaphotel.com">www.etaphotel.com</a> Mail: <a href="mailto:h2603-re@accor.com">h2603-re@accor.com</a>

toilettes + WIFI gratuit			
<b>HÔTEL LE MAGNAN</b> <b>**</b> Room fully equipped bathroom + toilettes + WIFI Free	58.00 € simple 73.00 € TWIN Breakfast included	63, rue Portail Magnanem 84 000 AVIGNON	Tél: 04 90 86 36 51 Fax: 04 90 85 48 90 Site web: <a href="http://www.hotel-magnan.com">www.hotel-magnan.com</a> Mail: <a href="mailto:magnan@wanadoo.fr">magnan@wanadoo.fr</a>
<b>HÔTEL LE MEDIEVAL</b> <b>**</b> Room fully equipped bathroom + toilettes + WIFI Free	50.00 € simple 55.00 € TWIN 7.00 € breakfast	15 rue Petite Saunerie 84 000 AVIGNON	Tél: 04 90 86 11 06 Fax: 04 90 82 08 64 Site web: <a href="http://www.hotelmedieval.fr">http://www.hotelmedieval.fr</a> Mail: <a href="mailto:hotel.medieval@wanadoo.fr">hotel.medieval@wanadoo.fr</a>
<b>HÔTEL DU PALAIS DES PÂPES ***</b> Room fully equipped bathroom + toilettes + WIFI Free	72.00 € simple 98.00 € TWIN 8.00 € breakfast	3, Place du Palais des Papes 84 000 AVIGNON	Tél: 04 90 86 04 13 Fax: 04 90 27 91 17 Site web: <a href="http://www.hotel-palais-des-papes.fr">http://www.hotel-palais-des-papes.fr</a> Mail: <a href="mailto:contact@hotel-avignon.com">contact@hotel-avignon.com</a>
<b>RESIDENCE LE 5 EPI</b> Studio Room fully equipped bathroom + toilettes + WIFI Free	Per week: 200 to 250 €	5, impasse de l'Epi 84 000 AVIGNON	Tél: 04 90 89 91 39 Fax: 04 90 25 76 07 Site web: <a href="http://avignon-residencemeublee.fr">http://avignon-residencemeublee.fr</a> Mail: <a href="mailto:5epi@residencemeublee.fr">5epi@residencemeublee.fr</a>
<b>RESIDENCE LES CORDELIERS</b> Studio Room fully equipped bathroom + toilettes + WIFI Free Internet gratuit sur demande	Per week: 240 €	Les Cordeliers B 49 rue Portail Magnanen 84 000 AVIGNON	Tél: 04 90 86 23 84 / 09 62 30 53 51 Portable: 06 48 20 20 93 Fax: 04 90 86 09 24 Site web: <a href="http://www.saga-cordeliers.fr">www.saga-cordeliers.fr</a> Mail: <a href="mailto:mickael.gobin@saga-cordeliers.fr">mickael.gobin@saga-cordeliers.fr</a>