

**HERCULES SPECIALED COURSES**  
**NEUTRONS AND SYNCHROTRON X-RAYS FOR INDUSTRIAL APPLICATIONS**

**Monday, 2<sup>nd</sup> May 2011**

11h30 – 14h00	Registration and Buffet Lunch (Salle d’Hôtes ESRF/ILL)	
Lectures in the ESRF Auditorium		
14h00 – 14h15	José BARUCHEL (ESRF–Grenoble) Francesco SETTE (ESRF–Grenoble) Andrew HARRISON (ILL-Grenoble)	Director’s Welcome
14h15 – 14h40	Bill STIRLING (CEA/ESRF–Grenoble)	Overview of ESRF and ILL
14h40 – 15h10	Didier ROUX (Saint-Gobain)	The house of the future : challenges and innovation
15h10 – 15h40	David RUGG (Rolls Royce)	Industrial use of synchrotrons – Aerospace and Nuclear Applications
15h40 – 16h00	Coffee Break	
16h00 – 17h30	Technique Clips (6 minutes each) – Animator: Bill STIRLING	
	Isabelle GRILLO (ILL-Grenoble)	SAXS-SANS
	Michael SZTUCKI (ESRF–Grenoble)	SAXS/WAXS/MicroSAXS
	Pierre BLEUET (ESRF–Grenoble)	Tomography
	Gema MARTINEZ-CRIADO (ESRF-Grenoble)	XRF and Microanalysis
	Tobias SCHULLI (ESRF–Grenoble)	Surface and GISAXS
	Tamzin LAFFORD (ESRF–Grenoble)	Diffraction imaging
	Elsbeth GORDON (ESRF–Grenoble)	MX and NMX
	Trevor FORSYTH (ILL-Grenoble)	Biolabelling for neutrons
	Sakura PASCARELLI (ESRF – Grenoble)	XAS/EXAFS
	François RIEUTORD (CEA–Grenoble)	X + N Reflectivity – GISANS
	Manfred BURGHAMMER (ESRF–Grenoble)	X-ray μ/nano dif
	Adrian HILL (ESRF–Grenoble)	Powder/Singl Crystal Diffraction
	Thilo PIRLING (ILL-Grenoble)	Stress/Strain
	Marine COTTE (ESRF–Grenoble)	FTIR
17h30 – 18h00	Jean DOUCET (Université Paris Sud)	How to access to synchrotron and neutron facilities
18h00 – 19h30	Jean DOUCET (Université Paris Sud) Ed MITCHELL (ESRF–Grenoble) Elsbeth GORDON (ESRF–Grenoble)	Speed dating In ESRF/ILL Cafeteria Wine and Cheese
	DINNER AT THE ESRF/ILL CANTEEN	

**HERCULES SPECIALED COURSES**  
**NEUTRONS AND SYNCHROTRON X-RAYS FOR INDUSTRIAL APPLICATIONS**

**Tuesday, 3<sup>rd</sup> May 2011**

**Parallel sessions at the ILL (8h30 – 10h30)**

<b>ILL 4 – 4<sup>th</sup> floor Room 427</b>	<b>ILL 4 – 1st floor Seminar Room (163)</b>	<b>ILL 4 – ground floor Auditorium</b>
<b>Soft/Bio</b>	<b>Mat/Catal/Eng</b>	<b>Nano/Surfac/Interfac</b>
<p>Introduction  <b>Trevor Forsyth (ILL-Grenoble)</b>  (30 mn)</p>	<p>Introduction  <b>Phil Withers (University Manchester)</b>  (30 mn)</p>	<p>Introduction  <b>Gilles Renaud (CEA-Grenoble)</b>  (40 mn)</p>
<p>Protein structure, (SAXS, SANS, MX, NMX)  <b>Elspeth Gordon (ESRF-Grenoble)</b>  (30 mn)</p>	<p>3D characterization of damage in structural metallic materials using synchrotron X rays.  <b>Jean-Yves Buffière (INSA-Lyon)</b>  (45 mn)</p>	<p>Characterisation of functional coatings using large scale facilities  <b>Elin Søndergård (CNRS Saint-Gobain)</b>  (40 mn)</p>
<p>Applied aspects of surfactant adsorption and self-assembly studied by NR, XR, SANS and SAXS  <b>Jeff Penfold (ISIS -Didcot)</b>  (60 mn)</p>	<p>Residual stresses in as-cast aluminium components: Neutron Diffraction measurements and FE modelling  <b>Jean-Marie Drezet (EPFL-Lausanne)</b>  (45 mn)</p>	<p>In-situ catalysis experiments at ID03, an overview  <b>Olivier Balmes (ESRF-Grenoble)</b>  (40mn)</p>
<b>10h30 – 11h00      Coffee Break</b>		

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**Tuesday, 3rd May 2011**

**Parallel sessions at the ILL continued (11h00 – 12h00)**

<b>ILL 4 – 4<sup>th</sup> floor Room 427</b>	<b>ILL 4 – 1st floor Seminar Room (163)</b>	<b>ILL 4 – ground floor Auditorium</b>
<b>Soft/Bio</b>	<b>Mat/Catal/Eng</b>	<b>Nano/Surfac/Interfac</b>
In situ investigation of polymers and biopolymers using X-ray and neutron scattering techniques <b>Martin Mueller (Helmholtz-Geesthacht)</b> (30 mn)	Application of Combined EXAFS and Diffraction techniques of industrial catalytic materials <b>Gopinathan Sankar (University College-London)</b> (30 mn)	Synchrotron diagnostics for Si photovoltaics <b>Winfried Seifert (IHP-Frankfurt)</b> (30 mn)
	Chemical processing on pharmaceutical compounds followed by powder diffraction <b>Michaela Brunelli (ILL-Grenoble)</b> (30 mn)	Addressing Problems in Microelectronics with Spectromicroscopy <b>Claus Schneider (FZ Jülich)</b> (30 mn)

**All participants in the ILL Auditorium**

<b>12h00 – 13h00</b>	Advanced X-ray tomography applications for industry <b>Elodie Boller (ESRF-Grenoble)</b>
	Industrial applications of X-ray nano-tomography <b>Peter Cloetens (ESRF-Grenoble)</b>
	Time resolved x-ray microtomography <b>Marco Di Michiel (ESRF-Grenoble)</b>

**LUNCH AT THE ESRF/ILL CANTEEN**

<b>14h00 – 18h20</b>	<b>Practicals at the ESRF and ILL (as per distributed schedule)</b>
<b>18h30 – 19h30</b>	<b>Visit of the ESRF or ILL</b>
<b>20h00 – 22h30</b>	<b>Dinner at the “Chateau de la Commanderie” (Bus organised to go there and back)</b>

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**Wednesday, 4th May 2011**

8h30 – 10h30	<b>DEMONSTRATIONS AT ILL</b>  <b>VISITS AT ESRF</b>  (as per schedule)	
10h30 – 11h00	Coffee Break	
Lectures the ESRF Auditorium		
11h00 – 11h30	Frédéric LEROY (L’Oreal)	Synchrotron for cosmetic science Light unravels Biology
11h30 – 12h30	Jean DOUCET (Université Paris Sud) Philip WITHERS (University Manchester)	Forum discussion and exchange: All specialists present
12h30 – 14h00	BUFFET LUNCH in ESRF/ILL Salle d’Hôtes	