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French nationality

28 years' old
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**Postdoctoral Researcher at the Institute of Theoretical Physics
 University of Warsaw (Poland)**

WORK EXPERIENCE

From March 2013	<p>Postdoctoral Researcher at the University of Warsaw (Poland) with Piotr Szymczak. Experimental (microfluidics) and numerical study of the dissolution of porous media</p> <ul style="list-style-type: none"> • Design of a microfluidic experiment allowing complete control on the parameters (Hele-Shaw cell) • Realisation of the experimental phase diagram and comparison with theoretical predictions
October 2010 - December 2013	<p>PhD at Laboratoire Navier, a joint research unit between the Ecole des Ponts Paritech, CNRS and IFSTTAR, under the direction of Teddy Fen-Chong on "Thermochemical-based poroelastic modelling of salt crystallization, and a new multiphase flow experiment: how to assess injectivity evolution in the context of CO₂ storage in deep saline aquifers ?" (HAL link)</p> <p>Funding by ADEME (French National Agency for Environment and Energy), BRGM (French Geological Survey), IFSTTAR and Chaire CTSC (Carbon dioxide Capture Transport and Storage).</p> <p>Synopsis</p> <ul style="list-style-type: none"> • Theoretical and experimental study of the effect of the crystallization of salt induced by carbon dioxide injection on the poromechanical behavior of a REV. • Measurement of capillary pressure, intrinsic and relative permeability of a rock core under deep saline aquifer's conditions. <p>Participation in the design and purchase of a 200k€ reactive-percolation prototype.</p> <ul style="list-style-type: none"> • Redaction of specifications. • Development of the prototype in partnership with Sanchez Technologies. • Contract negotiated with Air Liquide for the supply and storage of carbon dioxide bottles (38k€ contract).
INTERNSHIPS	
February - August 2010	<p>SRPC (Schlumberger Riboud Product Centre) in Clamart (France):</p> <ul style="list-style-type: none"> • Development of an imaging technique for determination of wettability of reservoir rocks.
April - June 2009	<p>Microfluidic, MEMs and Nanostructures laboratory, part of the UMR Gulliver 7083 in the ESPCI:</p> <ul style="list-style-type: none"> • Design of a microfluidic device to create double emulsions for encapsulation.
July - December 2008	<p>Philips Eindhoven (The Netherlands) in the Healthcare and Applications department:</p> <ul style="list-style-type: none"> • Design and realisation of a microfluidic device for creation of monodisperse solutions of microbubbles.
July - August 2007	<p>First-year Internship (technician) at SGS Oil Gas and Chemicals, in le Havre (France):</p> <ul style="list-style-type: none"> • Multi-analysis of petrochemicals products (mostly fuel, FOD, jets, unleaded petrol).

EDUCATION

January - May 2012	Doctoral Program in Management (DPM) in the ENPC School of International Management : 4 weeks of MBA like courses for selected PhD candidates of the Université Paris-Est
2009 -2010	Master of Science "Sensors Measures and Instrumentation" at Université Pierre et Marie Curie (Paris 6) .
2006-2010	Student (3rd to 5th year of higher education) at the ESPCI, Ecole Supérieure de Physique et de Chimie Industrielles de la Ville de Paris , Physics, Chemistry and Biology graduate school, belonging to the top tier French graduate engineering schools, the ParisTech group . Ranked 2nd out of 73 at the competitive entrance national examination. French " Diplôme d'Ingénieur ESPCI ", conferring a "Master of Science in Physics, Chemistry and Biology" degree, obtained in June 2010 .

TECHNICAL AND RESEARCH SKILLS

Porous Media	<p>Geochemistry and thermochemistry of minerals Reactive multiphase flow in porous media (Drying, precipitation, dissolution. . . Poromechanics of saturated and unsaturated media Confined phase transition and crystallization pressure Measurement of intrinsic and relative permeability, capillary pressure Glass beads sintering Mercury Intrusion Porosimetry measurement Fluorescent fluid imaging Wettability determination of rock cores (USBM and Amott method) Rock core preparation (wettability alteration, chemical curing of the surface, aging)</p>
Microfluidics	<p>Design and realization of microfluidic chips</p> <ul style="list-style-type: none"> • Mould drawing • PDMS curing in clean room • Plasma alteration of PDMS chips • Polycarbonate milling
Oil products testing	<p>Sulfur dosing Water content Density Viscosity Resistance to oxidation</p>

TEACHING

2014 - 2015	Mechanics and Physics of Porous Solids at the University of Warsaw (30h)
2010-2013	In charge of practical exercises on mechanics for undergraduate students at Creteil Institute of Technology , department "Physical Measurements"

Peer reviewed articles

Experimental investigation of the influence of supercritical state on the relative permeability of Vosges sandstone - Osselin, Fabbri, Fen-Chong, Pereira, Lassin and Dangla. **2015**- available online - *Compte-Rendu Mécanique*, DOI: 10.1016/j.crme.2015.06.009

Stress from NaCl crystallization by carbon dioxide injection in aquifers - Osselin, Fabbri, Fen-Chong, Dangla, Pereira and Lassin. **2014** - available online - *Environmental Geotechnics*, DOI: 10.1680/envgeo.13.00057

Dependence on injection temperature and on aquifer's petrophysical properties of the local stress applying on the pore wall of a crystallized pore in the context of CO₂ storage in deep saline aquifers - Osselin, Fen-Chong, Fabbri, Lassin, Pereira, Dangla. *The European Physical Journal - Applied Physics* **2013** - 64, DOI: 10.1051/epjap/2013120529

Wettability determination of core samples through visual rock and fluid imaging during fluid injection - Schneider, Osselin, Andrews, Rezgui, Tabeling. *Journal of Petroleum Science and Engineering* **2011**, DOI: 10.1016/j.petrol.2011.05.016

Conference Proceedings

Poromechanics of salt nucleation within an unsaturated reservoir rock - Osselin, Fabbri, Fen-Chong, Pereira and Dangla. **2013** Biot conference proceedings in Vienna, Austria. DOI: 10.1061/9780784412992

Oral Presentations

Experimental study of the influence of Damköhler and Péclet numbers on the dissolution patterns of porous media 7th Interpore Conference May **2015** Padua (Italy)

Thermochemical-based poroelastic modelling of salt crystallization, and a new multi-phase flow experiment: how to assess injectivity evolution in the context of CO₂ storage in deep aquifers International seminar Chaire CTSC December **2014** Paris (France)

Poromechanics of the crystallization of salt during carbon dioxide injection in a deep saline aquifer. International seminar Chaire CTSC 25-27th Mar. **2013** Paris (France)

Modélisation poromécanique de la cristallisation des sels induite par l'injection de dioxyde de carbone en aquifère salin. Colloque franco-espagnol 17-19th Oct. **2012** Orléans (France)

Poromechanics of the crystallization of salt during carbon dioxide injection in a deep saline aquifer. Cryspom III Conference **2012** Troia (Portugal)

Carbon dioxide storage in deep saline aquifers: evolution of the petrophysical properties of the host rock. International seminar Chaire CTSC 24th Nov. **2011** Paris (France)

Posters

Microfluidic experiments of dissolution in a fracture. influence of Damköhler and Péclet numbers, and of the geometry on the dissolution pattern EGU March **2015** Vienna (Austria)

Microfluidic experiments of pattern formation from dissolution in porous media. Gordon Conference "Flow & Transport in Permeable Media" 6-11th July **2014** Bates College (Lewiston, US)

Poromechanics of NaCl nucleation within an unsaturated aquifer rock. Workshop "Strains induced by phase changes in deformable porous solids: what about building materials" 8-9th July **2013** ENPC Champs-sur-Marne (France)

Poromechanics of salts crystallization within an unsaturated reservoir rock. Pore2Field 16-18 Nov. **2011** IFP Energies nouvelles (France)

Crystallization of salt in an aquifer during carbon dioxide injection, a poromechanical study. ALERT Geomaterials workshop **2011** Aussois (France)

LANGUAGE AND COMPUTER SKILLS

Languages	French: mother tongue English Fluent TOEIC 990 in 2009 and 2013 German Working knowledge Polish Notions
Computer skills	Good knowledge in both hardware and software (Office, Autocad, Matlab/Scilab, Origin, Linux, Labview, Latex). Programming in C/C++, HTML/PHP, Java.

OTHER ACTIVITIES

Music	<i>Guitar:</i> 12 years in Le Havre Music Academy: degree concluding non-professional music studies awarded with honours (French <i>Certificat de fin d'études</i>). At least one concert per year organized by the academy. <i>Electric guitar:</i> member of a music band with students from the ESPCI.
Improvisation	2006-2008 member of the ESPCI team and president of the association during the second year. Organization and participation to competitions with other schools.
Exhibition organization	Member of the team for creating and organizing an exhibition about home automation and sustainable development in our homes sponsored by Saint-Gobain: " Ca bouge dans nos maisons ". Exposition held in the Palais de la Découverte in Paris .
Other	Traveling (Europe, China, Mexico, Lapland, Singapore, Malaysia, Indonesia, Sri Lanka, USA, Aruba, India), reading.