

TESSON Stéphane
447 Waverley Street
Menlo Park, CA 94025
United States
Tel. +1 650-655-1647
E-mail: tesson.teva@gmail.com

EDUCATION

- 2013-2016 Ph.D. - Chemistry-Physics and Analytical Chemistry**
University Pierre et Marie Curie – Paris VI
Laboratory of **PH**ysicochimie des **E**lectrolytes, **N**anosystèmes **I**nterfaciau**X** (PHENIX)
Thesis : A polarizable force field to study clays at the molecular scale
- 2011-2013 Master of Sciences and Technologies in Analytical, Physical and Theoretical Chemistry**
University Pierre et Marie Curie – Paris VI
Received with honors
- 2007-2011 License of Sciences, Technologies and Health in Chemistry**
University Paris Diderot – Paris VII
Received with honors
- 2006-2007 Bachelor of Science – Major: Mathematics**
Montaigne High School, Paris 6th

EXPERIENCES

- 2017 Post-doctoral Researcher** (April 2017 – today) :
Reservoir Engineering Research Institute - Palo Alto & University of California Riverside - Riverside (California – United States)
- (i) Modelized kerogen systems at the molecular scale.
 - (ii) Studied the structure of the kerogen systems.
 - (iii) Studied the dynamics of organic compounds through the kerogen systems.
 - (iv) Studied the adsorption and desorption phenomena of organic compounds at the kerogen surface.
 - (v) Scientific mediation: oral communications, writing reports and article.
- Supervisors : Prof. Abbas FIROOZABADI & Prof. Jianzhong WU
- 2015 Junior Consultant** (21 months, January 2015 - September 2016)
Materials Design - Montrouge (Île-de-France - France)
- (i) Modelized clay minerals at the molecular scale.
 - (ii) Reviewed the current marketing material on MedeA[®] capabilities with clay minerals.
 - (iii) Reviewed and updating the clay minerals structures in MedeA[®].
 - (iv) Developed the automatic assignment parameters of clay minerals in MedeA[®].
 - (v) Tested the implementation of ClayFF and TraPPE in MedeA[®].
- Supervisors: Ph.D. Philippe UNGERER & Ph.D. Marianna YIANNOURAKOU
- 2013 Ph.D. Candidate** (36 months, October 2013 - September 2016)
PHENIX Laboratory - Paris (Île-de-France - France)
- (i) Modelized clay minerals at the molecular scale.
 - (ii) Parametrized a new model: a polarizable force field.
 - (iii) Studied the structure of clay minerals.
 - (iv) Studied the retention, the adsorption and the transport mechanisms of water molecules and ions at the mineral surface.
 - (v) Scientific mediation: oral and poster communications, writing reports and articles.
- Thesis Supervisor: Prof. Virginie MARRY
Secondary supervisors: Ph.D. Benjamin ROTENBERG & Prof. Mathieu SALANNE

Master 2 Internship (6 months, February - August)
LPCM - Sherbrooke (Quebec - Canada)
Atomistic simulation of liquid crystal by molecular dynamics.
Supervisor: Prof. Armand SOLDERA

2012 Master 1 Internship (5 months, March - July)
CEA/DAM/DIF - Bruyères-le-Châtel (Ile-de-France - France)
Simulation of the behavior of rigid molecules under impact by classical molecular dynamics.
Supervisor: Ph.D. Nicolas PINEAU

2011 License 3 Internship (3 months, April - June)
ITODYS - Paris (Île-de-France - France)
Theoretical study of structural and optical properties of hybrid systems: gold cluster/photochromic molecule.
Supervisor : Ph.D. Aurélie PERRIER

2010 License 2 Internship (5 months, February - June)
ITODYS - Paris (Île-de-France - France)
(i) *Discovery of the calculation based on quantum chemistry: the study of thermodynamic and optical properties of photochromic molecules.*
(ii) *Studies of spectroscopic properties of different photochromic molecules coupling molecular dynamic/density functional theory.*
Supervisor : Ph.D. Aurélie PERRIER

PUBLICATIONS

- [6] Wu T., Zhao H., **Tesson S.**, Firoozabadi A., *Absolute adsorption and swelling effect of light hydrocarbons and carbon dioxide in shale and isolated kerogen. (in prep.)*
- [5] **Tesson S.**, Salanne M., Rotenberg B., Ferrage E., Marry V., *Classical Polarizable Force Field to Study Hydrated Charged Clays and Zeolites: Structure and Dynamics of Ions and Water Molecules. (in prep.)*
- [4] **Tesson S.**, Louisfrema W., Salanne M., Anne B., Rotenberg B., Marry V., *Classical Polarizable Force Field to Study Dry Charged Clays and Zeolites.* Journal of Physical Chemistry C, **2017**, 121(18), 9833-9846.
- [3] Porzio F., Cuierrier E., Wespier C., **Tesson S.**, Underhill R. S., Soldera A., *Mechanical Equilibrium, a Prerequisite to unveil auxetic properties in molecular compounds.* Molecular Simulation, **2017**, 43 (3), 169-175.
- [2] **Tesson S.**, Salanne M., Rotenberg B., Tazi S., Marry V., *Classical Polarizable Force Field for Clays: Pyrophyllite and Talc.* Journal of Physical Chemistry C, **2016**, 120 (7), 3749-3758
- [1] Perrier A., **Tesson S.**, Jacquemin D., Maurel F., *On the photochromic properties dithienylethenes grafted on gold clusters.* Computational and Theoretical Chemistry, **2012**, 990 : 167-176.

COMMUNICATIONS (P : POSTER & T : TALK PRESENTATION)

- 2017** Marry V., **Tesson S.**, Louisfrema W., Salanne M., Rotenberg B., Boutin A., Ferrage E., *A classical polarizable force field for the structure and dynamics of water and cations in clays and zeolites*, 16th International Clay Conference (ICC), Granada, Spain, 17-21 July. (T)
- 2016** **Tesson S.**, Salanne M., Tazi S., Rotenberg B., Marry V., *Un champ de force polarisable pour étudier la rétention de l'eau et des ions à la surface d'argiles à l'échelle moléculaire*, 14^{ème} colloque du Groupe Français des Argiles (GFA), Poitiers, France, 18-20 May. (T)
Tesson S., Salanne M., Tazi S., Rotenberg B., Marry V., *A polarizable force field to study cations and water molecules dynamics in montmorillonites.* 8th International Conference on Porous Media and Annual Meeting, Cincinnati, Ohio, United States, 9-12 May. (T)

Tesson S., Salanne M., Tazi S., Rotenberg B., Dubois E., Michot L., Rochet F., Gallet J.-J., Bournel F., Tissot H., Boucly A., Marry V., *Un champ de force polarisable pour étudier la rétention de l'eau et des ions à la surface d'argiles à l'échelle moléculaire*. 5^{èmes} Journées de l'Association Française de l'Adsorption, Paris, France, 4-5 February. (T)

Marry V., **Tesson S.**, Salanne M., Rotenberg B., *Etudes de différentes argiles par dynamiques moléculaire via un champ de force polarisable*. Journée Chimie et Environnement du Labex MiChem, Paris, France, 5 January. (T)

2015 **Tesson S.**, Salanne M., Tazi S., Rotenberg B., Marry V., *Etudes des argiles à l'échelle moléculaire avec un Champ de Force Polarizable*. 16^{ème} Journée Francophones des Jeunes Physico-Chimistes, Playa de Aro-Gérone, Spain, 19-23 October. (T)

Boucly A., Bournel F., Dubois E., Gallet J.-J., Koishi A., Marry V., Michot L., **Tesson S.**, Rochet F., *Etude par NAP-XPS du gonflement d'argiles hectorites et saponites hydroxylées*. 16^{ème} Journée Francophones des Jeunes Physico-Chimistes, Playa de Aro-Gérone, Spain, 19-23 October. (T)

Tesson S., Salanne M., Tazi S., Rotenberg B., Marry V., *Studies of cations and water molecules dynamics in Montmorillonites with a Polarizable Force Field*. Euroclay 2015, Edinburgh, Scotland, 5-10 July. (T)

Tesson S., Salanne M., Tazi S., Rotenberg B., Marry V., *Clays structure and transport in clays with a Polarizable Force Field*. Symposium International MiChem, 2015, Paris, France, 25-26 June. (P)

Boucly A., Bournel F., Dubois E., Gallet J.-J., Koishi A., Marry V., Michot L., **Tesson S.**, Rochet F., *Swelling of hydroxylated hectorite and saponite clays monitored by Near Ambient Pressure-XPS*. Symposium International MiChem, 2015, Paris, France, 25-26 June. (P)

2014 **Tesson S.**, Salanne M., Tazi S., Rotenberg B., Marry V., *Un Champ de Force Polarizable pour les argiles*. Matériaux 2014, Montpellier, France, 24-28 November. (T)

Tesson S., Salanne M., Tazi S., Rotenberg B., Marry V., *Polarizable Force Field for the study of transport in clays at the molecular scale*. 4th Annual NBIA Workshop On ESS Science: Surface Interactions, Copenhagen, Denmark, 10-14 November. (Flash T & P)

Tesson S., Salanne M., Tazi S., Rotenberg B., Marry V., *Champ de Force Polarizable pour l'étude du transport dans les argiles à l'échelle moléculaire*. 24^e Réunion des Sciences de la Terre, Pau, France, 27-31 October. (T)

Tesson S., Salanne M., Tazi S., Rotenberg B., Marry V., *Development of a Polarizable Force Field for clays*. 248th ACS National Meeting & Exposition, San Francisco, CA, United States, 10-14 August. (T invited)

Rotenberg B., Tazi S., Salanne M., Marry V., **Tesson S.**, Sulpizi M., Sprik M., *Interfacial properties of clay minerals : Surface acidity and polarizable force field parametrization from ab-initio simulations*. 247th ACS National Meeting & Exposition, Dallas, TX, United States, 16-20 March. (T)

2013 **Tesson S.**, Porzio F., Soldera A., *Simulation tout atome des phases smectiques C et A d'une famille d'isomères structuraux : 2PhP1, 5PhP1 et 6PhPz*. 16^{ème} Colloque sur les Systèmes Anisotropes Auto-organisés - CFCL13, Collège Doctoral Européen, Strasbourg, France, 3-6 September. (P)

Porzio F., **Tesson S.**, Soldera A., *Peut-on prédire la présence de la phase SmC dans le polymorphisme liquide cristallin d'une molécule?* 16^{ème} Colloque sur les Systèmes Anisotropes Auto-organisés - CFCL13, Collège Doctoral Européen, Strasbourg, France, 3-6 September. (T)

2012 **Perrier A.**, Fihey A., **Tesson S.**, Jacquemin D., Maurel F., *Can photochromic molecules anchored on gold nanoparticles act as nano-hybrid switches?* Second edition of the International Conference on Advanced Materials Modelling (ICAMM), Nantes University, France, 13-16 June. (T)

SKILLS

Computing Operating systems: Windows, Linux and Mac.
Molecular modeling & calculation softwares: Gaussian, LAMMPS, CP2K, Materials Design[®], Materials Studio[®], GaussView, Molden, Molekel, ChemSketch, VMD and XMakemol.
Programming: C and KSH.

Languages Office automation: MS Office, OpenOffice, Internet (IT and Internet Certificate - Level 1)
French (native) ; English (spoken and written) ; Spanish (notions)

INTERESTS

Music Certificate of Musical Studies (3rd cycle music conservatory)

Licenses Driving license (type B), Boating license (recreational sea waters permit: basic & extended)

Travel Canada, United States and Europe

Sport Table tennis, Badminton and Sail