

MAXIME LETELLIER

06/21/1988 at CHERBOURG (FRANCE)
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Since November 2016: **Research Fellow**
Center for Multidimensional Carbon Materials - Institute for Basic Science
Ulsan (REPUBLIC OF KOREA)

QUALIFICATIONS AND EDUCATION

- **2016 Qualified to be assistant professor in France** in section 33 – Materials chemistry
- **2012 – 2015** Institut Jean Lamour - UMR CNRS 7198, Epinal (France)
PhD in solid-state chemistry at the University of Lorraine

Thesis title: Optimisation of carbon foams by the study and the modelling of their physical properties

Formulation of cellular or reticulated carbon foams with independently controlled structural parameters; full experimental characterisation and modelling of their mechanical, acoustical, thermal and electromagnetic properties in order to provide the relations between each structural parameter and the physical properties.

International collaborations with especially:

- University of Toronto (Canada), funded by the FCRF (French-Canada Research Funds) which allowed 2 stays (14 + 10 days).
- University of Vilnius (Lithuania), with a PHC Gilibert project which allowed 2 stays (10 + 7 days).
- Belarusian State University of Minsk (Belarus).

- 2009 – 2012 International institute of wood science and technology (ESB), Nantes (France),
Master of materials engineering
- 2011 – 2012 Semester at School of Wood Science and Timber Engineering (ENSTIB), Epinal (France) with the specialization « natural fibrous materials »
- 2010 – 2011 Semester at the University of Chiayi (Taiwan)
- 2010 – 2011 Preparatory classes for entrance examinations in engineering schools with specialization in physics/chemistry in Caen (France)
- 2006 Scientific Bachelor Degree (Baccalaureate S)

COMMUNICATION

6 international publications + 4 in review or being drafted

3 conference proceedings

10 oral communications including 6 internationals and 1 invited

2 posters including 1 international

Award from the French Carbon Group (Société Francophone d'Etude des Carbones: SFEC) in 2016 received at the conference Carbon 2016 at Penn State University (USA)

PROFESSIONAL EXPERIENCES

▪ RESEARCH :

Contractual researcher CNRS (02 – 07/2016)

Institut Jean Lamour - UMR CNRS 7198 – University of Lorraine at Epinal (France)

Continuation and valorisation of the works and projects of the PhD thesis

▪ TEACHING :

Practical classes of Thermochemistry for engineer students. 80H during 2013-2015

Joint supervision of two master's degree trainees in 2014 (mechanical analysis and hydrophobisation of bio-based foams)

▪ COLLECTIVE RESPONSABILITIES :

Setting up, maintenance and user training for thermal characterisation analysers (TG-DSC coupled with a mass spectrometer, Thermal diffusivity by Laser Flash, TMA).

▪ OTHER EXPERIENCES :

R&D engineer internship of 6 months in 2012 between the company « Fibres Recherche Développement » of Troyes (France) and the Brittany Materials Engineering Lab (Laboratoire d'Ingénierie des Matériaux de Bretagne: LIMATB) in Lorient (France)

Study of the use of flax and hemp fibres in fibre-reinforced concrete. This work was a first approach for the company and was mainly focused on the behaviour (chemical, mechanical) and processing of the fibers in the mineral matrix in relation with their nature and morphology. Confidential work – no publication.

Research internship of 6 weeks in 2011 Edinburgh Napier University (Scotland) in the « Forest Products Research Institute » laboratory

Characterization of a PEG-based preservation treatment for poplar wood (dimensional changes, leaching, mechanical properties). Confidential work – no publication.

QSE management internship of 6 weeks at the sawmill Gascogne Wood Products in Escource (France)

Development of tasks and quality monitoring sheets for different workplaces inside the sawmill.

Kayak instructor during the summer 2007 and 2008 in sports centres (France)

SPECIFIC SKILLS

LANGUAGES

English, working proficiency (writing and oral)

German, beginner

Chinese (mandarin), basics

COMPUTER LITERACY SKILLS

Microsoft Office, Origin, ImageJ, Fiji, Imorph, Aphé lion, Top Solid, Simapro
Basics of Matlab, Maple and Abaqus

EXPERIMENTAL

Formulation :

Polymerization, foaming and sol-gel processes (organic and carbonaceous materials)
Composites formulation with emphasis on fibre-reinforced concrete
Materials treatments (preservation or functionalization)

Characterisation :

Extraction processes (soxhlets, ...) and pyrolysis
TGA-DSC, spectrometry (UV, IR, mass), chromatography, elemental analysis, pycnometry
Scanning electron microscopy, X-Ray microtomography and images analysis
Thermal: Laser Flash, Hot Disk
Mechanical: Universal testing machine, TMA
Acoustic: Impedance tube, air flow meter
Electromagnetic: LRC meter (mHz-MHz), wave guides (GHz), THz and IR spectrometers

OTHERS

Personal first-aid diploma in 2010 and First-aid worker training in 2012
Driving licence in 2006
Sea Kayak instructor diploma in 2005

HOBBIES

Music (guitar and traditional folk instruments), sports (kayaking, climbing, running, swimming, hiking, sailing), travelling

DETAIL OF SCIENTIF COMMUNICATIONS

PEER-REVIEWED PAPERS IN A-RANK JOURNALS

1. **Letellier M**, Szczurek A, Basso M-C, Pizzi A, Fierro V, Ferry O, Celzard A
Physical properties of vitreous carbon foams. Part I: Preparation and structural characterisation of model cellular vitreous carbon foams
Submitted soon to *Carbon* (2016)
2. Delgado-Sánchez C, **Letellier M**, Fierro V, Chapuis H, Gérardin C, Pizzi A, Celzard A
Hydrophobisation of tannin-based foams by covalent grafting of silanes
Accepted in *Industrial Crops and Products* (2016)
3. Bychanok D, Plyushch, A, Piasotski K, Paddubskaya A, Voronovich S, Kuzhir P, Baturkin S, Klochkov A, Korovin E, **Letellier M**, Schaefer S, Szczurek A, Fierro V, Celzard A
Electromagnetic properties of polyurethane template-based carbon foams in Ka-band
Physica Scripta **90(9)** (2015) 094019-1-6
4. **Letellier M**, Macutkevic J, Paddubskaya A, Klochkov A, Kuzhir P, Banys J, Fierro V, Celzard A
Microwave Dielectric Properties of Tannin-Based Carbon Foams
Ferroelectrics **479(1)** (2015) 119-26

5. **Letellier M**, Macutkevic J, Paddubskaya, Plyushch A, Ivanov M, Banys J, Pizzi A, Fierro V, Celzard A
Tannin-based carbon foams for electromagnetic applications
IEEE Transactions on Electromagnetic Compatibility **57(5)** (2015) 989-95
6. **Letellier M**, Fierro V, Pizzi A, Celzard A
Tortuosity studies of cellular vitreous carbon foams
Carbon **80** (2014) 193-202

4 publications corresponding to the thesis work are currently being finalised:

- a. **Letellier M**, Delgado-Sánchez C, Khelifa M, Fierro V, Celzard A
Physical properties of vitreous carbon foams. Part II: Mechanical characterisation of model vitreous carbon foams
Submitted to *Carbon* (2016)
- b. **Letellier M**, Ghaffari Mosanenzadeh S, Naguib H, Fierro V, Celzard A
Physical properties of vitreous carbon foams. Part III: Acoustical characterisation of model vitreous carbon foams
Submitted soon to *Carbon* (2016)
- c. **Letellier M**, Delgado-Sánchez C, Fierro V, Celzard A
Physical properties of vitreous carbon foams. Part IV: Thermal characterisation of model vitreous carbon foams
Submitted soon to *Carbon* (2016)
- d. **Letellier M**, Macutkevic J, Fierro V, Celzard A
Physical properties of vitreous carbon foams. Part V: Electromagnetic characterisation of model vitreous carbon foams
Submitted soon to *Carbon* (2016)

ORAL PRESENTATIONS

1. Delgado-Sánchez C, **Letellier M**, Fierro V, Chapuis H, Gérardin C, Pizzi A, Celzard A
Hydrophobisation of tannin-based foams by covalent grafting of silanes
Journée d'Etude des Milieu Poreux JEMP. Biarritz, France, 12-14 October 2016
2. **Letellier M**, Macutkevic J, Bychanok D, Kuzhir P, Delgado-Sanchez C, Naguib H, Ghaffari Mosanenzadeh S, Fierro V, Celzard A
Modelling the physical properties of glasslike carbon foams
Carbon 2016. State College, United-States, 10-15 July 2016
3. **Letellier M**, Macutkevic J, Bychanok D, Kuzhir P, Delgado-Sanchez C, Naguib H, Ghaffari Mosanenzadeh S, Fierro V, Celzard A
Matériaux alvéolaires modèles en carbone vitreux pour la science des matériaux et les sciences de l'ingénieur
Colloque Francophone du Carbone SFEC 2016. Carqueiranne, France, 17-20 may 2016
Invited lecture

4. Vignoles G, Ortona A, Vicente J, Panerai F, **Letellier M**
Calcul de conductivités thermiques effectives de milieux poreux opaques/transparents à partir de tomographies
Day SFT-FIC. Paris, France, 30 March 2016
5. Khelifa M, Fierro V, Celzard A, **Letellier M**, Delgado Sanchez C
FE analysis of carbon foam under multiple compressive loading
18th International Conference on Composite Structure (ICCS18). Lisbon, Portugal, 15-18 June 2015
6. Bychanok D, Plyushch A, Kuzhir P, Maksimenko S, Korovin E, Suslyayev V, **Letellier M**, Schaefer S, Szczurek A, Fierro V, Celzard A
Polyurethane template-based carbon foams in Ka-band
4th Russia-Japan-USA Symposium on Fundamental and Applied Problems of Terahertz (THz) Devices and Technologies (RJUS 2015). Chernogolovka, Russia, 9-12 June 2015
7. **Letellier M**, Fierro V, Celzard A
Etude des propriétés physiques de mousses de carbone cellulaires biosourcées *Conference of the doctoral school EMMA 2015*. Nancy, France, 7 May 2015
8. Bychanok D, Plyushch A, Kuzhir P, Macutkevic J, **Letellier M**, Szczurek A, Fierro V, Celzard A
Tannin-based carbon foams in microwave frequency range: toward fully carbon photonic crystal
IEEE COMCAS 2015. Tel Aviv, Israel, 2-4 November 2015
9. Macutkevic J, Paddubskaya A, Kuzhir P, Maksimenko S, **Letellier M**, Fierro V, Celzard A
Broadband dielectric properties of carbon foams
European Conference on Application of Polar Dielectrics 2014 (ECAPD 2014). Vilnius, Lithuania, 7-11 July 2014
10. **Letellier M**, Macutkevic J, Paddubskaya A, Plyushch A, Kuzhir P, Ivanov M, Banys J, Pizzi A, Fierro V, Celzard A
Electromagnetics of Tannin-based Carbon Foams
International Symposium RCBJSF - FM&NT. Riga, Latvia, 29 September – 2 October 2014

POSTERS

1. **Letellier M**, Macutkevic J, Ivanov M, Bychanok D, Plyushch A, Piasotski K, Paddubskaya A, Voronovich S, Kuzhir P, Korovin E, Schaefer S, Szczurek A, Fierro V, Celzard A
Electromagnetic properties of vitreous carbon foams
Carbon 2015. Dresden, Germany, 12-17 July 2015
2. Besserer A, **Letellier M**, Fredon E, Antoine ML, Perrin C, Lallemand J, Rose C, Trouy MC
Durabilité de bois de chêne archéologique. Etude de pieux de soutènement de digue de Somme
Scientific days of the GDR 3544 wood sciences. Nancy, France, 12-14 November 2014