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RESEARCH SKILLS



CARBON MATERIALS

Thermal treatments
 Chemical Vapor Deposition
 Surface chemistry
 Hard carbons
 Activated carbons



CARBON FOR ENERGY STORAGE
 Aqueous supercapacitors

SCIENTIFIC TECHNICAL SKILLS

TPD-MS	●	●	●	●	●
HE PYCNOMETRY	●	●	●	●	●
POTENTIOSTAT	●	●	●	●	●
QUARTZ	●	●	●	●	●
MICROBALANCE	●	●	●	●	●
GAS ADSORPTION	●	●	●	●	●
THERMAL TREATMENTS	●	●	●	●	●



UV-VISIBLE RAMAN
 Horiba Certificate



VACUUM TECHNOLOGY
 French Vacuum Society Certificate

INFORMATICS SKILLS

OFFICE PACK	●	●	●	●	●
VISUAL BASIC	●	●	●	●	●
ORIGINLAB	●	●	●	●	●
EC-LAB Potentiostat	●	●	●	●	●
LABSPEC Raman	●	●	●	●	●



ORIGINLAB
 RITTME Certificate

LANGUAGES

- FRENCH – native language
- ENGLISH – C1 (TOEIC 2015 : 915/990)
- SPANISH – B1

OTHER

IS2M GENDER EQUALITY REPRESENTATIVE

Bénédicte RÉTY

CNRS Chemical Engineer

Mulhouse Materials Science Institute (IS2M)

French Research Network on Electrochemical Energy Storage (RS2E)

CAREER

01/2017
 -to date

● Chemical Engineer– Carbon and hybrid materials group IS2M, UMR CNRS UHA, Mulhouse, France

- Research work within the RS2E Network
- Students technical support and training
- Equipment and analytical procedures development
 - High vacuum Temperature Programed Desorption with Mass Spectroscopy (TPD-MS)
 - Automated thermal treatments under controlled atmosphere
 - Temperature controlled UV-visible Raman

09/2015
 -12/2016

● Chemical Engineer–R&D Polymers and coatings Synthron, Protex International, Auzouer en Touraine, France

- Project monitoring and technological survey
- Plant recipe improvement and scale-up support

02/2015
 -07/2016

● Master internship

« Fast drying binder development for traffic pain application »
 Synthron, Protex International, Auzouer en Touraine, France

- Polymerizations optimization and polymer characterization
- Paint formulations and hardness, drying, gloss, wettability tests

09/2013
 -08/2014

● Chemical engineer internship

«Study of process variables and scale-up support »
 Trinseo, Process Research group, Rheinmuenster, Germany

- Optimization of emulsion polymerizations
- Mechanical properties improvement – adhesion, elongation at break, tensile strength

05/2013
 -06/2013

● R&D Internship

«Optimization of sol-gel metal-oxides photopolymerizations »
 IS2M, UMR CNRS UHA, Mulhouse, France

- Structuration using UV interferometric lithography
- Atomic Force Microscopy

04/2011
 -07/2011

● Bachelor internship

«Functionnalization of carbon nanotubes»
 CEA, Saclay, France

- Chemical Vapor Deposition (CVD) synthesis/functionalization
- Scanning Electron Microscopy

EDUCATION

2015

● Chemical Engineer Diploma – Materials and polymers National Chemistry Engineering College of Mulhouse, France

2015

● Master's degree– Materials and nanoscience University of Haute-Alsace, France

2011

● Technical University Diploma– Chemistry University of Orléans, France

SELECTED ARTICLES

● Y. Liu, B. Réty, C. Matei Ghimbeu, B. Soucaze-Guillous, P.-L. Taberna, and P. Simon, "Understanding ageing mechanisms of porous carbons in non-aqueous electrolytes for supercapacitors applications," *Journal of Power Sources*, vol. 434, p. 226734, Sep. 2019

● C. Matei Ghimbeu, B. Zhang, A. Martinez de Yuso, B. Réty, and J.-M. Tarascon, "Valorizing low cost and renewable lignin as hard carbon for Na-ion batteries: Impact of lignin grade," *Carbon*, vol. 153, pp. 634–647, Nov. 2019