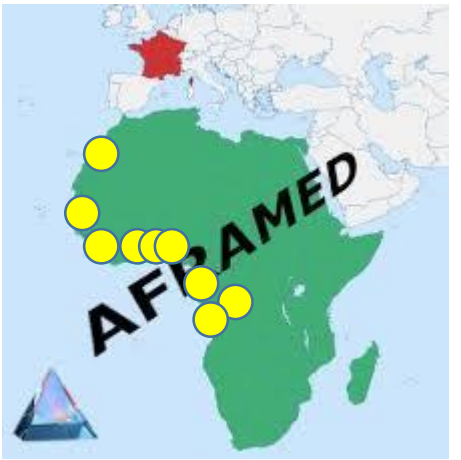
Florence Porcher
DREAM Instrument Scientist

Studies, Employment & Experience

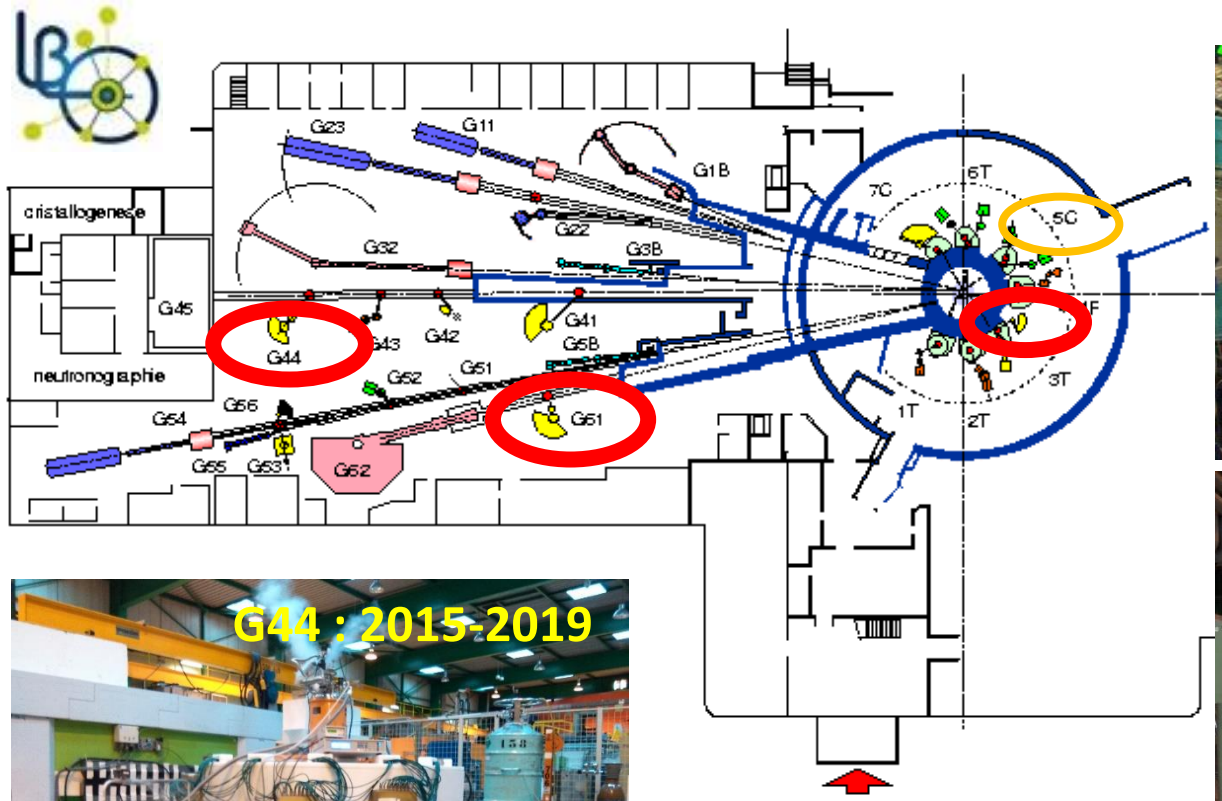
- **Graduate & Postgraduate Studies: Fundamental & Experimental Physics (Paris)**
- **PhD in Material Sciences/Crystallography (1995-1998, Nancy)**
- **Habilitation in Physics/Crystallography (2012)**

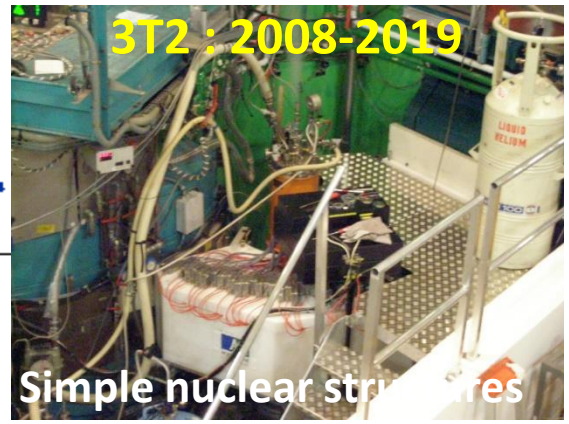
- **Junior Professor at Lorraine University (1999 – 2008 (2024))**
- **CEA Scientist/research dir. at LLB (2008-), on leave**
- **Project Scientist for DREAM (2023-2024)**
- **Lead Instrument Scientist (2024-)**

- ***Dissemination, Crystallography in Africa***



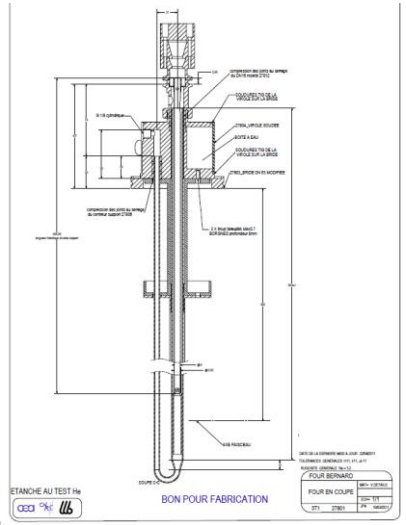
Experience as instrument scientist at LLB-Orphée





Design, Installation, Commissioning
Control software / Data corrections

Sample environments



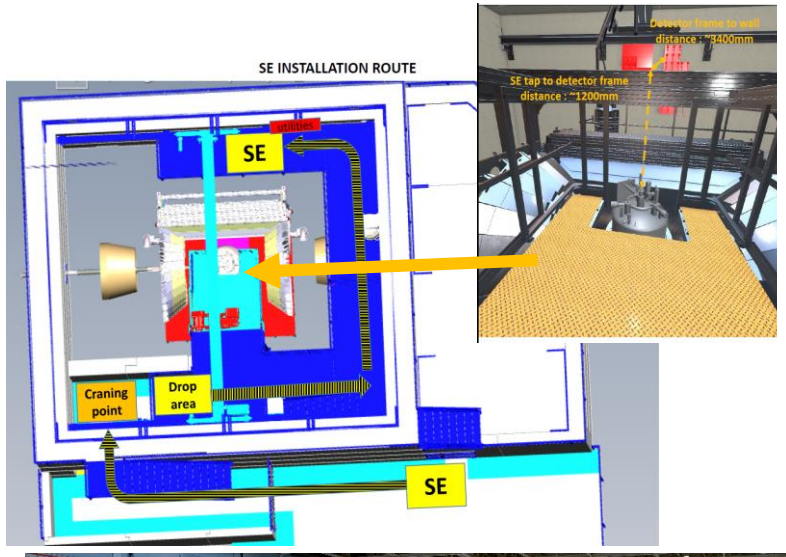
French In-kind contribution to DREAM

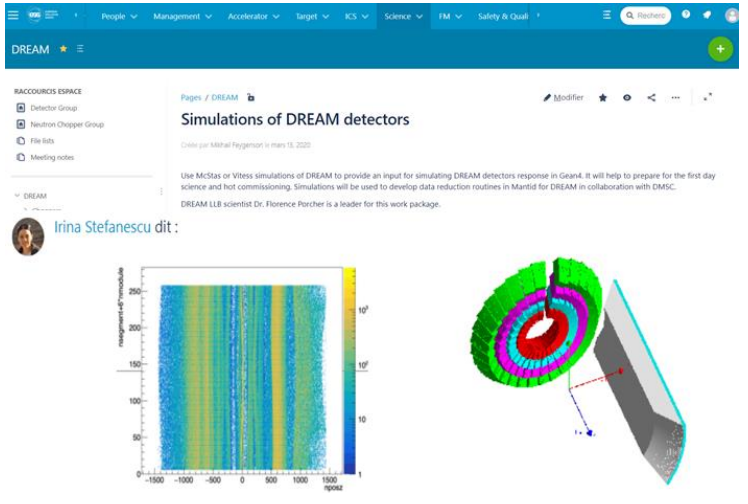
In-kind project: 76% FZJ 20%LLB 4% ESS

Lead scientist
for the French contribution

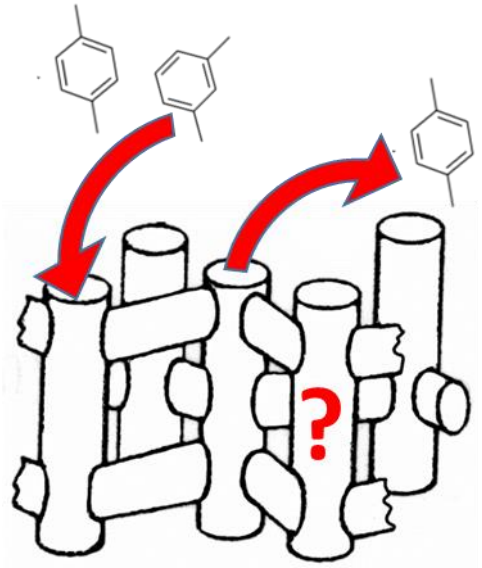
- Cave + Infrastructure
- Sample support
- Sample environment

Sample environnement
Data reduction

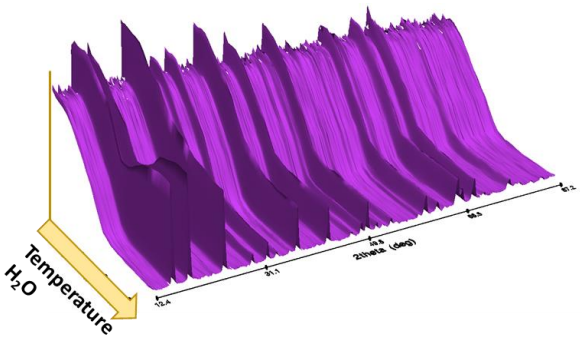




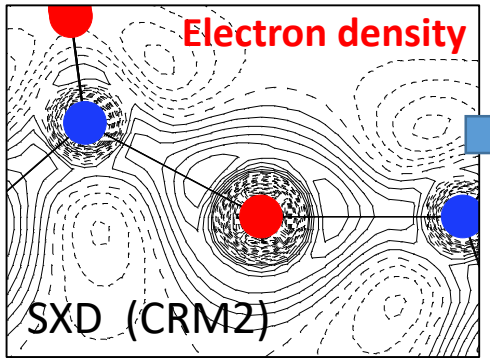
Initial research activity : Crystallography of oxides and zeolites



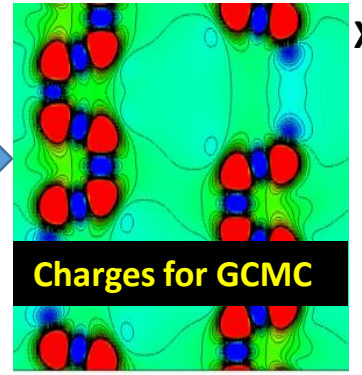
Structural crystallography



« Quantum » crystallography »



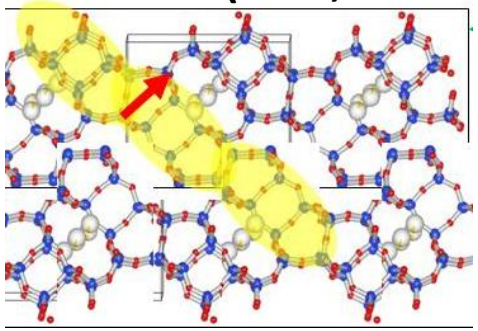
EP

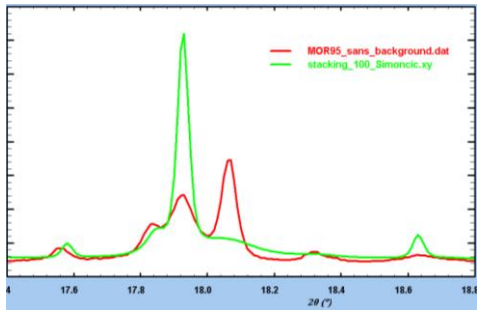


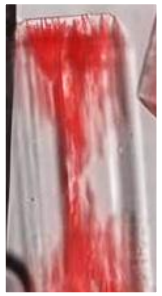
X-n refinement
-
Charge/(Spin) density

CRM² Cristallographie, Résonance Magnétique et Modélisations

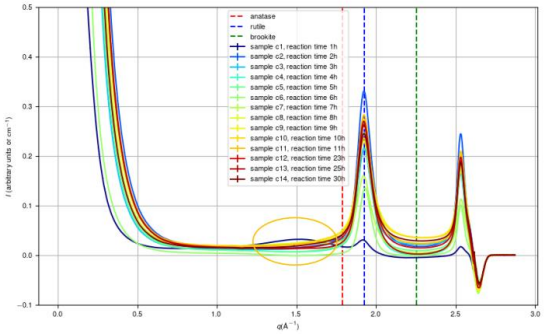
Defects (local, stacking faults, twinning, epitaxy)

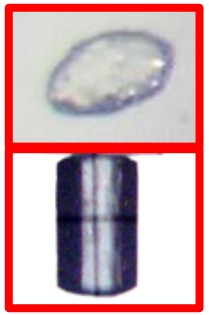






Particle shape. conditionning

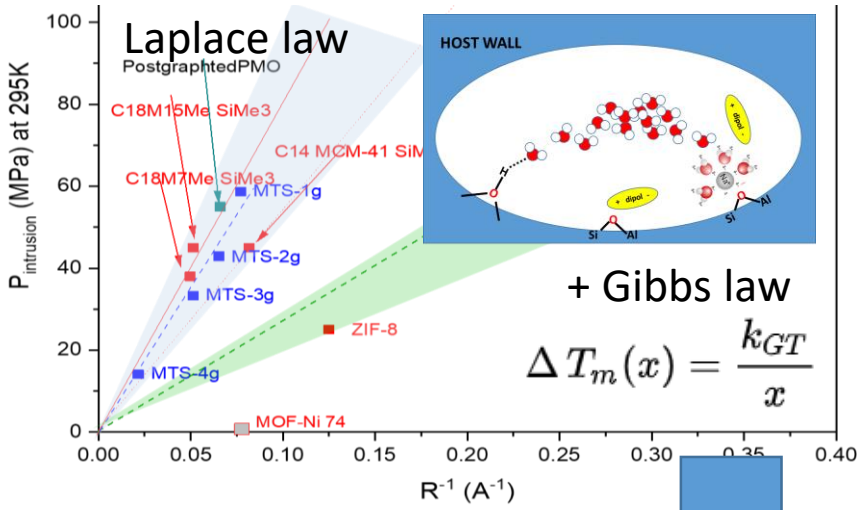


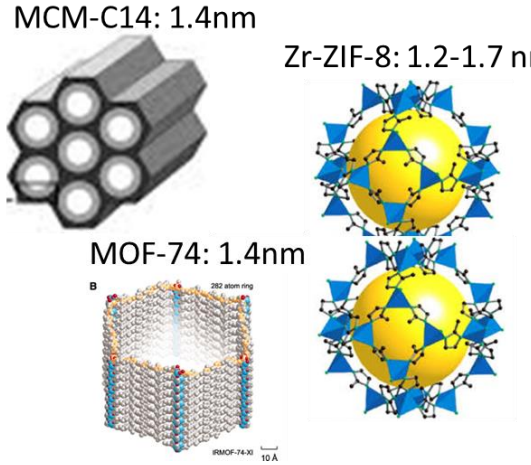


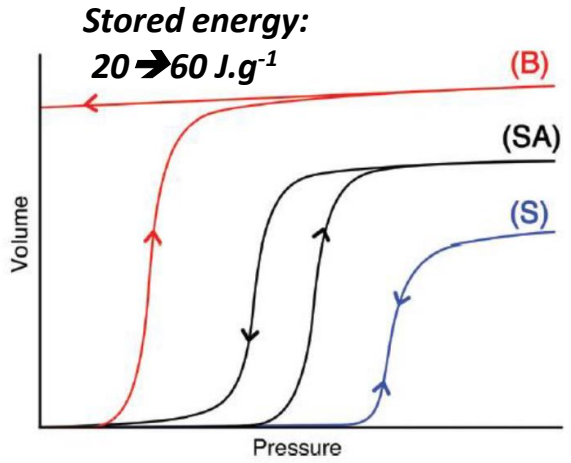
Sorption kinetics
Crystallization

Complementary techniques: microscopy, TGA/DSC, UV-Vis. EXAFS, (Gas adsorption, NMR…)

On-going research: (guest@nanoporous) systems

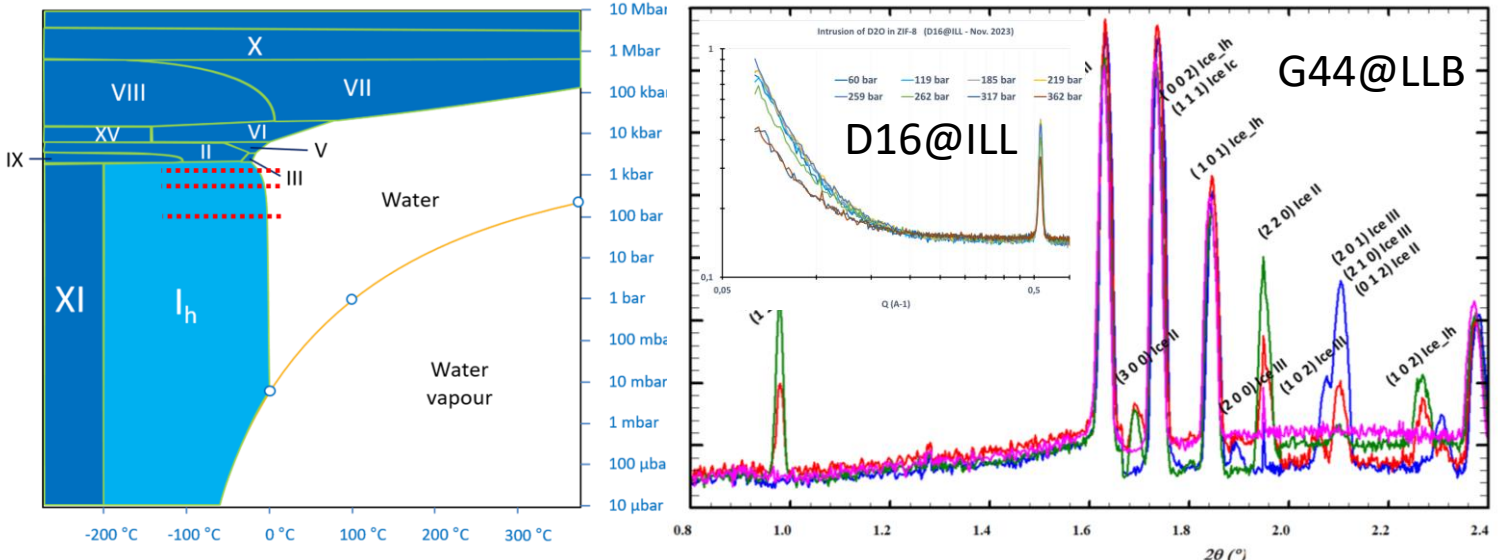






C. Alba-Simionesco, O. Osta & T. Marescot

Confined D_2O : surfusion, exotic Ice forms

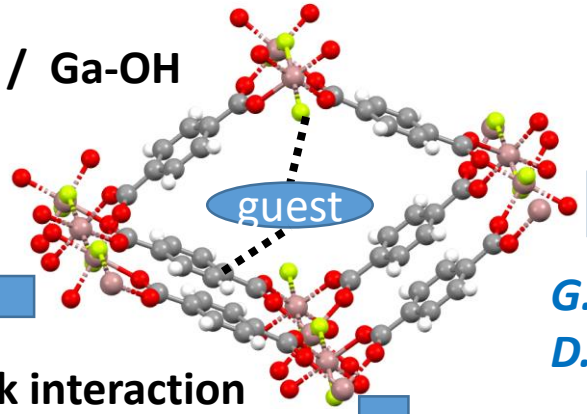


+ Enhanced solubility of salts
+ Enhanced diffusion/mobility

+ New solid phases

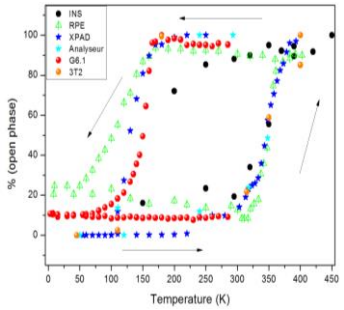
On-going project: (guest@nanoporous) systems

Al-O / Ga-OH



Weak interaction

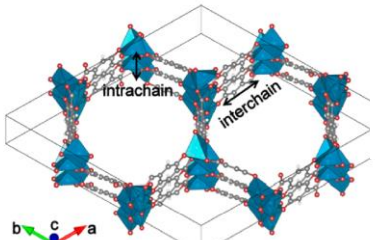
M-bonding, T ➔ Amorphisation

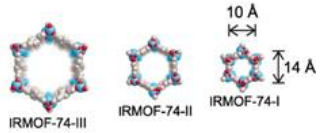


G. Chaplais
D. Foucher

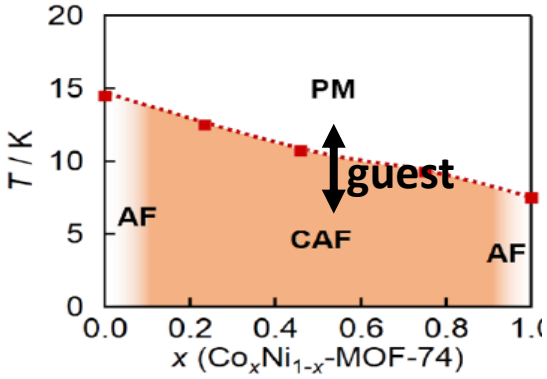
Liquid/Glass MOFs ?

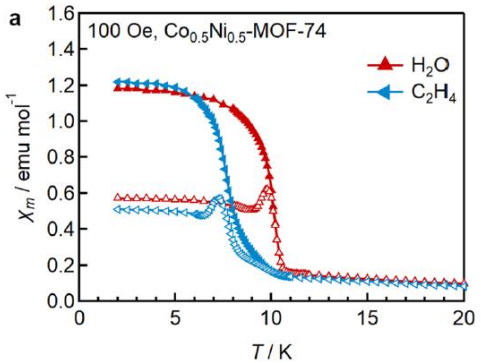
Tune Mag. Structure =f (M, guest)





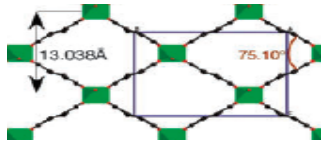
MOF-74-X (X = 1, 2, 3)
1rst synthesis in July (M. Hartl)

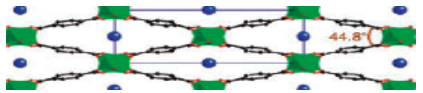


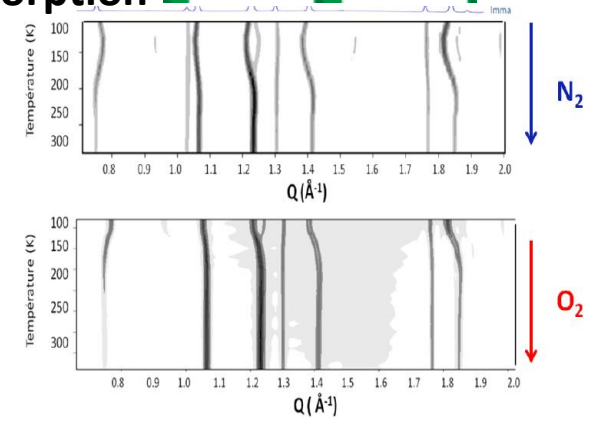


Mukoyoshi et al. Inorg. Chem. 2022, 61, 7226−7230

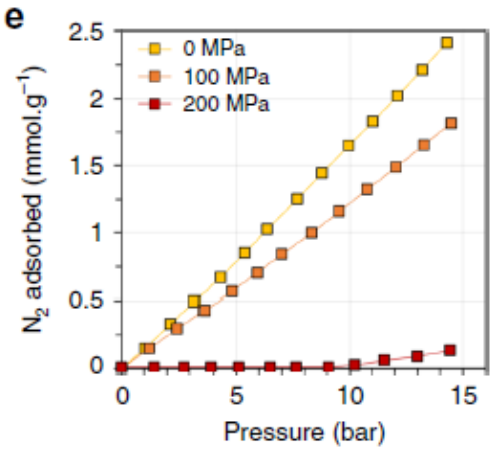
Pressure control of adsorption







Thesis D. Foucher



V. Coulet