

UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY
COURSE SYLLABUS
WINTER 20191. **Course: CHEMISTRY 629-31, Metal-Organic Frameworks**

LEC	DAYS	TIME	ROOM	PROFESSOR	OFFICE	EMAIL	OFFICE HOURS
L01	TR	14:00-15:15	ST 027	Dr. G. Shimizu	SB 403	gshimizu@ucalgary.ca	By appt.

To avoid IT problems, it is recommended that the students use their U of C account for all course correspondence. Please use "CHEM 629 inquiry" as the Subject of your e-mail.

Departmental Office: Room SA 229, Tel: (403) 220-5341, e-mail: uginfo@chem.ucalgary.ca

2. **Course Description: Lectures:** A cross section of industrially relevant chemicals and processes will be presented. These will be discussed from the perspective of precursors (availability, cost), their products and uses, efficiency (catalysis, scalability) and sustainability (environmental impact, geopolitical factors).

3. **Recommended Textbook:** There is no required text for this course.

4. **Topics Covered:**

Potential Applications of MOFs
Reticular Chemistry
Synthesis of MOFs including morphology control
X-ray diffraction
Gas adsorption
Thermogravimetry
Electron microscopy
Swing adsorption methods
Case Studies of Gas adsorption in MOFs
Gas Storage in MOFs
Water stability of MOFs

Department Approval _____ Approved by Department Head _____ Date _____ January 8, 2019 _____