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# MMXene

## Course

**March 10<sup>th</sup> - March 14<sup>th</sup>, 2025**

**10:00 AM - 3:00 PM (EST)**

# MXene Course Program

Day 1 - March 10th	Instructor	Time (EST)
<b><i>Introduction to Course and MXene Synthesis</i></b>	Prof. Yury Gogotsi	10:00 - 10:30
Fundamentals of Etching/Delamination	Dr. Ben Davis	10:30 - 11:30
Synthesis Best Practices	Lucy Plant	11:30 - 12:00
<b>60-Minute Break</b>		
Demonstration of Etching/Delamination (Synthesis of Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> )	Deniz Cakir	1:00 - 1:45
Synthesis of Other MXenes Beyond Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub>	Benj Chacon	1:45 - 2:30
Alternative Etching and Delamination Techniques for MXene Synthesis	Teng Zhang	2:30 - 3:00
Day 2 - March 11th	Instructor	Time (EST)
Introduction to MXene Processing: Solutions, Size Selection, and Stability	Jamie Fitzpatrick	10:00 - 11:45
<b>60-Minute Break</b>		
Thin Films Processing	Dr. Changhoon Park	12:45 - 1:45
MXene Processing - From Fibers to Textiles	Tetiana Parker	1:45-2:30
<b><i>Next Days Highlights - Introduction to MXene Characterization &amp; Applications</i></b>	Prof. Yury Gogotsi	2:30 - 3:00

# MXene Course Program

Day 3 - March 12th	Instructor	Time (EST)
X-ray Diffraction (XRD) Characterization of MAX Phases and MXene	Dr. Hyunho Kim	10:00 - 11:00
Electron Microscopy (SEM and TEM) of MXenes	Bitan Soltan Mohammadlou (SEM), Dr. Hyunho Kim (TEM)	11:00-12:00
Scanning Probe Microscopy (SPM) of MXenes	Dr. Stefano Ippolito	12:00 - 12:30
<b>45-Minute Break</b>		
X-ray Photoelectron Spectroscopy (XPS) of MXenes	Teng Zhang	1:15 - 2:00
Optical Characterization of MXenes	Tetiana Parker	2:00 - 2:30
Raman Spectroscopy of MAX Phases and MXenes	Kateryna Shevchuk	2:30 - 3:00
Day 4 - March 13th	Instructor	Time (EST)
EMI Shielding of MXenes and MXene Composites	Jamal AlHourani	10:00 - 10:30
Computational Studies of MXenes	Dr. Moses Abraham Bokinala	10:30 - 11:00
<b>15-Minute Break</b>		
Electrochemistry of MXenes	Dr. Yuan Zhang	11:15 - 12:15
<b>45-Minute Break</b>		
Energy Storage Applications	Sokhna Dieng	1:00 - 1:30
MXenes for Catalysis	Dr. Jongyoum Kim	1:30 - 2:30
MXenes for Water Desalination and Actuators	Yash Athreya	2:30 - 3:00

# MXene Course Program

Day 5 - March 14th	Instructor	Time (EST)
(Opto)electronic and Magnetic Properties of MXenes	Dr. Francesca Urban	10:00 - 10:45
(Opto)electronic Applications of MXenes	Dr. Stefano Ippolito	10:45 - 11:30
<b>30-Minute Break</b>		
Biomedical Applications of MXenes	Benj Chacon	12:00 - 1:00
<b>30-Minute Break</b>		
Q&A	Everyone	1:30 - 2:45
Closing Remarks	Prof. Yury Gogotsi	2:45 - 3:00

# MXene Course

## Instructors



### **Professor Yury Gogotsi**

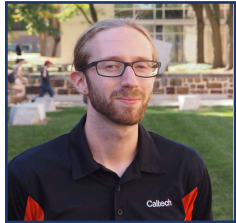
Distinguished University and Charles T. & Ruth M. Bach Professor  
Director, A.J. Drexel Nanomaterials Institute  
Email: [gogotsi@drexel.edu](mailto:gogotsi@drexel.edu)



**Introduction to Course and MXene Synthesis**



**Introduction to MXene Characterization and Applications**



### **Dr. Benjamin Davis**

Postdoctoral Researcher  
A.J. Drexel Nanomaterials Institute  
Email: [bd654@drexel.edu](mailto:bd654@drexel.edu)



**Fundamentals of Etching/Delamination**



### **Dr. Changhoon Park**

Postdoctoral Researcher  
A.J. Drexel Nanomaterials Institute  
Email: [cp3339@drexel.edu](mailto:cp3339@drexel.edu)



**Thin Film Processing**



### **Dr. Francesca Urban**

Postdoctoral Researcher  
A.J. Drexel Nanomaterials Institute  
Email: [fu36@drexel.edu](mailto:fu36@drexel.edu)



**(Opto)electronic and Magnetic Properties of MXenes**



# MXene Course

## Instructors



**Dr. Hyunho Kim** Postdoctoral  
Researcher  
A.J. Drexel Nanomaterials Institute  
Email: hk833@drexel.edu

▶ **Electronic Microscopy (TEM) of MXenes**



**Dr. Jongyoun Kim**  
Postdoctoral Researcher  
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Email: jk3977@drexel.edu

▶ **MXenes for Catalysis**



**Dr. Moses Abraham Bokinala**  
Postdoctoral Researcher  
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Email: mb4522@drexel.edu

▶ **Computational Studies of MXenes**



**Dr. Stefano Ippolito**  
Postdoctoral Researcher  
A.J. Drexel Nanomaterials Institute  
Email: si368@drexel.edu

▶ **Scanning Probe Microscopy (SPM) of MXenes**

▶ **(Opto)electronic Applications of  
MXenes**



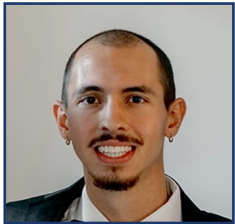
# MXene Course

## Instructors



**Dr. Yuan Zhang** Postdoctoral  
Researcher  
A.J. Drexel Nanomaterials Institute  
Email: yz895@drexel.edu

▶ **Electrochemistry of MXenes**



**Benjamin Chacon**  
Ph.D. Student  
A.J. Drexel Nanomaterials Institute  
Email: bjc92@drexel.edu

▶ **Synthesis of Other MXenes Beyond  $Ti_3C_2T_x$**

▶ **Biomedical Applications of MXenes**



**Bitia Soltan Mohammadlou**  
Ph.D. Student  
A.J. Drexel Nanomaterials Institute  
Email: bs3298@drexel.edu

▶ **Electron Microscopy (SEM) of MXenes**



**Deniz Çakir**  
Ph.D. Student  
A.J. Drexel Nanomaterials Institute  
Email: dc3489@drexel.edu

▶ **Demonstration of Etching/Delamination  
(Synthesis of  $Ti_3C_2T_x$ )**



# Instructors



**Jamal AlHourani**

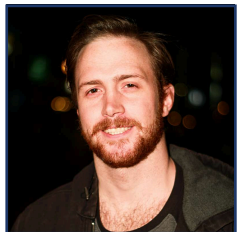
Ph.D. Student

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**EMI Shielding of MXenes and MXene Composites**



**James FitzPatrick**

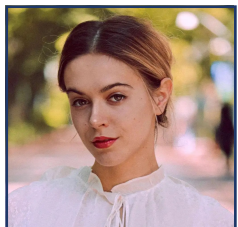
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**Introduction to Processing of MXene Dispersions, Size Selection / Dynamic Light Scattering (DLS): Size and Zeta Potential**



**Kateryna Shevchuk**

Ph.D. Student

A.J. Drexel Nanomaterials Institute

Email: [ks3382@drexel.edu](mailto:ks3382@drexel.edu)



**Raman Spectroscopy of MAX Phases and MXenes**



**Sokhna Dieng**

Ph.D. Student

A.J. Drexel Nanomaterials Institute

Email: [sd3623@drexel.edu](mailto:sd3623@drexel.edu)

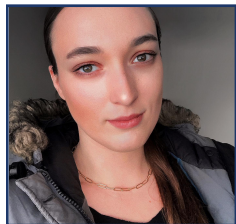


**Energy Storage Applications**





# Instructors



**Tetiana Parker**

Ph.D. Student

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Email: th896@drexel.edu



**MXene Processing - From Fibers to Textiles**



**Optical Characterization of MXenes**



**Teng Zhang**

Ph.D. Student

A.J. Drexel Nanomaterials Institute

Email: tz333@drexel.edu



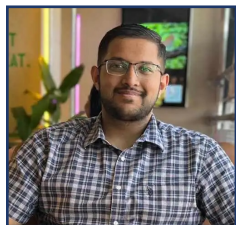
**Alternative Etching and Delamination Techniques for MXene Synthesis**



**Stability of MXene Dispersions, Composites, and Films**



**X-ray Photoelectron Spectroscopy (XPS) of MXenes**



**Yash Athreya**

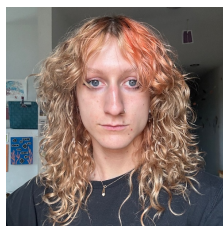
M.S Student

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**MXenes for Water Desalination and Actuators**



**Lucy Plant**

Lab Assistant

A.J. Drexel Nanomaterials Institute

Email: mwp56@drexel.edu



**Synthesis Best Practices**





## Course Program Manager



**Jamie Banks**  
Assistant Director  
A.J. Drexel Nanomaterials Institute  
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