

# Michael Naguib

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

102 papers	27,749 citations	53 h-index	119 g-index
119 ext. papers	33,914 ext. citations	9.8 avg, IF	7.32 L-index

#	Paper	IF	Citations
102	Two-dimensional titanium carbonitride MXene as a highly efficient electrocatalyst for hydrogen evolution reaction. <i>Materials Reports Energy</i> , <b>2022</b> , 2, 100075		2
101	Transition Metal Carbo-Chalcogenide "TMCC" a New Family of Two-dimensional Materials.. <i>Advanced Materials</i> , <b>2022</b> , e2200574	24	1
100	Engineering the Interlayer Spacing by Pre-Intercalation for High Performance Supercapacitor MXene Electrodes in Room Temperature Ionic Liquid. <i>Advanced Functional Materials</i> , <b>2021</b> , 31, 2104007	15.6	17
99	Synthesis of Ti3C2Tz MXene from low-cost and environmentally friendly precursors. <i>Materials Today Advances</i> , <b>2021</b> , 10, 100139	7.4	15
98	In Situ TEM Investigation of Lithium Intercalation in Ti3C2Tx MXenes for Energy Storage Applications. <i>Microscopy and Microanalysis</i> , <b>2021</b> , 27, 2736-2737	0.5	1
97	Egyptian blue: from pigment to battery electrodes.. <i>RSC Advances</i> , <b>2021</b> , 11, 19885-19889	3.7	1
96	Improved synthesis of TiCT MXenes resulting in exceptional electrical conductivity, high synthesis yield, and enhanced capacitance. <i>Nanoscale</i> , <b>2021</b> , 13, 3572-3580	7.7	59
95	MXene Reinforced Thermosetting Composite for Lightning Strike Protection of Carbon Fiber Reinforced Polymer. <i>Advanced Materials Interfaces</i> , <b>2021</b> , 8, 2100803	4.6	3
94	Engineering the Interlayer Spacing by Pre-Intercalation for High Performance Supercapacitor MXene Electrodes in Room Temperature Ionic Liquid (Adv. Funct. Mater. 33/2021). <i>Advanced Functional Materials</i> , <b>2021</b> , 31, 2170246	15.6	1
93	Ten Years of Progress in the Synthesis and Development of MXenes. <i>Advanced Materials</i> , <b>2021</b> , 33, e2103393	14.93	91
92	Safer lithium-ion battery anode based on Ti3C2Tz MXene with thermal safety mechanistic elucidation. <i>Chemical Engineering Journal</i> , <b>2021</b> , 419, 129387	14.7	5
91	Pre-Sodiated TiCT MXene Structure and Behavior as Electrode for Sodium-Ion Capacitors. <i>ACS Nano</i> , <b>2021</b> , 15, 2994-3003	16.7	21
90	Synthesis of new two-dimensional titanium carbonitride $Ti_2C_{0.5}N_{0.5}Tx$ MXene and its performance as an. <i>Informa Materials</i> , <b>2021</b> , 3, 1422-1430	23.1	6
89	Juggling Surface Charges of 2D Niobium Carbide MXenes for a Reactive Oxygen Species Scavenging and Effective Targeting of the Malignant Melanoma Cell Cycle into Programmed Cell Death. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2020</b> , 8, 7942-7951	8.3	19
88	Nature of Terminating Hydroxyl Groups and Intercalating Water in Ti3C2Tx MXenes: A Study by 1H Solid-State NMR and DFT Calculations. <i>Journal of Physical Chemistry C</i> , <b>2020</b> , 124, 13649-13655	3.8	19
87	Impact of Cation Intercalation on the Electronic Structure of TiCT MXenes in Sulfuric Acid. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 15087-15094	9.5	17
86	Tracking ion intercalation into layered Ti3C2 MXene films across length scales. <i>Energy and Environmental Science</i> , <b>2020</b> , 13, 2549-2558	35.4	54

85	Spatially resolved X-ray absorption spectroscopy investigation of individual cation-intercalated multi-layered Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene particles. <i>Applied Surface Science</i> , <b>2020</b> , 530, 147157	6.7	5
84	Large interlayer spacing NbCT (MXene) promotes the ultrasensitive electrochemical detection of Pb on glassy carbon electrodes.. <i>RSC Advances</i> , <b>2020</b> , 10, 24697-24704	3.7	11
83	Plasma Synthesis of Spherical Crystalline and Amorphous Electrolyte Nanopowders for Solid-State Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 11570-11578	9.5	4
82	Multiscale and Multimodal Characterization of 2D Titanium Carbonitride MXene. <i>Advanced Materials Interfaces</i> , <b>2020</b> , 7, 1902207	4.6	18
81	Proton Redox and Transport in MXene-Confined Water. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 763-770	9.5	18
80	Effect of Sheet Size and Atomic Structure on the Antibacterial Activity of Nb-MXene Nanosheets. <i>ACS Applied Nano Materials</i> , <b>2020</b> , 3, 11372-11382	5.6	21
79	Nb-based MXenes for efficient electrochemical sensing of small biomolecules in the anodic potential. <i>Electrochemistry Communications</i> , <b>2020</b> , 119, 106811	5.1	17
78	Ionic liquid-based synthesis of MXene. <i>Chemical Communications</i> , <b>2020</b> , 56, 11082-11085	5.8	33
77	Catalytic Activity of Ti-based MXenes for the Hydrogenation of Furfural. <i>ChemCatChem</i> , <b>2020</b> , 12, 5733-5742	5.4	8
76	Structure and Dynamics of Aqueous Electrolytes Confined in 2D-TiO/TiCT MXene Heterostructures. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 58378-58389	9.5	4
75	Electrochemical performance of two-dimensional Ti <sub>3</sub> C <sub>2</sub> -Mn <sub>3</sub> O <sub>4</sub> nanocomposites and carbonized iron cations for hybrid supercapacitor electrodes. <i>Electrochimica Acta</i> , <b>2019</b> , 301, 487-499	6.7	38
74	Monolayer Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> as an Effective Co-catalyst for Enhanced Photocatalytic Hydrogen Production over TiO <sub>2</sub> . <i>ACS Applied Energy Materials</i> , <b>2019</b> , 2, 4640-4651	6.1	113
73	High Dielectric Constant and Low Dielectric Loss via Poly(vinyl alcohol)/TiCT MXene Nanocomposites. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 18599-18608	9.5	78
72	Unraveling the Nanoscale Heterogeneity of Solid Electrolyte Interphase Using Tip-Enhanced Raman Spectroscopy. <i>Joule</i> , <b>2019</b> , 3, 2001-2019	27.8	66
71	Interfacial Reactions and Performance of LiLaZrO-Stabilized Li-Sulfur Hybrid Cell. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 42042-42048	9.5	23
70	Effect of Synthesis Methods on the Structure and Defects of Two-Dimensional MXenes		111-123
69	Chemical and Electrochemical Intercalation of Ions and Molecules into MXenes		161-175
68	2D/2D heterojunction of TiC/g-CN nanosheets for enhanced photocatalytic hydrogen evolution. <i>Nanoscale</i> , <b>2019</b> , 11, 8138-8149	7.7	197

67	Computational Screening of MXene Electrodes for Pseudocapacitive Energy Storage. <i>Journal of Physical Chemistry C</i> , <b>2019</b> , 123, 315-321	3.8	47
66	Understanding the MXene Pseudocapacitance. <i>Journal of Physical Chemistry Letters</i> , <b>2018</b> , 9, 1223-1228	6.4	133
65	One-Step Synthesis of Nb O <sub>2</sub> /C/Nb C (MXene) Composites and Their Use as Photocatalysts for Hydrogen Evolution. <i>ChemSusChem</i> , <b>2018</b> , 11, 688-699	8.3	223
64	Effect of Binder Architecture on the Performance of Silicon/Graphite Composite Anodes for Lithium Ion Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2018</b> , 10, 3470-3478	9.5	61
63	Complexity of Intercalation in MXenes: Destabilization of Urea by Two-Dimensional Titanium Carbide. <i>Journal of the American Chemical Society</i> , <b>2018</b> , 140, 10305-10314	16.4	58
62	A comparative study on the oxidation of two-dimensional Ti <sub>3</sub> C <sub>2</sub> MXene structures in different environments. <i>Journal of Materials Chemistry A</i> , <b>2018</b> , 6, 12733-12743	13	124
61	Limiting Internal Short-Circuit Damage by Electrode Partition for Impact-Tolerant Li-Ion Batteries. <i>Joule</i> , <b>2018</b> , 2, 155-167	27.8	29
60	Multi-modal, ultrasensitive, wide-range humidity sensing with TiC film. <i>Nanoscale</i> , <b>2018</b> , 10, 21689-21695	7.7	45
59	High Areal Capacity Si/LiCoO Batteries from Electrospun Composite Fiber Mats. <i>ChemSusChem</i> , <b>2017</b> , 10, 1823-1831	8.3	14
58	Synergetic effects of K and Mg ion intercalation on the electrochemical and actuation properties of the two-dimensional TiC MXene. <i>Faraday Discussions</i> , <b>2017</b> , 199, 393-403	3.6	50
57	Impact of air exposure and surface chemistry on Li <sub>0.7</sub> La <sub>0.3</sub> Zr <sub>0.2</sub> O <sub>12</sub> interfacial resistance. <i>Journal of Materials Chemistry A</i> , <b>2017</b> , 5, 13475-13487	13	195
56	Electrochemical performance of MXenes as K-ion battery anodes. <i>Chemical Communications</i> , <b>2017</b> , 53, 6883-6886	5.8	106
55	Multimodality of Structural, Electrical, and Gravimetric Responses of Intercalated MXenes to Water. <i>ACS Nano</i> , <b>2017</b> , 11, 11118-11126	16.7	127
54	Calorimetric Study of Alkali Metal Ion (K <sup>+</sup> , Na <sup>+</sup> , Li <sup>+</sup> ) Exchange in a Clay-Like MXene. <i>Journal of Physical Chemistry C</i> , <b>2017</b> , 121, 15145-15153	3.8	26
53	Evidence of molecular hydrogen trapped in two-dimensional layered titanium carbide-based MXene. <i>Physical Review Materials</i> , <b>2017</b> , 1,	3.2	13
52	Influence of metal ions intercalation on the vibrational dynamics of water confined between MXene layers. <i>Physical Review Materials</i> , <b>2017</b> , 1,	3.2	35
51	Calorimetric Determination of Thermodynamic Stability of MAX and MXene Phases. <i>Journal of Physical Chemistry C</i> , <b>2016</b> , 120, 28131-28137	3.8	28
50	Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> (MXene)/polyacrylamide nanocomposite films. <i>RSC Advances</i> , <b>2016</b> , 6, 72069-72073	3.7	112

49	Nanoscale Elastic Changes in 2D Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> (MXene) Pseudocapacitive Electrodes. <i>Advanced Energy Materials</i> , <b>2016</b> , 6, 1502290	21.8	92
48	Two-Dimensional Nb-Based M <sub>4</sub> C <sub>3</sub> Solid Solutions (MXenes). <i>Journal of the American Ceramic Society</i> , <b>2016</b> , 99, 660-666	3.8	153
47	Anodized Ti <sub>3</sub> SiC <sub>2</sub> As an Anode Material for Li-ion Microbatteries. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2016</b> , 8, 16670-6	9.5	28
46	Titania Composites with 2 D Transition Metal Carbides as Photocatalysts for Hydrogen Production under Visible-Light Irradiation. <i>ChemSusChem</i> , <b>2016</b> , 9, 1490-7	8.3	173
45	Resolving the Structure of Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXenes through Multilevel Structural Modeling of the Atomic Pair Distribution Function. <i>Chemistry of Materials</i> , <b>2016</b> , 28, 349-359	9.6	267
44	X-ray photoelectron spectroscopy of select multi-layered transition metal carbides (MXenes). <i>Applied Surface Science</i> , <b>2016</b> , 362, 406-417	6.7	834
43	The effect of hydrazine intercalation on the structure and capacitance of 2D titanium carbide (MXene). <i>Nanoscale</i> , <b>2016</b> , 8, 9128-33	7.7	161
42	Effect of Metal Ion Intercalation on the Structure of MXene and Water Dynamics on its Internal Surfaces. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2016</b> , 8, 8859-63	9.5	164
41	Synthesis and Characterization of 2D Molybdenum Carbide (MXene). <i>Advanced Functional Materials</i> , <b>2016</b> , 26, 3118-3127	15.6	640
40	High-Temperature Neutron Diffraction, Raman Spectroscopy, and First-Principles Calculations of Ti <sub>3</sub> SnC <sub>2</sub> and Ti <sub>2</sub> SnC. <i>Journal of the American Ceramic Society</i> , <b>2016</b> , 99, 2233-2242	3.8	10
39	Synthesis and Charge Storage Properties of Hierarchical Niobium Pentoxide/Carbon/Niobium Carbide (MXene) Hybrid Materials. <i>Chemistry of Materials</i> , <b>2016</b> , 28, 3937-3943	9.6	172
38	Large-scale delamination of multi-layers transition metal carbides and carbonitrides "MXenes". <i>Dalton Transactions</i> , <b>2015</b> , 44, 9353-8	4.3	405
37	High mass loading, binder-free MXene anodes for high areal capacity Li-ion batteries. <i>Electrochimica Acta</i> , <b>2015</b> , 163, 246-251	6.7	169
36	Controlling the actuation properties of MXene paper electrodes upon cation intercalation. <i>Nano Energy</i> , <b>2015</b> , 17, 27-35	17.1	135
35	Synthesis of two-dimensional materials by selective extraction. <i>Accounts of Chemical Research</i> , <b>2015</b> , 48, 128-35	24.3	456
34	Direct Measurement of Surface Termination Groups and Their Connectivity in the 2D MXene V <sub>2</sub> CT <sub>x</sub> Using NMR Spectroscopy. <i>Journal of Physical Chemistry C</i> , <b>2015</b> , 119, 13713-13720	3.8	113
33	25th anniversary article: MXenes: a new family of two-dimensional materials. <i>Advanced Materials</i> , <b>2014</b> , 26, 992-1005	24	3141
32	Room-temperature carbide-derived carbon synthesis by electrochemical etching of MAX phases. <i>Angewandte Chemie - International Edition</i> , <b>2014</b> , 53, 4877-80	16.4	86

31	One-step synthesis of nanocrystalline transition metal oxides on thin sheets of disordered graphitic carbon by oxidation of MXenes. <i>Chemical Communications</i> , <b>2014</b> , 50, 7420-3	5.8	427
30	Synthesis and characterization of two-dimensional Nb <sub>4</sub> C <sub>3</sub> (MXene). <i>Chemical Communications</i> , <b>2014</b> , 50, 9517-20	5.8	321
29	Ti <sub>3</sub> C <sub>2</sub> MXene as a high capacity electrode material for metal (Li, Na, K, Ca) ion batteries. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2014</b> , 6, 11173-9	9.5	847
28	Prediction and characterization of MXene nanosheet anodes for non-lithium-ion batteries. <i>ACS Nano</i> , <b>2014</b> , 8, 9606-15	16.7	644
27	Role of surface structure on Li-ion energy storage capacity of two-dimensional transition-metal carbides. <i>Journal of the American Chemical Society</i> , <b>2014</b> , 136, 6385-94	16.4	864
26	Room-Temperature Carbide-Derived Carbon Synthesis by Electrochemical Etching of MAX Phases. <i>Angewandte Chemie</i> , <b>2014</b> , 126, 4977-4980	3.6	23
25	Innentitelbild: Room-Temperature Carbide-Derived Carbon Synthesis by Electrochemical Etching of MAX Phases (Angew. Chem. 19/2014). <i>Angewandte Chemie</i> , <b>2014</b> , 126, 4820-4820	3.6	
24	Two-Dimensional Materials: 25th Anniversary Article: MXenes: A New Family of Two-Dimensional Materials (Adv. Mater. 7/2014). <i>Advanced Materials</i> , <b>2014</b> , 26, 982-982	24	85
23	Enhanced and tunable surface plasmons in two-dimensional Ti <sub>3</sub> C <sub>2</sub> stacks: Electronic structure versus boundary effects. <i>Physical Review B</i> , <b>2014</b> , 89,	3.3	90
22	Structure of nanocrystalline Ti <sub>3</sub> C <sub>2</sub> MXene using atomic pair distribution function. <i>Physical Review Letters</i> , <b>2014</b> , 112, 125501	7.4	129
21	New Solid Solution MAX Phases: (Ti <sub>0.5</sub> , V <sub>0.5</sub> ) <sub>3</sub> AlC <sub>2</sub> , (Nb <sub>0.5</sub> , V <sub>0.5</sub> ) <sub>2</sub> AlC, (Nb <sub>0.5</sub> , V <sub>0.5</sub> ) <sub>4</sub> AlC <sub>3</sub> and (Nb <sub>0.8</sub> , Zr <sub>0.2</sub> ) <sub>2</sub> AlC. <i>Materials Research Letters</i> , <b>2014</b> , 2, 233-240	7.4	85
20	New two-dimensional niobium and vanadium carbides as promising materials for Li-ion batteries. <i>Journal of the American Chemical Society</i> , <b>2013</b> , 135, 15966-9	16.4	1168
19	Cation intercalation and high volumetric capacitance of two-dimensional titanium carbide. <i>Science</i> , <b>2013</b> , 341, 1502-5	33.3	2510
18	Photocatalytic WO <sub>3</sub> and TiO <sub>2</sub> Films on Brass. <i>International Journal of Applied Ceramic Technology</i> , <b>2013</b> , 10, 26-32	2	5
17	Intercalation and delamination of layered carbides and carbonitrides. <i>Nature Communications</i> , <b>2013</b> , 4, 1716	17.4	1504
16	Kinetics of aluminum extraction from Ti <sub>3</sub> AlC <sub>2</sub> in hydrofluoric acid. <i>Materials Chemistry and Physics</i> , <b>2013</b> , 139, 147-152	4.4	227
15	MXene: a promising transition metal carbide anode for lithium-ion batteries. <i>Electrochemistry Communications</i> , <b>2012</b> , 16, 61-64	5.1	963
14	Comment on "Ti <sub>5</sub> Al <sub>2</sub> C <sub>3</sub> : A New Ternary Carbide Belonging to MAX Phases in the Ti-Al-C System". <i>Journal of the American Ceramic Society</i> , <b>2012</b> , 95, 3352-3354	3.8	11

13	Tensile creep of Ti <sub>2</sub> AlC in air in the temperature range 1000–1500°C. <i>Scripta Materialia</i> , <b>2012</b> , 66, 805-808	5.6	32
12	Structure of a new bulk Ti <sub>5</sub> Al <sub>2</sub> C <sub>3</sub> MAX phase produced by the topotactic transformation of Ti <sub>2</sub> AlC. <i>Journal of the European Ceramic Society</i> , <b>2012</b> , 32, 3485-3491	6	42
11	First-order Raman scattering of the MAX phases: Ti <sub>2</sub> AlN, Ti <sub>2</sub> AlC <sub>0.5</sub> N <sub>0.5</sub> , Ti <sub>2</sub> AlC, (Ti <sub>0.5</sub> V <sub>0.5</sub> ) <sub>2</sub> AlC, V <sub>2</sub> AlC, Ti <sub>3</sub> AlC <sub>2</sub> , and Ti <sub>3</sub> GeC <sub>2</sub> . <i>Journal of Raman Spectroscopy</i> , <b>2012</b> , 43, 168-172	2.3	109
10	A Non-Aqueous Asymmetric Cell with a Ti <sub>2</sub> C-Based Two-Dimensional Negative Electrode. <i>Journal of the Electrochemical Society</i> , <b>2012</b> , 159, A1368-A1373	3.9	270
9	Two-dimensional transition metal carbides. <i>ACS Nano</i> , <b>2012</b> , 6, 1322-31	16.7	2382
8	First principles study of two-dimensional early transition metal carbides. <i>MRS Communications</i> , <b>2012</b> , 2, 133-137	2.7	316
7	First-order Raman scattering of the MAX phases Ta <sub>4</sub> AlC <sub>3</sub> , Nb <sub>4</sub> AlC <sub>3</sub> , Ti <sub>4</sub> AlN <sub>3</sub> , and Ta <sub>2</sub> AlC. <i>Journal of Raman Spectroscopy</i> , <b>2012</b> , 43, 954-958	2.3	28
6	On the Topotactic Transformation of Ti <sub>2</sub> AlC into a Ti <sub>10</sub> Al <sub>6</sub> C <sub>8</sub> Cubic Phase by Heating in Molten Lithium Fluoride in Air. <i>Journal of the American Ceramic Society</i> , <b>2011</b> , 94, 4556-4561	3.8	59
5	Two-dimensional nanocrystals produced by exfoliation of Ti <sub>3</sub> AlC <sub>2</sub> . <i>Advanced Materials</i> , <b>2011</b> , 23, 4248-534	4.4	4846
4	Synthesis of a new nanocrystalline titanium aluminum fluoride phase by reaction of Ti <sub>2</sub> AlC with hydrofluoric acid. <i>RSC Advances</i> , <b>2011</b> , 1, 1493	3.7	35
3	Time-Dependent Cation Selectivity of Titanium Carbide MXene in Aqueous Solution. <i>Advanced Sustainable Systems</i> , 2100383	5.9	0
2	Theoretical Insights into MXene Termination and Surface Charge Regulation. <i>Journal of Physical Chemistry C</i> ,	3.8	2
1	Layered Nano-Mosaic of Niobium Disulfide Heterostructures by Direct Sulfidation of Niobium Carbide MXenes for Hydrogen Evolution. <i>Advanced Materials Interfaces</i> , 2102185	4.6	1