



## Babak Anasori

### Research Assistant Professor

A. J. Drexel Nanotechnology Institute  
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## Summary

Papers Citations: >2000, average citations per paper: 32.39, *h*-index: 25 (Web of Science™)

First or corresponding author: *Nature Reviews Materials, Advanced Materials, ACS Nano, Science Advances, Materials Today, Nanoscale Horizons, Nanoscale, J. Applied Physics, Scripta Mater., ...*

Contributed: *Nature, Nature Communications, Science, Science Advances, Energy & Environmental Science, Advanced Materials, Advanced Energy Materials, Nano Energy, ACS Energy Letters, Acta Materialia, Chemical Communications, ...*

Seven 🔥 *Hot Papers*, and fifteen 🏆 *Highly Cited Papers* on Web of Science™.

Awards More than 25 national and international awards and recognitions, including:  
Postdoctoral Award (MRS), Diamond Award Graduate Excellence (ACerS), 2 NSF Visualization Challenge Awards, 2 Roland B. Snow Awards (ACerS), 3 Teaching Awards (Drexel), ...

Synergistic Activities Outreach lectures and labs, and developing 5 student workshops and competitions to improve science communication and encourage creativity in research, including:  
*Science in Videos (SciVid), NanoArtography, 365-24-7 Presentations, Unexpected Discoveries, ...*

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## Education

2009-2014 **Ph.D.**, Materials Science and Engineering, *Drexel University* (Philadelphia, PA)

2004-2007 **M.Sc.**, Metallurgy and Materials Engineering, *University of Tehran* (Tehran, Iran)

1999-2004 **B.Sc.**, Materials Science and Engineering, *Sharif University of Technology* (Tehran, Iran)

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## Positions

10/2014- **Research Assistant Professor** (06/2016 to present)

present **Research Associate** (10/2015-06/2016)

**Post-Doctoral Research Fellow** (10/2014-10/2015)

*A.J. Drexel Nanomaterials Institute* and Materials Science and Engineering Department  
(Prof. Yury Gogotsi)

2009-2014 **Doctoral Student**, Materials Science and Engineering Department, *Drexel University*  
(Prof. Michel W. Barsoum)

2013-present **Instrument Manager**, *Core Research Facility (CRF), Drexel University*  
Nanoindenter, training and advising users and performing requested tests by external users

2013-2014 **Research Scientist**, Mechanical Engineering and Mechanics, *Drexel University*  
Analyzed aluminum-lithium alloys fatigue failure for Federal Aviation Administration (FAA)

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## Honors and Awards

2018 **Highly Cited Researcher in 2017**, Drexel University

Among the four highly cited faculty of the College of Engineering, whose journal papers were both published in 2017 and were already highly cited in the same year on the Web of Science™ [\[link\]](#)

2016 **Postdoctoral Award**, Materials Research Society (MRS), Spring Meeting

Citation: “*For innovative research on 2D materials, creative and artistic ways of presenting science, dedication to and love of teaching, and student mentoring*” [\[link\]](#)

2014 **Doctoral Research Excellence Award**, Drexel University [\[link\]](#)

- 2014 **Teaching Achievement Award**, the highest award for a TA at Drexel University [\[link\]](#)
- 2014 **First Place and People's Choice Award**, NSF and Science Visualization Challenge [\[link\]](#)  
Award was highlighted in *Science*, Vol. 343 pp. 602-603 (2014) [\[DOI\]](#)
- 2013 **Continuing Teaching Excellence Award**, Drexel University [\[link\]](#)
- 2013 **Roland B. Snow Award** for Best of the Show, American Ceramics Society (ACerS),  
Ceramographic Exhibit (MS&T) [\[link\]](#)
- 2013 **George Hill Jr. Fellowship Award**, Drexel University [\[link\]](#)
- 2012 **Diamond Award, Graduate Excellence in Materials Science** (GEMS) Award  
American Ceramics Society (ACerS), Basic Science Division, (MS&T) [\[link\]](#)  
*"To recognize the outstanding achievements of graduate students in Materials Science & Eng."*
- 2012 **People's Choice Award**, NSF and Science Visualization Challenge [\[link\]](#)  
Award was highlighted in *Science*, Vol. 335 pp. 526-527 (2012) [\[DOI\]](#)
- 2012 **Teaching Excellence Award**, Highly Commended, Drexel University [\[link\]](#)
- 2012 **Roland B. Snow Award** for Best of the Show, American Ceramics Society (ACerS),  
Ceramographic Exhibit (MS&T) [\[link\]](#)
- 2011 **Best Junior Researcher Award**, Nanomaterials Symposium (TMS) [\[link\]](#)
- 2010-2011 Travel Awards, Graduate Division, Drexel University

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#### Poster and Microscopy Awards

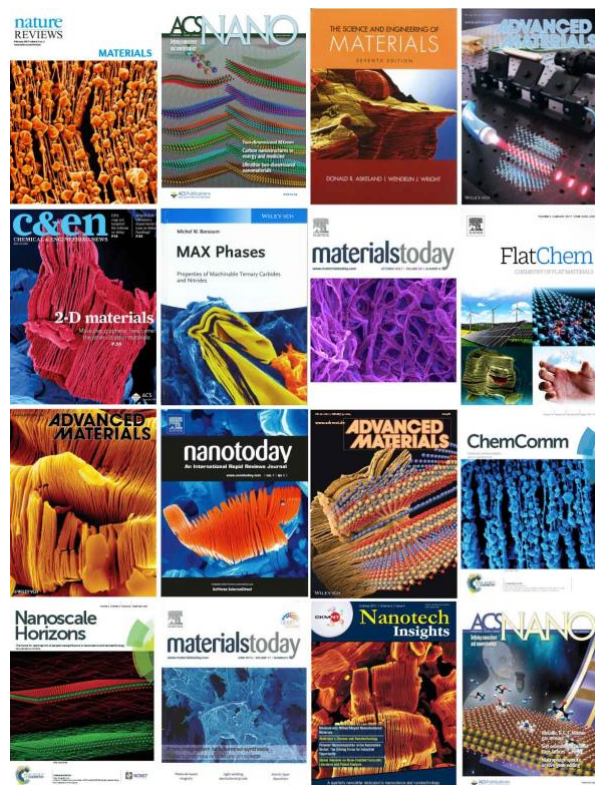
- 2018 Second Place in Science as Art, Materials Research Society (MRS) Spring Meeting
- 2017 First Place in Ceramographic Competition, American Ceramics Society (ACerS), MS&T17
- 2017 Winner, Journal Cover Competition, Materials Today
- 2017 First Place in Science as Art, Materials Research Society (MRS) Spring Meeting
- 2017 Second Place in NanoArt Competition, Singh Center for NanoTech., University of Pennsylvania
- 2016 Winner, Journal Cover Competition, Materials Today
- 2014 Research Day Award, Poster presentation, Drexel University
- 2014 Honorable Mention in "Class 4 Scanning Electron Microscopy", International Metallographic Contest (IMC), ASM International
- 2013 Winner, Journal Cover Competition, Materials Today
- 2013 First place in "Class 4 Scanning Electron Microscopy", IMC, ASM International
- 2012 Second Place in Science as Art, Materials Research Society (MRS) Fall Meeting
- 2012 First place in "Class 4 Scanning Electron Microscopy", IMC, ASM International  
Third place in "Class 11 Digital Microscopy Artistic", IMC, ASM International
- 2012 Second & Third place, Graduate Research Photo Contest, Drexel University
- 2011 Best Student Presentation, Second Place, AIAA- Greater Philadelphia Regional Aerospace Eng. and Tech. Symposium, Newtown, PA
- 2011 Poster Award, Acta Materialia Gold Medal Symposium, honoring Prof. J. Narayan (MS&T)
- 2011 Second Place, Scanning Electron Microscopy, Ceramographic Exhibit (ACerS)
- 2011 First place in "Class 9 Artistic Microscopy - Black and White Only", IMC, ASM International  
First place in "Class 11 Digital Microscopy Artistic", IMC, ASM International  
Second place in "Class 4 Scanning Electron Microscopy", IMC, ASM International
- 2010 First Place, CRF Image Competition, College of Engineering, Drexel University

## Book Covers

- 2015 The Science and Engineering of Materials, 7<sup>th</sup> ed., D. R. Askeland, W. J. Wright [\[link\]](#)  
 2013 MAX Phases, 1<sup>st</sup> ed., Michel W. Barsoum [\[link\]](#)

## Journal Covers

- 2018 Materials Today, Vol 21 (10)  
 2018 ACS Nano, Vol. 12 (2)  
 2017 Nature Reviews Materials, Vol. 2 (2)  
 2017 Advanced Materials, Vol. 29 (40)  
 2017 Materials Today, Vol 20 (8)  
 2017 Chemical and Eng. News (C&EN), May 29  
 2017 FlatChem, Vol. 1 (1)  
 2016 Nanoscale Horizons, Vol. 1 (3)  
 2015 ACS Nano, Vol. 9 (10)  
 2014 Advanced Materials, Vol. 26 (7)  
 2014 Nano Today, Vol 9 (2)  
 2014 Materials Today, Vol 17 (5)  
 2014 Chemical Communications, Vol. 50 (56)  
 2012 Nano Today, Vol 7 (1)  
 2011 Advanced Materials, Vol. 23 (37)  
 2011 Nanotech Insight, Vol. 2 (4)



## Microscopy Images Featured on

- 2015, 2016 Chemistry in Pictures by C&EN [\[link\]](#)  
 2011-2018 Drexel Nanomaterials Institute calendar  
 2011, 2014 Carl Zeiss calendar  
 2012 Calendar, American Physical Society (APS)  
 2012 Materials Research Society (MRS) Bulletin, Image gallery, February [\[link\]](#)  
 2011 American Physical Society (APS) Homepage [\[link\]](#)

## Media Coverage

- 2018 “2D MXene Antennas”  
 · *ScienceNews* [\[link\]](#) · *IEEE Spectrum* [\[link\]](#) · *The Conversation* [\[link\]](#)  
 2018 “Taking Steps Towards Wearable Artificial Kidney”  
 · *ScienceDaily* [\[link\]](#) · *Phys.org* [\[link\]](#)  
 2018 *Exel Magazine*, Drexel University Research Magazine, two stories  
 a) Expansion of MXenes, Materials Witnesses, a story about the growth of MXene research [\[link\]](#)  
 b) Atomic Art, interviewed for originating and charring the NanoArtography Contest [\[link\]](#)  
 2018 *MRS Bulletin*, Society News, “*Science in Video Awards*”, Interview about creating the video competition at the MRS Meetings and its first year Awards Ceremony, February, Vol. 43 (2). [\[link\]](#)  
 2018 *Drexel Magazine, Inside Cover*, “*Nano Art*”, featuring NanoArtography competition, the number of image submissions and its social media followers, Winter-Spring issue. [\[link\]](#)  
 2017 *MRS Bulletin*, Society News Profile, “Babak Anasori, Research assistant professor and microscopic

- photographer”, October issue, Vol. 42 (10). [\[link\]](#)
- 2017 Cover Story, *Chem. & Eng. News (C&EN)*, “2D materials go beyond graphene” [\[link\]](#)
- 2016 Radio Interview, *Newstalk 610*, “MXene amazing science”, 610CKTB.com [\[link\]](#)
- 2016 “MXene for electromagnetic interference shielding”  
· *Nature World News* [\[link\]](#) · *Science World Report* [\[link\]](#) · *Cantech* [\[link\]](#)  
· *Gizmodo U.K.* [\[link\]](#) · *Chemistry World* [\[link\]](#) · *The American Ceramic Society* [\[link\]](#)
- 2016 *Chemistry World*, Royal Society of Chemistry (RSC), “Semi-conductivity between the sheets” [\[link\]](#)
- 2016 *Exel Magazine*, Drexel University Research Magazine, “Atomic Sandwiches” [\[link\]](#)
- 2015 Top Research of 2015, *Chem. & Eng. News (C&EN)* “Atomically thin films grow in number” [\[link\]](#)
- 2015 Interview, *International Innovation*, September 22, 2015  
“Move over graphene, there are new materials on the block” [\[link\]](#)
- 2015 *ACS Nanotation Video*, by *American Chemical Society (ACS)* [\[link\]](#)
- 2015 “Discovery of 2D ordered double transition metal carbides”  
· U.S. Department of Energy (DOE) [\[link\]](#)  
· *IEEE Spectrum* [\[link\]](#)  
· *Energy Harvesting Journal* [\[link\]](#) · *Materials Today News* [\[link\]](#)
- 2012 “The cliff of 2D world”  
· *National Geographic* [\[link\]](#) · *BBC* [\[link\]](#) · *MSNBC* [\[link\]](#)  
· *Washington Post* [\[link\]](#) · *Wired* [\[link\]](#)
- 2012 Front-page Story, *The Philadelphia Inquirer*, February 13 [\[link\]](#)
- 2012 Video Story, *Inside Science TV*, sponsored by American Institute of Physics [\[link\]](#)

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## Teaching

- 2015-2016 Guest and Substitute Lecturer, SEM, TEM and Nanoindentation for “Advanced Materials Laboratory”, MATE 280, Drexel University
- 2010-2013 Teaching Assistant and Recitation Instructor, (5 terms), “Introduction to Materials Science”; Undergraduate course, Drexel University  
( $\approx$  500 students register each term in this course. Each recitation class has about 30 students. Also, held review lectures for the entire  $\approx$  500 students.  
Overall rating by the students’ evaluation for four consecutive terms:  $4.86 \pm 0.06$  out of 5)
- 2012 Teaching Certificate, Teaching workshop and creation of teaching portfolio, Drexel University
- 2012-2014 Nanoindenter lab instructor, ASM Materials camp, Drexel University
- 2012 Scanning Electron Microscopy (SEM) lab instructor, ASM Materials camp, Drexel University
- 2009-2013 Ceramics lab instructor, Materials two-day course (MATE 100), Drexel University
- 2009-2013 Ceramics lab instructor, ASM Materials Camp, Drexel University

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## Academic Mentoring

- Undergrads 6-month undergraduate Co-op internship: hired, mentored, and supervised
- Spring-Summer 2017-18: Grayson Deysher (MSE)  
Fall-Winter 2017-18: Emmanuel Espino (Computer Eng.), Eliot Precetti (Biomedical Eng.)  
Spring-Summer 2016-17: Pavel Lelyukh (MSE), Benjamin DeToro (MSE), Saleesha Sin (Animation & Visual Effects)  
Fall-Winter 2016-17: Gabriel Scull (Computer Science), Matthew Brodowski (Computer Science), Sarah Buondonno (Game & Art Production)  
Spring-Summer 2015-16: Bernard Haines (MSE), Nicholas Trainer (Chemical and Biological Eng.), Luisa Gomes (MSE)  
Fall-winter 2015-16: Patrick Walsh (MSE), James Breslin (Chemical and Biological Eng.)  
Spring-Summer 2014-15: Cooper Voigt (MSE, current: PhD Georgia Tech.)  
Fall-Winter 2014-15: Brian Blake (MSE), Brian Hosler (Electrical & Computer Eng., PhD Drexel)
- Undergraduate mentoring  
Matthias Agne (MSE 2011-14, PhD Northwestern), Matt Nelson (MSE, 2012-14)
- Graduates Jay Shah (MSE, M.S., 2015-17)
- PhD Thesis Committee Patrick Ubrankowski (PhD proposal, MSE, Drexel), Muhammad Boota (PhD 09/2017, MSE, Drexel)

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## Professional Service & Review Activities

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### Created and Implemented New Student Competitions

- 2017-2018 **Science in Videos (SciVid) - MRS Fall Meetings**, Competition designer and chair [\[link\]](#)  
Created and chaired a video competition to encourage students to make 2-minute videos to excite and amaze the public about MSE. The goal of this competition is to create a series of short videos to educate the general public about MSE, make MSE students to think outside the box and improve their presentation skills, Materials Research Society (MRS).
- 2017 **Unexpected Discoveries Presentations**, Competition designer and chair [\[link\]](#)  
Created and ran a presentation competition to promote critical thinking and encourage thinking outside the box in research. The competition consists of a < 10-minute presentation about how the lab research can solve daily problems and encourage students to speculate about potential outcomes of their undesirable results that can lead to unexpected discoveries.
- 2016, 2018 **365-24-7 Presentations**, Competition and workshop designer and chair [\[link\]](#)  
Created and ran a presentation competition workshop to enhance students' oral presentation skills from conference talks to elevator speech and first impression kind presentations. This competition consists of three presentations: 365 seconds (conference type), 24 s (elevator speech), and 7 s (first impression), Drexel Nanomaterials Institute (2016-18), **MRS Fall Meeting** (2018).
- 2016-2018 **NanoArtography**, International scientific image competition [\[link\]](#)  
Created, organized and chaired an international scientific image competition. External and internal fund raising and advertising the competition on American Chemical Society and Royal Society of Chemistry, Wiley websites. More than 120 entries were submitted internationally each year, Drexel Nanomaterials Institute.

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### Conference Organization

- 2018 Symposium Organizer, MRS Fall Meeting 2018, *Nanomaterials and Nanomanufacturing for Sustainability*, NM04, the 6<sup>th</sup> largest symposium among 56 symposia in the MRS Fall 2018 [\[link\]](#).
- 2018 Symposium Organizer, ACerS International Conference and Expo on Advanced Ceramics and Composites (ICACC'18), Symposium S12: *Advanced MAX/MXene phases and UHTC materials for extreme and high temperature environment*.

2017 Session Chair, MRS Fall Meeting, Symposium NM04: *Atomically Thin, Layered and 2D Non-Carbon Materials and Systems*.

2017 Session Chair, MS&T17, *The 9th International Symposium on Green and Sustainable Technologies for Materials Manufacturing and Processing: Next Generation Green Technologies I*.

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### Department and University Service

2018 Seminar Speaker, “How to write a paper and get it published”, MRS University Chapter, Drexel

2018 Panelist, “Career pathways after graduation” Materials Science Department, Drexel

2017 Lecturer, ASM International Philadelphia “Liberty Bell” Chapter, Materials Camp, Seminar on Nanomaterials “Think small, think nano”

2017-18 Judge for Drexel Emerging Graduate Scholar Conference, Graduate presentations

2016 Judge for undergraduate posters, MRS Spring

2015 Judge for Drexel Research Day, Graduate student posters

2014 Panelist, “Lessons Learned from the Writing Process”, Drexel Graduate Women in Science & Eng.

2014 Judge for STAR Students poster presentations, Drexel

2011-2013 Philly Materials Day, Lab instructor, Drexel University and University of Pennsylvania

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### Professional Service & Review Activities

2016-present Academic Affairs Committee, Materials Research Society (MRS)

2017 Reviewer, Foundation for Polish Science Proposals

2017 Reviewer, Academy of Finland Proposals

2017 Reviewer, Poland National Science Center Proposals

2014-present Journal Referee:

*Nature Communications, Angewandte Chemie, Scientific Reports, ACS Nano, Joule, Nanoscale, Nano Today, Inorganic Chemistry, MRS Communications, J. Applied Physics, J. Alloys and Compounds, J. Materials Research, J. of Advanced Ceramics, International J. Materials Research, Ceramics International, Materials Letters, International J. of Modern Physics B, Materials, J. Physics & Chemistry of Solids, Computational Materials Science, Materials Characterization.*

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## Publications

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### Invention Disclosures and Patents

2018 Ceramic Composites Reinforced with 2D Transition Metal Carbides and Nitrides MXenes. Inventors: J. Guo, B. Legum, B. Anasori, K. Wang, P. Lelyukh, Y. Gogotsi, C. A. Randall. Provisional Application # 62/687,521.

2017 Antennas Comprising MXene Compositions and Films. Inventors: B. Anasori, Y. Gogotsi, U.S. PCT/US2017/048127.

2017 Implantable Devices Using 2D Metal Carbides and Nitrides (MXenes). Inventors: F. Vitale, B. Litt, N. Driscoll, Y. Gogotsi, B. Anasori, K. Maleski. U.S. Provisional Application # 62/559,315

2017 MXene Sorbent for Removal of Small Molecules from Dialysate. Inventors: F. Meng, B. Anasori, S. Sandeman, S. Mikhalovsky, Y. Gogotsi, U.S. Provisional Application #62/539,715.

2016 MXene Films and Composites for EMI Shielding. Inventors: M. Alhabeab, C. B. Hatter, B. Anasori, F. Shahzad, M. H. Soon, C. M. Koo, Y. Gogotsi, U.S. Patent Application #62/326,074.

2015 Two-Dimensional, Ordered, Double Transition Metals Carbides (MXenes). Inventors: B. Anasori, M. W. Barsoum, Y. Gogotsi, U.S. Patent Application, #62/149,890.

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## Edited Book

- 2018 **B. Anasori**, Y. Gogotsi (Eds), “2D Metal Carbides and Nitrides (MXenes): Structure, Properties, and Applications”, Springer-Nature, under preparation (2018).

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## Published Journal Papers

Over 2000 citations, with average citations per paper of 32.39, *h*-index: 25 (Web of Science™)

Seven 🔥 *Hot Papers*, and fifteen 🏆 *Highly Cited Papers* on Web of Science™, as of October 2018.

*Hot Paper on Web of Science™*: A paper published in the past two years that received enough citations to place it in the [top 0.1%](#) of papers in the academic field of Materials Science.

*Highly Cited Paper on Web of Science™*: A paper that received enough citations to place it in the [top 1%](#) of the academic field of Materials Science.

Thomson Reuters’ ResearcherID: [O-4828-2015](#)

Google Scholar profile: <https://scholar.google.com/citations?user=M6wPYpAAAAAJ&hl=en>

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## 2018

- [79] A. Sarycheva, A. Polemi, Y. Liu, K. Dandekar, B. Anasori\*, Y. Gogotsi\*, “2D titanium carbide (MXene) for wireless communication”, *Science Advances*, 4, eaau0920 (2018). [DOI]
- [78] Y. Xia, T. S. Mathis, M. Q. Zhao, B. Anasori, A. Dang, Z. Zhou, H. Cho, Y. Gogotsi, S. Yang, “Thickness-independent Capacitance of Vertically Aligned Liquid-crystalline MXenes”, *Nature*, 557, 409 (2018). [DOI]
- [77] A. Lipatov, H. Lu, M. Alhabeab, B. Anasori, A. Gruverman, Y. Gogotsi, A. Sinitskii, “Elastic Properties of 2D Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene Monolayers and Bilayers”, *Science Advances*, 4, eaat0491 (2018). [DOI]
- [76] J. Guo, B. Legum, B. Anasori, K. Wang, P. Lelyukh, Y. Gogotsi, C. A. Randall, “Cold Sintered Ceramic Nanocomposites of 2D MXene and Zinc Oxide”, *Advanced Materials*, 30, 1801846 (2018). [DOI]
- [75] X. Sang, Y. Xie, D. E. Yilmaz, R. Lotfi, M. Alhabeab, A. Ostadhossein, B. Anasori, W. Sun, X. Li, K. Xiao, P. R. C. Kent, A. C. T. van Duin, Y. Gogotsi, R. R. Unocic, “In situ Atomistic Insight into the Growth Mechanisms of Single Layer 2D Transition Metal Carbides”, *Nature Communications*, 9, 2266 (2018). [DOI]
- [74] L. Yu, L. Hu, B. Anasori, Y. T. Liu, Q. Zhu, P. Zhang, Y. Gogotsi, B. Xu, “MXene-Bonded Activated Carbon as a Flexible Electrode for High-Performance Supercapacitors”, *ACS Energy Letters*, 3, 1597-1603 (2018). [DOI]
- [73] N. C. Frey, H. Kumar, B. Anasori, Y. Gogotsi, V. B. Shenoy, “Tuning Noncollinear Spin Structure and Anisotropy in Ferromagnetic Nitride MXenes”, *ACS Nano*, 12, 6319-6325 (2018). [DOI]
- [72] F. Alimohammadi, M. Sharifian, N. H. Attanayake, A. C. Thenuwara, Y. Gogotsi, B. Anasori, D. R. Strongin, “Antimicrobial Properties of 2D MnO<sub>2</sub> and MoS<sub>2</sub> Nanomaterials Vertically Aligned on Graphene Materials and Ti<sub>3</sub>C<sub>2</sub> MXene”, *Langmuir*, 34, 7192-7200 (2018). [DOI]
- [71] Y. T. Liu, P. Zhang, N. Sun, B. Anasori, Q. Z. Zhu, H. Liu, Y. Gogotsi, B. Xu, “Self-Assembly of Transition Metal Oxide Nanostructures on MXene Nanosheets for Fast and Stable Lithium Storage”, *Advanced Materials*, 6, 1707334 (2018). [DOI]
- [70] B. Akuzum, K. Maleski, B. Anasori, P. Lelyukh, N. J. Alvarez, E. C. Kumbur, Y. Gogotsi, “Rheological Characteristics of 2D Titanium Carbide (MXene) Dispersions: A Guide for Processing MXenes”, *ACS Nano*, 12 (3), 2685-2694 (2018). [DOI]
- [69] X. Xie, K. Kretschmer, B. Anasori, B. Sun, G. Wang, Y. Gogotsi, “Porous Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene for Ultrahigh-Rate Sodium-Ion Storage with Long Cycle Life”, *ACS Applied Nano Materials*, 1, 505-511 (2018). [DOI]

- [68] Z. Zhou, W. Panatdasirisuk, T. S. Mathis, B. Anasori, C. Lu, X. Zhang, Z. Liao, Y. Gogotsi, S. Yang, “Layer-by-layer assembly of MXene and carbon nanotubes on electrospun polymer films for flexible energy storage”, *Nanoscale*, 10, 6005-6013 (2018). [DOI]
- [67] C. Chen, M. Boota, P. Urbankowski, B. Anasori, L. Miao, J. Jiang, Y. Gogotsi, “Effect of Glycine Functionalization of 2D Titanium Carbide (MXene) on Charge Storage”, *Journal of Materials Chemistry A*, 6, 4617-4622 (2018). [DOI]
- [66] S. J. Kim, H-J. Koh, C. E. Ren, O. Kwon, K. Maleski, S-Y Cho, B. Anasori, C-K. Kim, Y-K. Choi, J. Kim, Y. Gogotsi, H-T. Jung, “Metallic  $Ti_3C_2T_x$  MXene Gas Sensors with Ultrahigh Signal-to-Noise Ratio”, *ACS Nano*, 12, 986-993 (2018). [DOI]  
*ACS Editors' Choice Article.*
- [65] Y. Dong, S. Chertopalov, K. Maleski, B. Anasori, L. Hu, S. Bhattacharya, A. M. Rao, Y. Gogotsi, V. N. Mochalin, R. Podila, “Saturable Absorption in 2D  $Ti_3C_2$  MXene Thin Films for Passive Photonic Diodes”, *Advanced Materials*, 30, 1705714 (2018). [DOI]
- [64] C. Chen, X. Xie, B. Anasori, A. Sarycheva, T. Makaryan, M-Q. Zhao, P. Urbankowski, L. Miao, J. Jiang, Y. Gogotsi, “ $MoS_2$ -on-MXene Heterostructures as Highly Reversible Anode Materials for Lithium-ion Batteries”, *Angewandte Chemie*, 57, 1846-1850 (2018). [DOI]  
*Very Important Paper (VIP).*
- [63] G. Choi, F. Shahzad, Y-M Bahk, Y. M. Jhon, H. Park, M. Alhabeb, B. Anasori, D-S. Kim, C. M. Koo, Y. Gogotsi, M. Seo, “Enhanced Terahertz Shielding of MXenes with Nano-Metamaterials”, *Advanced Optical Materials*, 6, 1701076 (2018). [DOI]
- [62] B. Xu, H. Wang, Q. Zhu, N. Sun, B. Anasori, L. Hu, F. Wang, Y. Guan, Y. Gogotsi, “Reduced Graphene Oxide as a Multi-Functional Conductive Binder for Supercapacitor Electrodes”, *Energy Storage Materials*, 12, 128-136 (2018). [DOI]
- [61] C. J. Zhang, M. P. Kremer, A. Seral-Ascaso, S-H Park, N. McEvoy, B. Anasori, Y. Gogotsi, V. Nicolosi, “Stamping of Flexible, Coplanar Micro-Supercapacitors Using MXene Inks”, *Advanced Functional Materials*, 28, 1705506 (2018). [DOI]
- [60] C. Couly, M. Alhabeb, K. L. Van Aken, N. Kurra, L. Gomes, A. M. Navarro-Suárez, B. Anasori, H. N. Alshareef, Y. Gogotsi, “Asymmetric Flexible MXene-Reduced Graphene Oxide Micro-Supercapacitor”, *Advanced Electronic Materials*, 4, 1700339 (2018). [DOI]
- [59] A. D. Handoko, K. D. Fredrickson, B. Anasori, K. W. Convey, L. R. Johnson, Y. Gogotsi, A. Vojvodic, Z. W. Seh, “Tuning the Basal Plane Functionalization of Two-Dimensional Metal Carbides (MXenes) to Control Hydrogen Evolution Activity”, *ACS Applied Energy Materials*, 1, 173-180 (2018). [DOI]

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## 2017

- [58] B. Anasori, M. R. Lukatskaya, Y. Gogotsi, “2D Metal Carbides and Nitrides (MXenes) for Energy Storage”, *Nature Reviews Materials*, 2, 16098 (2017). [DOI]  
Cover Story  
🔥 Hot Paper on Web of Science, May 2017 - June 2018.  
👑 Highly Cited Paper on Web of Science, May 2017- June 2018.
- [57] B. Anasori, A. Sarycheva, S. Buondonno, Z. Zhou, S. Yang, Y. Gogotsi, “2D Metal Carbides (MXenes) in Fibers”, *Materials Today*, 20, 481-482 Uncovered (2017). [DOI]  
Cover Story.
- [56] Y. I. Jhon\*, J. Koo\*, B. Anasori\*, M. Seo, J. H. Lee, Y. Gogotsi, Y. M. Jhon, “Metallic MXene Saturable Absorber for Femtosecond Mode-Locked Lasers”, *Advanced Materials*, 29, 1702496 (2017). \*Authors contributed equally. [DOI]  
Inside Back Cover Story.
- [55] M. Alhabeb, K. Maleski, B. Anasori, P. Lelyukh, L. Clark, S. Sin, Y. Gogotsi, “Guidelines for Synthesis and Processing of 2D Titanium Carbide ( $Ti_3C_2T_x$  MXene)”, *Chemistry of Materials*, 29,



- 7633-44 (2017). [DOI]  
 Hot Paper on Web of Science, March - June 2018.  
 Highly Cited Paper on Web of Science, March - June 2018.
- [54] P. Urbankowski, B. Anasori, K. Hantanasirisakul, L. Yang, L. Zhang, B. Haines, S. J. May, S. J. L. Billinge, Y. Gogotsi, “2D Molybdenum and Vanadium Nitrides Synthesized by Ammoniation of 2D Transition Metal Carbides (MXenes)”, *Nanoscale*, 9, 17722-17730 (2018). [DOI]
- [53] H. Kumar, N. C. Frey, L. Dong, B. Anasori, Y. Gogotsi, V. Shenoy, “Tunable Magnetism and Transport Properties in Nitride MXenes”, *ACS Nano*, 11, 7648-7655 (2017). [DOI]  
 Accompanied by a perspective article. [DOI]
- [52] C. Zhang, B. Anasori, A. Seral-Ascaso, S-H. Park, N. McEvoy, A. Shmeliov, G. S. Duesberg, J. N. Coleman, Y. Gogotsi, V. Nicolosi, “Transparent, Flexible, and Conductive 2D Titanium Carbide (MXene) Films with High Volumetric Capacitance”, *Advanced Materials*, 29, 1702678 (2017). [DOI] Very Important Paper (VIP).  
 Hot Paper on Web of Science, November 2017- April 2018.  
 Highly Cited Paper on Web of Science, March - June 2018.
- [51] M. Nelson, M. T. Agne, B. Anasori, J. Yang, M. W. Barsoum, “Synthesis and characterization of the mechanical properties of  $Ti_3SiC_2/Mg$  and  $Cr_2AlC/Mg$  alloy composites”, *Materials Science & Engineering: A*, 705, 182-188 (2017). [DOI]
- [50] M-Q. Zhao, X. Xie, C. E. Ren, T. Makaryan, B. Anasori, G. Wang, Y. Gogotsi, “Hollow MXene Spheres and 3D Macroporous MXene Frameworks for Na-Ion Storage”, *Advanced Materials*, 29, 1702410 (2017). [DOI]  
 Hot Paper on Web of Science, May/June 2018.  
 Highly Cited Paper on Web of Science, May/June 2018.
- [49] C. Zhang, S. Pinilla, N. McEvoy, C. P. Cullen, B. Anasori, E. Long, S. H. Park, A. Seral-Ascaso, A. Shmeliov, D. Krishnan, C. Morant, X. Liu, G. S. Duesberg, Y. Gogotsi, V. Nicolosi, “Oxidation Stability of Colloidal Two-Dimensional Titanium Carbides (MXenes)”, *Chemistry of Materials*, 29, 4848-4856 (2017). [DOI]  
 Highly Cited Paper on Web of Science, November-December 2017.
- [48] S-M. Bak, R. Qiao, W. Yang, S. Lee, X. Yu, B. Anasori, H. Lee, Y. Gogotsi, X-Q. Yang, “Na-Ion Intercalation and Charge Storage Mechanism in Two-Dimensional Vanadium Carbide”, *Advanced Energy Materials*, 7, 1700959 (2017). [DOI]
- [47] H. Kim, B. Anasori, Y. Gogotsi, H. N. Alshareef, “Thermoelectric Properties of Two-Dimensional Molybdenum-based MXenes”, *Chemistry of Materials*, 29, 6472-6479 (2017). [DOI]
- [46] M. Han, X. Yin, X. Li, B. Anasori, L. Zhang, L. Cheng, Y. Gogotsi, “Laminated and Two-Dimensional Carbon-Supported Microwave Absorbers Derived from MXenes”, *ACS Applied Materials & Interfaces*, 9, 20038-20045 (2017). [DOI]  
 Highly Cited Paper on Web of Science, March - June 2018.
- [45] J. Yan, C. E. Ren, K. Maleski, C. B. Hatter, B. Anasori, P. Urbankowski, A. Sarycheva, Y. Gogotsi, “Flexible MXene/Graphene Films for Ultrafast Supercapacitors with Outstanding Volumetric Capacitance”, *Advanced Functional Materials*, 27, 1701264 (2017). [DOI]  
 Highly Cited Paper on Web of Science, March - June 2018.
- [44] T. L. Tan, H. Jin, M. Sullivan, B. Anasori, Y. Gogotsi, “A High-Throughput Survey of Ordering Configurations in MXene Alloys Across Compositions and Temperatures”, *ACS Nano*, 11, 4407-4418 (2017). [DOI]
- [43] Q. Zhu, Q. Zhao, Y. An, B. Anasori, H. Wang, B. Xu, “Ultra-microporous Carbons Encapsulate Small Sulfur Molecules for High Performance Lithium-Sulfur Battery”, *Nano Energy* 33, 402-409 (2017). [DOI]



- [42] C. Chen, M. Boota, X. Xie, M-Q Zhao, B. Anasori, C. E. Ren, L. Miao, J. Jiang, Y. Gogotsi, “Charge Transfer Induced Polymerization of EDOT Confined between 2D Titanium Carbide Layers”, *Journal of Materials Chemistry A*, 5, 5260-5265 (2017). [DOI]
- [41] L. Dong, H. Kumar, B. Anasori, Y. Gogotsi, V. Shenoy, “Rational Design of 2-Dimensional Metallic and Semiconducting Spintronic Materials Based on Ordered Double-Transition-Metal MXenes” *Journal of Physical Chemistry Letters*, 8, 422-428 (2017). [DOI]

---

## 2016



- [40] F. Shahzad, M. Alhabeab, C. B. Hatter, B. Anasori, M. H. Soon, C. M. Koo, Y. Gogotsi, “Electromagnetic Interference Shielding with 2D Transition Metal Carbide (MXenes)”, *Science*, 353, 1137-1140 (2016). [DOI]  
 *Hot Paper on Web of Science, March 2017 - June 2018.*  
 *Highly Cited Paper on Web of Science, March 2017 - June 2018.*
- [39] K. D. Fredrickson, B. Anasori, Z. W. She, Y. Gogotsi, A. Vojvodic, “Effects of Applied Potential and Water Intercalation on the Surface Chemistry of Ti<sub>2</sub>C and Mo<sub>2</sub>C MXenes”, *Journal of Physical Chemistry C*, 120, 28432-28440 (2016). [DOI]
- [38] N. Jäckel, B. Krüner, K. L. Van Aken, M. Alhabeab, B. Anasori, F. Kaasik, Y. Gogotsi, V. Presser, “Electrochemical in situ Tracking of Volumetric Changes in Two-dimensional Metal Carbides (MXenes) in Ionic Liquids”, *ACS Applied Materials & Interfaces*, 8, 32089-32093 (2016). [DOI]
- [37] J. Xu, M-Q. Zhao, Y. Wang, W. Yao, C. Chen, B. Anasori, A. Sarycheva, C. E. Ren, T. Mathis, L. Gomes, Z. Liang, Y. Gogotsi, “Demonstration of Li-ion capacity of MAX phases”, *ACS Energy Letters*, 1, 1094-1099 (2016). [DOI]
- [36] M-Q. Zhao, M. Torelli, C. E. Ren, M. Ghidui, Z. Ling, B. Anasori, M. W. Barsoum, Y. Gogotsi, “2D Titanium Carbide and Transition Metal Oxides Hybrid Electrodes for Li-Ion Storage”, *Nano Energy*, 30, 603-613 (2016). [DOI]
- [35] Z. Lin, P. Rozier, B. Duployer, P. L. Taberna, B. Anasori, Y. Gogotsi, P. Simon, “Electrochemical and In-situ X-ray Diffraction Studies of Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene in Ionic Liquid Electrolyte”, *Electrochemistry Communications*, 72, 50-53 (2016). [DOI]
- [34] Z. W. Seh, K. D. Fredrickson, B. Anasori, J. Kibsgaard, A. L. Strickler, M. R. Lukatskaya, Y. Gogotsi, T. F. Jaramillo, A. Vojvodic, “Two-Dimensional Molybdenum Carbide (MXene) as an Efficient Electrocatalyst for Hydrogen Evolution”, *ACS Energy Letters*, 1, 589-594 (2016). [DOI]  
 *Highly Cited Paper on Web of Science, May 2017 - June 2018.*
- [33] Y. Peng, B. Akuzum, N. Kurra, M. Zhao, M. Alhabeab, B. Anasori, E. C. Kumbur, H. Alshareef, M. Ger, Y. Gogotsi, “All-MXene (2D Titanium Carbide) Solid-state Microsupercapacitors for On-chip Energy Storage”, *Energy and Environmental Science*, 9, 2847-2854 (2016). [DOI]  
 *Highly Cited Paper on Web of Science, May/June 2018.*
- [32] X. Xie, M-Q. Zhao, B. Anasori, K. Maleski, C. E. Ren, Jingwen Li, Bryan W. Byles, Ekaterina Pomerantseva, G. Wang, Y. Gogotsi, “Porous Heterostructured MXene/Carbon Nanotube Composite Paper with High Volumetric Capacity for Sodium-Based Energy Storage Devices”, *Nano Energy*, 26, 513-523 (2016). [DOI]  
 *Hot Paper on Web of Science, March/April 2018.*  
 *Highly Cited Paper on Web of Science, September 2017 - June 2018.*
- [31] P. Urbankowski\*, B. Anasori\*, T. Makaryan, D. Er, S. Kota, P. W. Walsh, M-Q. Zhao, V. Shenoy, M. W. Barsoum, Y. Gogotsi, “Synthesis of Two-dimensional Titanium Nitride Ti<sub>4</sub>N<sub>3</sub> (MXene)”, *Nanoscale*, 8, 11385-1139 (2016). \*Authors contributed equally. [DOI]  
 *Highly Cited Paper on Web of Science, July 2017 - June 2018.*
- [30] A. Byeon, M-Q. Zhao, C. E. Ren, J. Halim, S. Kota, P. Urbankowski, B. Anasori, M. W. Barsoum, Y. Gogotsi, “Two-dimensional Titanium Carbide MXene as a Cathode Material for Hybrid Magnesium/Lithium-ion Batteries”, *ACS Applied Materials & Interfaces*, 9, 4296-4300 (2016).

[DOI]

- [29] Z. Lin, D. Barbara, P. Taberna, K. L. Van Aken, B. Anasori, Yury Gogotsi, P. Simon, “Capacitance of  $Ti_3C_2T_x$  MXene in Ionic Liquid Electrolyte”, *Journal of Power Sources*, 326, 575-579 (2016). [DOI]  *Hot Paper on Web of Science, January - April 2017.*
- [28] B. Anasori, C. Shi, E-J. Moon, Y. Xie, C. Voigt, E. Dooryhee, P. R. C. Kent, S. J. May, S. J. L. Billinge, M. W. Barsoum, Y. Gogotsi, “Controlling of Electronic Properties of 2D Carbides (MXenes) by Manipulating Their Transition Metal Layers”, *Nanoscale Horizons*, 1, 227-334 (2016). [DOI] *Inside Cover Story.*
- [27] K. Hantanasirisakul, M-Q. Zhao, P. Urbankowski, J. Halim, B. Anasori, S. Kota, C. E. Ren, M. W. Barsoum, Y. Gogotsi, “Fabrication of  $Ti_3C_2T_x$  MXene Transparent Thin Films with Tunable Optoelectronic Properties”, *Advanced Electronic Materials*, 2, 1600050 (2016). [DOI] *Very Important Paper (VIP).*
- [26] A-Y. Byeon, A. M. Glushenkov, B. Anasori, P. Urbankowski, J. Li, B. Byles, B. Blake, K. L. Van Aken, S. Kota, M. W. Barsoum, E. Pomerantseva, J. W. Lee, Y. Chen and Y. Gogotsi, “Lithium-Ion Capacitors with 2D  $Nb_2CT_x$  (MXene) - Carbon Nanotube Electrodes”, *Journal of Power Sources*, 326, 686-694 (2016). [DOI]
- [25] C. E. Ren, M-Q Zhao, T. Makaryan, J. Halim, M. Boota, S. Kota, B. Anasori, M. W. Barsoum, Y. Gogotsi, “Porous Two-Dimensional Transition Metal Carbide (MXene) Flakes for High-Performance Li-Ion Storage”, *ChemElectroChem*, 3, 689-693 (2016). [DOI] *Back Cover Story.*  *Highly Cited Paper on Web of Science, May 2017 - June 2018.*
- [24] M. Boota, B. Anasori, C. A. Voigt, M-Q. Zhao, M. W. Barsoum, Y. Gogotsi, “Pseudocapacitive Electrodes Produced by Oxidant-free Polymerization of Pyrrole Between the Layers of 2D Titanium Carbide (MXene)”, *Advanced Materials*, 28, 1517-1522 (2016). [DOI]  *Highly Cited Paper on Web of Science, January 2017 - June 2018.*
- [23] B. Anasori, M. W. Barsoum, “Energy Damping in Mg Alloy Composites Reinforced with TiC or  $Ti_2AlC$  Particulates”, *Materials Science and Engineering A*, 653, 53-62 (2016). [DOI]
- [22] D. Stanley, J. Awerbuch, T-M. Tan, B. Anasori, “Reconstruction of Fatigue Crack Growth in AA2024-T3 and AA2198-T8 Fastened Lap Joints”, *Theoretical and Applied Fracture Mechanics*, 82, 33-50 (2016). [DOI]

---

## 2015

- [21] B. Anasori, Y. Xie, M. Beidaghi, J. Lu, B. C. Hosler, L. Hultman, P. R. C. Kent, Y. Gogotsi, M. W. Barsoum, “Two-Dimensional, Ordered, Double Transition Metals Carbides (MXenes)”, *ACS Nano*, 9, 9507-9516 (2015). [DOI] *Cover Story and ACS Editors' Choice Article.*  *Highly Cited Paper on Web of Science, January 2017 - June 2018.*  *Hot Paper on Web of Science, January-October 2017.*
- [20] B. Anasori, M. Dahlqvist, J. Halim, E. J. Moon, J. Lu, B. C. Hosler., E. N. Caspi, S. May, L. Hultman, P. Eklund, J. Rosén, M. W. Barsoum, “Experimental and Theoretical Characterization of Ordered MAX Phases  $Mo_2TiAlC_2$  and  $Mo_2Ti_2AlC_3$ ”, *Journal of Applied Physics*, 118, 094304, (2015). [DOI]
- [19] B. Anasori, J. Halim, J. Lu, C. A. Voigt, L. Hultman, M. W. Barsoum, “ $Mo_2TiAlC_2$ : A New Ordered Layered Ternary Carbide”, *Scripta Materialia*, 101, 5-7 (2015). [DOI]
- [18] C.F. Hu, C.-C. Lai, Q.Z. Tao, J. Lu, J. Halim, L.C. Sun, J. Zhang, J.Y. Yang, B. Anasori, J. Wang, Y. Sakka, L. Hultman, P. Eklund, J. Rosen, M. W. Barsoum, “ $Mo_2Ga_2C$ : A New Ternary Nanolaminated Carbide”, *Chemical Communications*, 51, 6560-6563 (2015). [DOI]

- [17] G. W. Bentzel, M. Ghidui, B. Anasori, M. W. Barsoum, "On the Interactions of  $Ti_2AlC$ ,  $Ti_3AlC_2$ ,  $Ti_3SiC_2$  and  $Cr_2AlC$  with Silicon Carbide and Pyrolytic Carbon at 1300 °C", *Journal of European Ceramic Society*, 35, 4107-4114 (2015). [DOI]
- [16] M. Shamma, E. N. Caspi, B. Anasori, B. Clausen, D. W. Brown, S. C. Vogel, V. Presser, S. Amini, O. Yehekel and M. W. Barsoum, "In situ Neutron Diffraction Evidence for Incipient Kink Bands in Highly Textured Polycrystalline  $Ti_2AlC$  Samples", *Acta Materialia*, 98, 51-63(2015). [DOI]
- [15] K. J. Sunday, K. Darling, F. Hanejko, B. Anasori, Y. Liu, M. L. Taheri, " $Al_2O_3$  "Self-coated" Iron Powder Composites via Mechanical Milling", *Journal of Alloys and Compounds*, 653, 61-68 (2015). [DOI]
- [14] M. Agne, B. Anasori, M. W. Barsoum, "Reactions between  $Ti_2AlC$ ,  $B_4C$ , and Al and Phase Equilibria at 1000 °C in the Al-Ti-B-C Quaternary System", *Journal of Phase Equilibria and Diffusion*, 36, 169-182 (2015), [DOI]  
*Editor Choice Award.*
- [13] D. J. Tallman, J. Yang, L. Pan, B. Anasori, M. W. Barsoum, "Reactivity of Zircaloy-4 with  $Ti_3SiC_2$  and  $Ti_2AlC$  in the 1100 to 1300 °C Temperature Range", *Journal of Nuclear Materials*, 460, 122-129 (2015). [DOI]
- [12] H. Gong, B. Anasori, C. R. Dennison, K. Wang, E. C. Kumbur, R. Strich, J. G. Zhou, "Fabrication, Biodegradation Behavior and Cytotoxicity of Mg-nanodiamond Composites for Implant Application", *Journal of Materials Science: Materials in Medicine*, 26, 2, 1-9 (2015). [DOI]

---

## 2014

- [11] B. Anasori, E. N. Caspi, M. W. Barsoum, "Fabrication and Mechanical Properties of Pressureless Melt Infiltrated Magnesium Alloy Composites Reinforced with TiC and  $Ti_2AlC$  Particles", *Materials Science & Engineering A*, 618, 511-522 (2014). [DOI]
- [10] B. Anasori, M. Beidaghi, Y. Gogotsi, "Graphene – Transition Metal Oxide Hybrid Materials", *Materials Today*, 17, 253-254 (2014). [DOI]
- [9] A. Mockute, J. Lu, E. J. Moon, M. Yang, B. Anasori, S. J. May, M. W. Barsoum, J. Rosen: "Solid Solubility and Magnetism upon Mn Incorporation in Bulk  $Cr_2AlC$  and  $Cr_2GaC$  MAX Phases", *Materials Research Letters*, 3, 16-22 (2014). [DOI]

---

## 2013

- [8] B. Anasori, M. W. Barsoum: "Reversible Dislocation Motion and Microcracking in Plastically Anisotropic Solids under Cyclic Spherical Nanoindentation", *MRS Communications*, 3, 245-248 (2013). [DOI]
- [7] B. Anasori, Y. Elraheb, E. N. Caspi, M. W. Barsoum, "On the Cyclic Oxidation of  $Ti_2GeC$  in Air", *Journal of Alloys and Compounds*, 580, 550-557 (2013). [DOI]
- [6] D. J. Tallman, B. Anasori, M. W. Barsoum, "A Critical Review of the Oxidation of  $Ti_2AlC$ ,  $Ti_3AlC_2$  and  $Cr_2AlC$  in Air", *Materials Research Letters*, 1, 115-125 (2013). [DOI]

---

## 2012

- [5] D. J. Tallman, M. Naguib, B. Anasori, M. W. Barsoum, "Tensile Creep of  $Ti_2AlC$  in Air in the 1000-1150 °C Temperature Range", *Scripta Materialia*, 66, 805-808 (2012). [DOI]
- [4] S. Basu, O.A. Elshrief, R. Coward, B. Anasori, M.W. Barsoum, "Microscale Deformation of (001) and (100) Rutile Single Crystals under Spherical Nanoindentation", *Journal of Materials Research*, 27, 1, 53-63 (2012). [DOI]

---

## 2011

- [3] B. Anasori, K. E. Sickafus, Igor O. Usov, M. W. Barsoum, "Spherical Nanoindentation Study of the Deformation Micromechanisms of  $LiTaO_3$  Single Crystals". *Journal of Applied Physics*, 110, 023516 (2011). [DOI]

- [2] A. Kontsos, T. Loutas, V. Kostopoulos, K. Hazeli, B. Anasori, M. W. Barsoum. “Nanocrystalline Mg-MAX Composites: Mechanical Behavior Characterization via Acoustic Emission Monitoring”, *Acta Materialia*, 59, 5716-5727 (2011). [DOI]
- [1] O. Yeheskel, I. C. Albayrak, B. Anasori, M. W. Barsoum, “Mechanical and Elastic Properties of Fine-grained Polycrystalline Scandia and Erbium as Determined by Indentation Techniques”, *Journal of the European Ceramic Society*, 31, 1703-1712 (2011). [DOI]

---

### Peer-reviewed Conference Proceedings

- [3] B. Anasori, F. Saillot, D. Stanley, J. Awerbuch, T. Tan: “Fatigue Crack Growth in Aluminum Lithium Riveted Lap Joints”, *Procedia Engineering*, 74, 413-416, 2014. [DOI]
- [2] B. Anasori, M. W. Barsoum, “On the Effect of Ti<sub>2</sub>AlC on the Fabrication of Extraordinary Thermally Stable Mg Nano Grains”, *Magnesium Technology 2012*, John Wiley & Sons, Inc. New York. [DOI]
- [1] B. Anasori, S. Amini, V. Presser, M. W. Barsoum, “Nanocrystalline Mg-Matrix Composites with Ultrahigh Damping Properties”, *Magnesium Technology 2011*, John Wiley & Sons, Inc. New York, 463-468. [DOI]

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### Conference Presentations

- 2018 **Invited** B. Anasori, Kathleen Maleski, Patrick Urbankowski, Christine Hatter, Tyler Mathis, Kanit Hantanasirisakul, Ariana Levitt, Yury Gogotsi, “Synthesis of 2D metal carbides and nitrides (MXenes) and their applications”, **MRS Fall Meeting**, Boston, MA (November 2018).
- 2018 **Invited** B. Anasori, “2D metal carbides and nitrides (MXenes) for energy harvesting”, The 2<sup>nd</sup> Annual **Energy Harvesting Society Meeting**, Philadelphia, PA (September 2018).
- 2018 **Invited** B. Anasori, Y. Gogotsi, “2D atomic sandwiches of ordered double-transition metal carbides (MXenes)”, **CIMTEC 2018 - 14th International Ceramics Congress & 8th Forum on New Materials**, Perugia, Italy (June 2018).
- 2018 B. Anasori, Kathleen Maleski, Christine Hatter, Y. Gogotsi, “2D Metal Carbide MXene-based Soft Materials”, **MRS Spring Meeting**, Phoenix, AZ (April 2018).
- 2018 **Invited** B. Anasori, Y. Gogotsi, “Ordered quaternary MAX phases and their 2D ordered double-transition metal carbide MXenes”, **ICACC**, International Conference and Expo on Advanced Ceramics and Composites (ACerS), Daytona Beach, FL (January 2018).
- 2017 B. Anasori, Kathleen Maleski, Kanit Hantanasirisakul, Y. Gogotsi, “2D Atomic Sandwiches in Ordered Multi-Elemental MXenes”, **MRS Fall Meeting**, Boston, MA (November 2017).
- 2017 **Invited** B. Anasori, Y. Gogotsi, “2D Metal Carbides and Nitrides (MXenes) for Green Technologies”, **MS&T Annual Meeting**, Pittsburgh, PA (October 2017).
- 2017 B. Anasori, M. Alhabeab, E-J. Moon, H. Kumar, L. Dong, E. S. Choi, N. Trainor, B. Haines, V. B. Shenoy, S. J. May, Y. Gogotsi, “Synthesis of 2D chromium carbide MXene and its magnetic properties”, **MRS Spring Meeting**, Phoenix, AZ (April 2017).
- 2016 B. Anasori, Y. Gogotsi, “Tuning Electronic, Optical, Magnetic and Electrochemical Properties of 2D Transition Metals Carbides and Nitrides (MXenes)”, **MRS Fall Meeting**, Boston, MA (November 2016).
- 2016 B. Anasori, C. Shi, E-J. Moon, Y. Xie, C. Voigt, E. Dooryhee, P. R. C. Kent, S. J. May, S. J. L. Billinge, M. W. Barsoum, Y. Gogotsi, “Engineering Electronic Properties of 2D Carbides (MXenes) by Manipulating Their Transition Metal Layers”, **MRS Spring Meeting**, Phoenix, AZ (March 2016).
- 2015 B. Anasori, Y. Xie, M. Beidaghi, J. Lu, B. C. Hosler, L. Hultman, P. R. C. Kent, Y. Gogotsi, M. W. Barsoum, “Discovery of New Two-Dimensional, Ordered, Double Transition Metals Carbides (MXenes)”, **MRS Fall Meeting**, Boston, MA (November 2015).
- 2014 B. Anasori, F. Saillot, D. Stanley, K. Stonaker, J. G. Bakuckas, J. Awerbuch, T. Tan: “Reconstruction of fatigue crack growth of aluminum lithium riveted lap joints”, **AA&S 2014**, Baltimore, MD (April 2014).
- 2013 B. Anasori, M. W. Barsoum, “Reversible Dislocation Motion and Microcracking in Plastically Anisotropic Solids under Cyclic Spherical Nanoindentation”, **MRS Fall Meeting**, Boston, MA (December 2013).

- 2013 B. Anasori, M. W. Barsoum, "Effect of alloying and interfaces on the mechanical properties of nano-grained Mg-Ti<sub>2</sub>AlC composites", **TMS Annual Meeting**, San Antonio, FL (March 2013).
- 2012 B. Anasori, M. W. Barsoum, "Nano-grained Mg Composites Reinforced with MAX Phases", **MRS Fall Meeting**, Boston, MA (November 2012).
- 2012 B. Anasori, M. Agne, M. W. Barsoum, "Thermally stable Nano-grain Mg Composites Reinforced with MAX Phases", **MS&T Annual Meeting**, Pittsburgh, PA (October 2012).
- 2012 B. Anasori, M. W. Barsoum, "Microcracking and Reversible Dislocation Motion in Plastically Anisotropic Solids Under Cyclic Spherical Nanoindentation", **Nano Measure Symposium**, Stanford, CA (June 2012).
- 2012 B. Anasori, M. W. Barsoum, "On the Effect of Ti<sub>2</sub>AlC on the Formation of Thermally Stable Mg Nano Grains", **TMS Annual Meeting**, Orlando, FL (March 2012).
- 2011 B. Anasori, M. W. Barsoum, "Investigation of the Formation and Extraordinary Thermal Stability of Mg Nano-grains in Ti<sub>2</sub>AlC-Mg Composites", **MS&T Meeting**, Columbus, OH (October 2011).
- 2011 B. Anasori, K. E. Sickafus, I. O. Usov, M. W. Barsoum, "Spherical Nanoindentation and Kinking Non-linear Elasticity of LiTaO<sub>3</sub> Single Crystals", **MS&T Meeting**, Columbus, OH (October 2011).
- 2011 B. Anasori, A. Kontsos, K. Hazeli, M. W. Barsoum, "Mechanical Properties of Nanocrystalline Mg-Matrix Composites Reinforced with Ti<sub>2</sub>AlC", **ASME Applied Mech. and Mat. Conf.**, Chicago, IL (May 2011).
- 2011 B. Anasori, M. W. Barsoum, "Extraordinary Thermally Stable Nanocrystalline Mg-matrix Composites with Ultrahigh Damping Properties" **AIAA Greater Philadelphia Regional Aerospace Engineering and Technology Symposium**, Newtown, PA (April 2011).
- 2011 B. Anasori, S. Amini, V. Presser, M. W. Barsoum, "Effect of Reinforcement Volume Fraction on the Properties of Nanocrystalline Mg Matrix Composite Reinforced with Ti<sub>2</sub>AlC", **TMS Annual Meeting**, San Diego, CA (February 2011).
- 2011 B. Anasori, S. Amini, V. Presser, M. W. Barsoum, "Nanocrystalline Mg-Matrix Composites with Ultrahigh Damping Properties", **TMS Annual Meeting**, San Diego, CA (February 2011).
- 2011 B. Anasori, Y. Elraheb, M. W. Barsoum, "Isothermal Oxidation of Ti<sub>2</sub>GeC in Air", **ICACC**, International Conference and Expo on Advanced Ceramics and Composites (ACerS), Daytona Beach, FL (January 2011).
- 2011 S. Amini, M. W. Barsoum, B. Anasori, "Thermal Stability and Effect of Texture on Ultrahigh Damping of Nanocrystalline Mg-Matrix Composites Reinforced with MAX Phases", **ICACC**, International Conference and Expo on Advanced Ceramics and Composites (ACerS), Daytona Beach, FL (January 2011).
- 2010 S. Amini, B. Anasori, J. M. C. Gallego, A. R. McGhie, C. Ni, L. Hultman, M. W. Barsoum, "Mechanical Properties and Kinking Non-Linear Elasticity of Nano Crystalline Mg-Matrix Composites Reinforced with MAX Phases", **MS&T Meeting**, Houston, TX (October 2010).
- 2010 B. Anasori, S. Amini, M. W. Barsoum, "Thermal Stability of Nanocrystalline Mg-Matrix Composites Reinforced with MAX Phases", **MS&T Meeting**, Houston, TX (October 2010).
- 2010 B. Anasori, S. Amini, J. M. C. Gallego, A. R. McGhie, C. Ni, L. Hultman, M. W. Barsoum, "On the Thermal Stability of Nanocrystalline Mg-matrix Composites reinforced with MAX Phases", **NATAS Annual Conference**, Philadelphia, PA (August 2010).
- 2010 B. Anasori, S. Amini, M. W. Barsoum, "On the Stability of Mg Nanograins to Coarsening after Repeated Melting", **TAFDV Spring Symposium**, Philadelphia, PA (March 2010).