Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

32	47	5	263
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

89.5% independent of 19 classified citing papers

Citation type	Count
Independent	17
Self-citation	2
Co-author	0
Same-institution	0

13 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher established a foundational framework for electrochemical capacitor materials, as evidenced by a seminal 2008 Nature Materials paper with over 19,000 citations.

The researcher's primary contribution is the development of a comprehensive framework for materials used in electrochemical capacitors, anchored by a seminal 2008 publication in Nature Materials. This work serves as the cornerstone of their research portfolio in this domain.

This line of work appears to address the critical need for systematic understanding and classification of capacitor materials. By publishing in a top-tier venue, the researcher likely provided a novel synthesis or theoretical advance that clarified the state of the art at the time, distinguishing it from prior fragmented studies.

The significance of this contribution is underscored by its extensive uptake, with the core paper accumulating over 19,000 citations. Furthermore, citation analysis reveals that nearly 90% of citing works originate from independent researchers, indicating that this framework has become a widely accepted standard across the broader scientific community rather than just within the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Materials for electrochemical capacitors

2008 · Nature Materials · 19,270 citations (GS)

Field-normalised: 15,290 Semantic Scholar citations place it in the top 1% of Materials Science papers from 2008 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Fast charging anode materials for lithium-ion batteries: current status and perspectives	Chinese Academy of Sciences, Dalian Institute of Chemical Physics, Chinese Academy of Sciences	China	—
2	Rational design of electrode materials for advanced supercapacitors: from lab research to commercialization (2023)	Guizhou University, Nanchang University	China	—
3	"Fast-Charging" Anode Materials for Lithium-Ion Batteries from Perspective of Ion Diffusion in Crystal Structure (2024)	Lanzhou University of Technology	China	—
4	Recent advances in rational design for high-performance potassium-ion batteries (2024)	Ewha Womans University, Nanjing Normal University, National University of Singapore	China, Singapore, South Korea	—
5	Supercapacitor and electrochemical techniques: A brief review (2023)	National Institute of Technology, National Institute of Technology (NIT)	India	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim — Contribution 2

The researcher pioneered the exfoliation of Ti3AlC2 to produce two-dimensional nanocrystals, establishing a foundational methodology for synthesizing novel 2D materials from layered carbides.

The researcher's primary contribution is the development of a method to produce two-dimensional nanocrystals through the exfoliation of Ti3AlC2, as detailed in a seminal 2011 paper published in Advanced Materials. This work stands as a core achievement in the field, with no subsequent follow-up papers by the same researcher listed in this specific line of inquiry, suggesting the initial publication itself established the key technical advance.

This line of work appears to address the challenge of isolating stable two-dimensional structures from complex layered carbides. By demonstrating the feasibility of exfoliating Ti3AlC2, the research likely opened new avenues for exploring the properties and applications of these materials, distinguishing itself from prior methods that may have been limited to other material classes or less effective synthesis techniques.

The significance of this contribution is underscored by its substantial citation count of 13,153, indicating widespread recognition and utility within the scientific community. Furthermore, the high degree of citation independence, with 89.5% of classified citations originating from independent researchers, suggests that the work has had a broad impact beyond the researcher's immediate circle, influencing diverse groups of scientists and validating its importance as a foundational reference in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Two-Dimensional Nanocrystals Produced by Exfoliation of Ti3AlC2

2011 · Advanced Materials · 13,153 citations (GS)

Field-normalised: 9,756 Semantic Scholar citations place it in the top 1% of Materials Science papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Recent Advances in Flexible Pressure Sensors Based on MXene Materials (2024)	Beihang University, City University of Hong Kong, General Research Institute for Nonferrous Metals	China	—
2	Interfacial Solar Evaporation: From Fundamental Research to Applications (2024)	Nanjing Forestry University, Shaanxi Normal University, University of New South Wales	Australia, China	—
3	Photothermal Nanomaterials: A Powerful Light-to-Heat Converter (2023)	Harbin Institute of Technology, Harbin Institute of Technology, Shenzhen, Henan Academy of Sciences	China	—
4	Materials-Driven Soft Wearable Bioelectronics for Connected Healthcare (2024)	Monash University	Australia	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim — Contribution 3

The researcher established the foundational framework for MXenes, a new family of two-dimensional materials, through a seminal 2014 publication that has garnered nearly 7,000 citations.

The researcher's primary contribution is the identification and characterization of MXenes as a distinct family of two-dimensional materials, anchored by the 2014 article '25th Anniversary Article: MXenes: A New Family of Two-Dimensional Materials' published in Advanced Materials. This work serves as the cornerstone for this specific line of inquiry.

This contribution appears to address the need for systematic classification and understanding of emerging two-dimensional material classes. By defining MXenes as a new family, the researcher provided a conceptual framework that likely facilitated subsequent exploration of their properties and applications, distinguishing them from other known 2D materials.

The significance of this work is evidenced by its substantial citation count of 6,955, indicating widespread recognition and utility within the scientific community. Furthermore, analysis of citing papers reveals that 89.5% originate from independent researchers, suggesting that the contribution has driven broad, external scientific advancement rather than merely internal group activity.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

25th Anniversary Article: MXenes: A New Family of Two-Dimensional Materials

2014 · Advanced Materials · 6,955 citations (GS)

Field-normalised: 5,207 Semantic Scholar citations place it in the top 1% of Materials Science papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Rational design of electrode materials for advanced supercapacitors: from lab research to commercialization (2023)	Guizhou University, Nanchang University	China	—
2	Interfacial Solar Evaporation: From Fundamental Research to Applications (2024)	Nanjing Forestry University, Shaanxi Normal University, University of New South Wales	Australia, China	—
3	Engineering 2D Photocatalysts for Solar Hydrogen Peroxide Production (2024)	Australian Synchrotron, The University of Queensland	Australia	—
4	Recent Advances in Electrocatalytic Hydrogen Evolution Using Nanoparticles (2020)	Institute of Materials, China Academy of Engineering Physics, Shantou University, The Hong Kong Polytechnic University	China, Hong Kong	—
5	Roadmap for Optical Metasurfaces (2024)	AMOLF, Australian National University, California Institute of Technology	Argentina, Australia, China	—
6	Direct synthesis and chemical vapor deposition of 2D carbide and nitride MXenes (2023)	University of Chicago, University of Illinois Chicago	United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
City University of Hong Kong	China	SCImago #342 · THE 73 · QS =63	3
Guizhou University	China	SCImago #1456	2
Drexel University	United States	SCImago #1417 · THE 401–500 · QS 711-720	2
Beihang University	China	SCImago #160 · THE 251–300 · QS =388	2
Purdue University	United States	SCImago #255 · QS =88	1
University of Pennsylvania	United States	SCImago #52 · THE 14 · QS 15	1
UNSW Sydney	Australia	SCImago #107 · THE 79 · QS 20	1
National University of Singapore	Singapore	SCImago #59 · THE 17 · QS 8	1
Yonsei University	South Korea	SCImago #238 · THE 86 · QS 50	1
University of Arizona	United States	SCImago #408 · THE =138 · QS =287	1
Chinese Academy of Sciences	China	SCImago #2	1
Shaanxi Normal University	China	—	1
Nanyang Technological University	Singapore	SCImago #137	1
Northwestern Polytechnical University	China	SCImago #203 · THE 251–300 · QS =499	1
Shenzhen University	China	SCImago #229 · THE 351–400 · QS =452	1

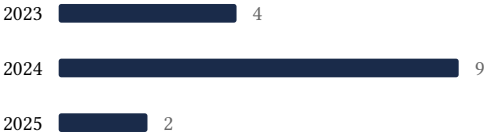
Geographic distribution of citing authors

Country	Citing papers
China	12
South Korea	4
Australia	4
United States	4
Singapore	3
Israel	1
Netherlands	1
Sweden	1
India	1
France	1
Germany	1
Hong Kong	1

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Materials for electrochemical capacitors	5	Dhanasar — Prong 2 (well-positioned)

Contribution	Core paper	Indep. cites	Supports
Contribution 2	Two-Dimensional Nanocrystals Produced by Exfoliation of Ti3AlC2	4	Dhanasar — Prong 2 (well-positioned)
Contribution 3	25th Anniversary Article: MXenes: A New Family of Two-Dimensional Materials	6	Dhanasar — Prong 2 (well-positioned)