Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

Kenji Watanabe

National Institute for Materials Science

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

14	15	3	239
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.

70.0% independent of 10 classified citing papers

Citation type	Count
Independent	7
Self-citation	3
Co-author	0
Same-institution	0

4 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 boron nitride as a critical substrate for high-quality graphene electronics, a foundational contribution evidenced by over 8,900 citations.

The researcher's core contribution rests on the 2010 paper 'Boron nitride substrates for high-quality graphene electronics.' This work appears to have defined a key material interface for advancing graphene-based electronic devices, serving as a seminal reference in the field.

This line of work addresses the challenge of maintaining graphene quality on substrates. By proposing boron nitride as a solution, the researcher likely provided a novel approach to minimizing substrate-induced disorder, a gap inferred from the specific focus on high-quality electronics in the title.

The significance of this contribution is underscored by its 8,916 citations, indicating widespread adoption. Furthermore, 70% of classified citations originate from independent researchers, suggesting the work has driven broad, external scientific progress beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Boron nitride substrates for high-quality graphene electronics

2010 · 8,916 citations (GS)

Field-normalised: 6,473 Semantic Scholar citations place it in the top 1% of Materials Science papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	2D Materials in Flexible Electronics: Recent Advances and Future Prospectives (2024)	Yonsei University	South Korea	—
2	The future transistors (2023)	IBM Research, Intel Corporation, Samsung Advanced Institute of Technology (SAIT), Samsung Electronics	France, Japan, South Korea	—
3	Van der Waals heterostructures (2013)	Iowa State University, National Tsing Hua University, Spanish National Research Council	China, Spain, Taiwan	Background

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 established the existence of correlated insulator behavior at half-filling in magic-angle graphene superlattices, a seminal finding published in Nature in 2018.

CLAIM: The researcher's primary contribution is the identification of correlated insulator behavior at half-filling in magic-angle graphene superlattices, as detailed in a 2018 Nature paper. This work stands as a singular, foundational achievement in the field.

ORIGINALITY: The title suggests the work addresses the electronic properties of twisted graphene layers, specifically focusing on the emergence of insulating states at half-filling. By isolating this behavior in magic-angle superlattices, the research appears to have opened a new avenue for understanding strongly correlated electron systems in two-dimensional materials.

SIGNIFICANCE: With over 5,700 citations, the paper is highly influential. Analysis of citing literature indicates that 70% of citations come from independent researchers, demonstrating broad adoption and validation of the findings across the global scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Correlated insulator behaviour at half-filling in magic-angle graphene superlattices

2018 · Nature · 5,762 citations (GS)

Field-normalised: 4,417 Semantic Scholar citations place it in the top 1% of Physics papers from 2018 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Synthesis, Modulation, and Application of Two-Dimensional TMD Heterostructures	Hunan University, Nanjing Tech University, Nanjing University of Posts and Telecommunications	China	—
2	A microscopic perspective on moiré materials	Princeton University	United States	—
3	MOFs-based S-scheme heterojunction photocatalysts (2024)	University of Electronic Science and Technology of China	China	—

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 pioneered the discovery of unconventional superconductivity in magic-angle graphene superlattices, establishing a foundational framework for studying correlated electron phenomena in twisted van der Waals materials.

The researcher's primary contribution centers on the 2018 paper titled 'Unconventional superconductivity in magic-angle graphene superlattices.' This work serves as the cornerstone of the described research line, with no subsequent follow-up papers by the same researcher provided in the current dataset. The core paper stands alone as the definitive output for this specific contribution narrative.

This line of work appears to address the gap in understanding superconducting mechanisms within engineered graphene structures. By focusing on 'magic-angle' configurations, the research suggests a novel approach to inducing unconventional superconductivity, moving beyond traditional material constraints. The title indicates a shift toward exploring superlattices as a platform for observing these complex quantum states.

The significance of this contribution is evidenced by its substantial citation count of 10,118, marking it as a highly influential publication in the field. Furthermore, citation analysis reveals that 70% of the citing papers originate from independent researchers, indicating broad adoption and validation of the findings across the global scientific community rather than limited internal circulation.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 2

CORE PAPER

Unconventional superconductivity in magic-angle graphene superlattices

2018 · 10,118 citations (GS)

Field-normalised: 7,428 Semantic Scholar citations place it in the top 1% of Physics papers from 2018 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Advanced thermoelectric design: from materials and structures to devices (2020)	The University of Queensland	Australia	—
2	A microscopic perspective on moiré materials (2024)	Princeton University	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
National Institute for Materials Science	Japan	SCImago #2119	2
Massachusetts Institute of Technology	United States	SCImago #41 · THE 2 · QS 1	2
University of Tennessee	United States	—	1
Yonsei University	South Korea	SCImago #238 · THE 86 · QS 50	1
National Tsing Hua University	Taiwan	SCImago #1590 · THE 401–500	1
The University of Queensland	Australia	SCImago #126 · THE =80 · QS =42	1
The University of Tokyo	Japan	SCImago #141 · THE 26 · QS =36	1
Nanjing Tech University	China	SCImago #742 · THE 601–800	1
University of Basel	Switzerland	SCImago #905 · THE 120 · QS 158	1
Columbia University	United States	SCImago #65 · THE 20 · QS =38	1
Nanjing University of Posts and Telecommunications	China	SCImago #1044	1
University of South Florida	United States	SCImago #806 · THE 351–400 · QS =654	1
Southeast University	China	THE 251–300 · QS =392	1
Harvard University	United States	SCImago #4 · THE =5 · QS 5	1
Florida State University	United States	SCImago #1224 · THE 301–350 · QS 549	1

Geographic distribution of citing authors

Country	Citing papers
United States	6
Japan	4
China	3

Country	Citing papers
Taiwan	2
South Korea	2
Spain	1
France	1
Australia	1
Switzerland	1
United Kingdom	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	Boron nitride substrates for high-quality graphene electronics	3	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Correlated insulator behaviour at half-filling in magic-angle graphene superlattices	3	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Unconventional superconductivity in magic-angle graphene superlattices	2	Dhanasar — Prong 2 (well-positioned)