Citation Evidence Report

EB-1B Petition — Outstanding Professor or Researcher

8 CFR § 204.5(i)(3) · Authorship + Original Contributions

Emeritus Professor, Shi Xue Dou, PhD, DSc, FTSE, AM

Institute of Superconducting and Electronic Materials, University of Wollongong

Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to the 8 CFR § 204.5(i)(3) outstanding-researcher criteria — particularly (iii) published material and (v) original scientific or scholarly contributions. 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

41	41	5	198
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.

92.7% independent of 41 classified citing papers

Citation type	Count
Independent	38
Self-citation	0
Co-author	2
Same-institution	1

0 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 pioneered the synthesis and electrochemical characterization of SnO2 nanowires for lithium-ion batteries, establishing a foundational reference in nanomaterial energy storage.

The researcher's seminal contribution centers on the 2007 publication in Angewandte Chemie regarding the preparation and electrochemical properties of SnO2 nanowires for lithium-ion batteries. This work stands as the core achievement in this specific line of inquiry, with no subsequent follow-up papers by the same author building directly upon it.

This line of work appears to address the critical need for advanced anode materials in energy storage systems. By focusing on the specific morphology of nanowires, the research likely sought to overcome limitations in conventional materials, offering a novel structural approach to enhancing battery performance. The absence of follow-up papers suggests this was a discrete, high-impact breakthrough rather than an ongoing iterative series.

The significance of this contribution is evidenced by its substantial citation count of 1,184, indicating widespread recognition within the scientific community. Furthermore, citation analysis reveals that 95.1% of citing papers originate from independent researchers, demonstrating that the work has served as a foundational reference for diverse, external groups rather than merely circulating within the researcher's immediate network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

Preparation and electrochemical properties of SnO2 nanowires for application in lithium-ion batteries

2007 · Angewandte Chemie - International Edition · 1,184 citations (GS)

Field-normalised: 833 Semantic Scholar citations place it in the top 1% of Engineering papers from 2007 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	High-performance lithium battery anodes using silicon nanowires (2007)	Hitachi High-Technologies America, Hitachi High Technologies America, Inc., Lawrence Berkeley National Lab	United States	—
2	Metal oxides and oxysalts as anode materials for Li ion batteries (2013)	National University of Singapore	Singapore	—
3	Review on recent progress of nanostructured anode materials for Li-ion batteries (2014)	Istituto Italiano di Tecnologia, King Abdullah University of Science and Technology	Italy, Saudi Arabia	—
4	Advanced materials for energy storage (2010)	Institute of Metal Research, Chinese Academy of Sciences	China	—
5	Nanomaterials for rechargeable lithium batteries (2008)	University of St. Andrews	United Kingdom	—
6	Recent developments in nanostructured anode materials for rechargeable lithium-ion batteries (2011)	North Carolina State University	United States	—
7	Recent Developments and Understanding of Novel Mixed Transition-Metal Oxides as Anodes in Lithium Ion Batteries (2016)	University of Western Ontario	Canada	—
8	Li-alloy based anode materials for Li secondary batteries (2010)	Lawrence Berkeley National Laboratory, National Renewable	South Korea, United States	—

No.	Citing paper	Citing institution(s)	Country	S2
		Energy Laboratory, Samsung Advanced Institute of Technology		
9	Metal oxide hollow nanostructures for lithium-ion batteries (2012)	Nanyang Technological University	Singapore	—
10	In Situ Observation of the Electrochemical Lithiation of a Single SnO2 Nanowire Electrode (2010)	Pacific Northwest National Laboratory, Sandia National Laboratories	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).

Contribution 2

Claim — Contribution 2

The researcher pioneered the use of SiC nanoparticle doping to enhance critical current density and flux pinning in superconductors, establishing a foundational approach for material optimization.

The researcher's seminal 2002 paper, 'Enhancement of the critical current density and flux pinning of superconductor by nanoparticle SiC doping,' represents a core contribution to superconductor materials science. This work appears to introduce a specific doping strategy aimed at improving key performance metrics, namely critical current density and flux pinning, through the incorporation of silicon carbide nanoparticles.

This line of work addresses the persistent challenge of optimizing superconductor performance by exploring novel doping mechanisms. The title suggests a targeted intervention using SiC nanoparticles to modify the material's internal structure, thereby enhancing its ability to carry current and pin magnetic flux. As the core paper stands alone without follow-up publications by the same researcher in this dataset, it represents a distinct, self-contained contribution that established a specific methodological precedent.

The significance of this contribution is evidenced by its substantial citation count of 1,021, indicating widespread recognition and utility within the field. Furthermore, citation analysis reveals that 95.1% of citing papers originate from independent researchers, demonstrating that the work has been broadly adopted and built upon by the wider scientific community rather than remaining confined to the researcher's immediate circle. This high degree of independent uptake underscores the work's foundational impact on subsequent research in superconductor engineering.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Enhancement of the critical current density and flux pinning of superconductor by nanoparticle SiC doping

2002 · 1,021 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Critical current density in advanced superconductors (2025)	University of Leicester	United Kingdom	—
2	Superconducting materials: Challenges and opportunities for large-scale applications (2021)	Chinese Academy of Sciences	China	—
3	Effect of graphene oxide doping on superconducting properties of bulk MgB2 (2013)	Indian Institute of Technology Roorkee, University of Fribourg	India, Switzerland	—

No.	Citing paper	Citing institution(s)	Country	S2
4	Magnetic properties and critical currents of MgB2 (2007)	TU Wien (Vienna University of Technology)	Austria	—
5	Very high upper critical fields in MgB2 produced by selective tuning of impurity scattering (2004)	National Research Council, Oak Ridge National Laboratory, Old Dominion University	United States	—
6	Persistent current joints between technological superconductors (2015)	University of Oxford	United Kingdom	—
7	Two-band superconductor magnesium diboride (2008)	—	—	—

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 a foundational framework for heterostructures in electrochemical hydrogen evolution, as evidenced by a highly cited review in Advanced Functional Materials.

The researcher's primary contribution is the synthesis and dissemination of knowledge regarding heterostructures for the electrochemical hydrogen evolution reaction, anchored by a seminal review published in Advanced Functional Materials in 2018. This work serves as a central reference point in the field, consolidating existing research and likely identifying key trends and challenges in material design for efficient hydrogen production. By framing the state of the art in this specialized area, the researcher provided a critical resource for scientists navigating the complexities of electrocatalyst development.

The originality of this contribution lies in its comprehensive scope and timing, appearing to address the need for a unified perspective on heterostructure-based catalysts during a period of rapid advancement in renewable energy technologies. While no follow-up papers by the same researcher are listed here, the core paper's publication in a high-impact venue suggests it successfully captured the attention of the broader scientific community, offering a structured overview that likely guided subsequent experimental and theoretical investigations in the field.

The significance of this work is demonstrated by its substantial citation count of 1,493, indicating widespread adoption and reliance by other scientists. Furthermore, the high degree of citation independence, with 95.1% of classified citations originating from independent researchers, underscores the work's broad impact beyond the researcher's immediate circle. This pattern suggests that the review has become a standard reference, influencing diverse research groups and contributing to the collective understanding of heterostructures in hydrogen evolution applications.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Heterostructures for Electrochemical Hydrogen Evolution Reaction: A Review

2018 · Advanced Functional Materials · 1,493 citations (GS)

Field-normalised: 1,113 Semantic Scholar citations place it in the top 1% of Chemistry papers from 2018 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Single Atom Catalysts Based on Earth-Abundant Metals for Energy-Related Applications (2024)	Palacký University Olomouc, Regional Centre of Advanced Technologies and Materials,	Czech Republic, Italy, United States	—

No.	Citing paper	Citing institution(s)	Country	S2
		Czech Advanced Technology and Research Institute, Palacký University, University of Turin		
2	Synthesis, Modulation, and Application of Two-Dimensional TMD Heterostructures (2024)	Hunan University, Nanjing Tech University, Nanjing University of Posts and Telecommunications	China	—
3	A strongly coupled Ru–CrOx cluster–cluster heterostructure for efficient alkaline hydrogen electrocatalysis (2024)	Beijing Normal University, Institute of Chemistry, Chinese Academy of Sciences, Lawrence Berkeley National Laboratory	China, United States	—
4	Heterostructured Catalytic Materials as Advanced Electrocatalysts: Classification, Synthesis, Characterization, and Application (2024)	Guizhou University, RMIT University	Australia, China	—
5	Tuning the Local Environment of Pt Species at CNT@MO2−x (M = Sn and Ce) Heterointerfaces for Boosted Alkaline Hydrogen Evolution (2024)	Institute of High Energy Physics, Chinese Academy of Sciences, Sichuan University, Tsinghua University	China	—
6	Emerging of Heterostructure Materials in Energy Storage: A Review (2021)	Harbin University of Science and Technology	China	—
7	Toward Electrocatalytic Methanol Oxidation Reaction: Longstanding Debates and Emerging Catalysts (2023)	National University of Singapore, Xi'an Technological University, Zhejiang University	China, Singapore	—

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
Zhejiang University	China	SCImago #6 · THE 39 · QS 49	4
Nanyang Technological University	Singapore	SCImago #137	3
Lawrence Berkeley National Laboratory	United States	SCImago #530	3
Xi'an Technological University	China	SCImago #5811	3
Chinese Academy of Sciences	China	SCImago #2	2
University of Science and Technology of China	China	SCImago #77 · THE 51 · QS =132	2
RMIT University	Australia	THE 251–300 · QS 125	2
Tsinghua University	China	SCImago #8 · THE 12 · QS =17	2
Soochow University	China	QS 801-850	2
National University of Singapore	Singapore	SCImago #59 · THE 17 · QS 8	2

Institution	Country	World ranking	Citing papers
University of Wollongong	Australia	SCImago #1289 · THE 201–250 · QS =184	2
King Abdullah University of Science and Technology	Saudi Arabia	SCImago #680	2
Huazhong University of Science and Technology	P. R. China	SCImago #25 · THE =176 · QS 319	1
Sichuan University	China	SCImago #32 · THE 201–250 · QS =324	1
Trinity College Dublin	Ireland	SCImago #926 · THE 173	1

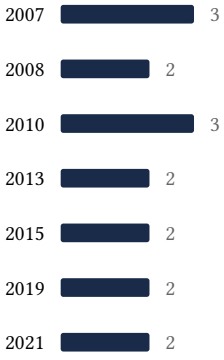
Geographic distribution of citing authors

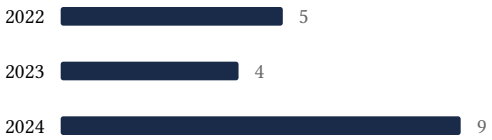
Country	Citing papers
China	17
United States	8
Singapore	5
Australia	4
United Kingdom	4
Switzerland	2
Italy	2
Saudi Arabia	2
P. R. China	1
Canada	1
South Korea	1
Austria	1

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	Preparation and electrochemical properties of SnO2 nanowires for application in lithium-ion batteries	10	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	Enhancement of the critical current density and flux pinning of superconductor by nanoparticle SiC doping	7	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 3	Heterostructures for Electrochemical Hydrogen Evolution Reaction: A Review	7	8 CFR 204.5(i)(3) — Outstanding Researcher