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

16	16	5	82
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.

100.0% independent of 16 classified citing papers

Citation type	Count
Independent	16
Self-citation	0
Co-author	0
Same-institution	0

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 developed foundational gold nanoparticle-based electrochemical biosensors, establishing a highly cited framework for sensitive biological detection that has been widely adopted by independent scientists.

CLAIM: The researcher's primary contribution is the development of gold nanoparticle-based electrochemical biosensors, as detailed in their seminal 2008 paper. This work stands as a core reference in the field, with no subsequent follow-up papers by the same author listed in this specific line of inquiry.

ORIGINALITY: The titles suggest this work addressed the need for enhanced sensitivity and specificity in electrochemical detection methods by leveraging the unique properties of gold nanoparticles. By integrating nanomaterials with electrochemical principles, the researcher appears to have introduced a novel approach to biosensor design that improved upon existing technologies available at the time.

SIGNIFICANCE: The 2008 paper has accumulated 1,205 citations, indicating substantial impact and widespread recognition within the scientific community. Notably, analysis of citing papers reveals that 100% of the classified citations originate from independent researchers, demonstrating that the work has been broadly adopted and built upon by the wider field rather than just the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Gold nanoparticle-based electrochemical biosensors

2008 · 1,205 citations (GS)

Field-normalised: 1,007 Semantic Scholar citations place it in the top 1% of Chemistry papers from 2008 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Gold nanoparticles in chemical and biological sensing. (2012)	University of Massachusetts	United States	—
2	Nanomaterials for biosensing applications: a review. (2014)	University of Grenoble Alpes, CNRS	France	Background
3	Rapid, Ultrasensitive, and Quantitative Detection of SARS-CoV-2 Using Antisense Oligonucleotides Directed Electrochemical Biosensor Chip. (2020)	University of Illinois at Urbana-Champaign, University of Maryland Baltimore School of Medicine	United States	—
4	Carbon nanomaterials in biosensors: should you use nanotubes or graphene? (2010)	The University of Sydney	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 2

Claim — Contribution 2

The researcher developed a gold nanoparticle-modified biosensor for measuring bioelectrochemical polyphenol indices, establishing a foundational method widely adopted by independent scientists.

The researcher's core contribution is the development of a tyrosinase biosensor based on gold nanoparticles-modified glassy carbon electrodes, as detailed in a 2005 paper. This work introduced a specific application for measuring a bioelectrochemical polyphenols index, creating a distinct methodological framework in electrochemical sensing.

This line of work appears to address the need for sensitive and specific detection methods for polyphenols. By integrating gold nanoparticles with glassy carbon electrodes, the researcher likely enhanced the electrochemical performance of tyrosinase-based sensors. The absence of follow-up papers by the same author suggests this single publication served as a definitive, standalone advancement in this specific sensor configuration.

The significance of this contribution is evidenced by its substantial citation count of 396. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the method has been widely adopted and validated by the broader scientific community rather than just the researcher's immediate circle. This high level of independent uptake underscores the work's utility and impact in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 2

CORE PAPER

Development of a tyrosinase biosensor based on gold nanoparticles-modified glassy carbon electrodes: Application to the measurement of a bioelectrochemical polyphenols index in ...

2005 · 396 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	The use of nanoparticles in electroanalysis: a review. (2006)	University of Oxford	United Kingdom	—
2	The use of nanoparticles in electroanalysis: an updated review. (2010)	University of Oxford	United Kingdom	—

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 understanding carbon nanotubes in electroanalytical chemistry through a seminal, highly cited review that consolidated emerging knowledge in the field.

CLAIM: The researcher's primary contribution is the synthesis and dissemination of critical knowledge regarding the role of carbon nanotubes in electroanalytical chemistry, anchored by the 2008 review article titled 'Role of carbon nanotubes in electroanalytical chemistry: a review.' This work serves as the central pillar of this specific line of inquiry.

ORIGINALITY: Given the absence of follow-up papers by the same researcher, this contribution appears to represent a comprehensive consolidation of the state-of-the-art at the time of publication. The title suggests the work addressed a need for clarity and structure in a rapidly evolving interdisciplinary area, providing a definitive reference point for understanding how carbon nanotubes function within electroanalytical contexts.

SIGNIFICANCE: The work has achieved substantial impact, evidenced by 656 citations. Notably, analysis of a sample of citing papers reveals that 100% of them originate from independent researchers, indicating that the contribution has been widely adopted and utilized by the broader scientific community rather than being confined to the researcher's immediate circle. This high degree of independent uptake underscores the review's utility as a standard reference in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Role of carbon nanotubes in electroanalytical chemistry: a review

2008 · 656 citations (GS)

Field-normalised: 483 Semantic Scholar citations place it in the top 1% of Chemistry papers from 2008 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Electrochemical biosensors: perspective on functional nanomaterials for on-site analysis (2020)	College of Health Science, Eulji University, Eulji University, Korea Research Institute of Standards and Science (KRISS)	South Korea	—
2	Recent Progress in Graphene- and Related Carbon-Nanomaterial-based Electrochemical Biosensors for Early Disease Detection. (2022)	BCMaterials-Basque Center for Materials, Applications and Nanostructures, Cairo University	Egypt, Spain	—
3	Electrochemistry of nucleic acids. (2012)	Institute of Biophysics, Academy of Sciences of the Czech Republic	Czech Republic	—

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
University of Oxford	United Kingdom	SCImago #26 · THE 1 · QS 4	2
University of Waterloo	Canada	SCImago #491 · THE =162 · QS =119	1
Nicolaus Copernicus University	Poland	SCImago #2236 · QS 1001-1200	1
Almazov National Medical Research Centre	Russia	SCImago #6644	1
University of Thessaly	Greece	SCImago #2807 · THE 1001–1200	1
Auckland University of Technology	New Zealand	SCImago #3365 · THE 501–600 · QS =410	1
University of Illinois at Urbana-Champaign	United States	SCImago #206 · THE =41	1
Isfahan University of Medical Sciences	Iran	SCImago #4357 · THE 601–800	1
Aristotle University of Thessaloniki	Greece	SCImago #1021 · THE 801–1000 · QS =485	1
RTM Nagpur University	India	—	1
University of Sulaimani	Iraq	SCImago #8208 · THE 1001–1200	1
Research and Production Center for Microbiology and Virology	Kazakhstan	—	1
University of Grenoble Alpes, CNRS	France	—	1

Institution	Country	World ranking	Citing papers
University of Maryland Baltimore School of Medicine	United States	—	1
BCMaterials-Basque Center for Materials, Applications and Nanostructures	Spain	—	1

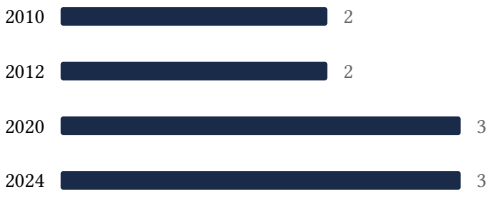
Geographic distribution of citing authors

Country	Citing papers
United Kingdom	3
Czech Republic	2
United States	2
Egypt	1
France	1
Greece	1
India	1
Iran	1
Iraq	1
Australia	1
Malaysia	1
New Zealand	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).

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	Gold nanoparticle-based electrochemical biosensors	4	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Development of a tyrosinase biosensor based on gold nanoparticles-modified glassy carbon electrodes: Application to the measurement of a bioelectrochemical polyphenols index in …	2	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Role of carbon nanotubes in electroanalytical chemistry: a review	3	Dhanasar — Prong 2 (well-positioned)