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

97	102	7	5
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 14 classified citing papers

Citation type	Count
Independent	14
Self-citation	0
Co-author	0
Same-institution	0

83 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 ultra-low-power multimodal sensor interface ICs for environmental and cardiovascular monitoring, establishing a technical foundation for integrated health and pollution sensing systems.

The researcher's contribution centers on the design of energy-efficient integrated circuits for multimodal sensing, anchored by a 2021 core paper on a 785-nW interface for ozone and cardiovascular monitoring. This work was extended in 2024 with a follow-up paper describing a tri-modal, self-adaptive sensor interface for heart rate, SpO2, and pulse transit time co-monitoring, indicating a sustained focus on advancing low-power biometric and environmental sensing technologies.

This line of work appears to address the critical challenge of integrating multiple sensing modalities into highly power-constrained systems. The progression from a dual-modal ozone and cardiovascular interface to a more complex tri-modal photoplethysmography system suggests an original approach to enhancing monitoring capabilities while maintaining minimal power consumption, a key requirement for wearable and portable health devices.

The significance of this research is evidenced by its uptake in the scientific community. The core 2021 paper has accumulated 37 citations, while the 2024 follow-up has garnered 12 citations. Notably, analysis of citing papers reveals that 100% of citations for this scholar originate from independent researchers, indicating that the work has influenced peers outside the researcher's immediate institution and collaboration network, thereby demonstrating broad independent recognition.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

A 0.6 V 785-nW multimodal sensor interface IC for ozone pollutant sensing and correlated cardiovascular disease monitoring

2021 · IEEE Journal of Solid-State Circuits 56 (4), 1058-1070, 2021 · 37 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Study of the ozone control process using electronic sensors	—	—	—
2	An analog front-end with high common-mode rejection ratio and high input impedance for single-lead ECG signal acquisition	—	—	—
3	A low-mismatched instrumentation amplifier for ECG front-end readout circuit	—	—	—
4	Cardiovascular Monitoring System Design Based on Medical Imaging Technology and Artificial Intelligence Algorithm	—	—	—

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).

FOLLOW-UP WORK

A 2.3–5.7 µW Tri-Modal Self-Adaptive Photoplethysmography Sensor Interface IC for Heart Rate, SpO2, and Pulse Transit Time Co-Monitoring

2024 · IEEE Transactions on Biomedical Circuits and Systems 18 (3), 564-579, 2024 · 12 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	A review of wearable flexible sensors for sports: from materials to applications	Anshun University, Henan University, Inner Mongolia Medical University	China, South Korea	—
2	Design and Simulation of the 16-bit SAR ADC	—	—	—

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 high-frequency relaxation oscillator featuring dynamic frequency-error compensation and fast start-up, achieving precise temperature stability as evidenced by independent scholarly adoption.

The researcher's contribution centers on the design of a 1.05-MHz relaxation oscillator that incorporates dynamic frequency-error compensation and ensures fast start-up time. This work is anchored in a 2019 publication that reports a temperature coefficient of 2.5 ppm/°C, establishing a specific technical benchmark for oscillator stability and performance.

This line of work appears to address the challenge of maintaining frequency accuracy in relaxation oscillators under varying thermal conditions while minimizing initialization delays. By integrating dynamic compensation mechanisms, the research suggests a novel approach to mitigating temperature-induced drift, a persistent issue in analog circuit design, thereby offering a more robust solution than conventional static compensation methods.

The significance of this contribution is underscored by its reception within the academic community. With 43 citations, the core paper has attracted sustained attention. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the work has been adopted and built upon by scholars outside the researcher's immediate circle, validating its broader impact and utility in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

A 2.5 ppm/° C 1.05-MHz relaxation oscillator with dynamic frequency-error compensation and fast start-up time

2019 · IEEE Journal of Solid-State Circuits 54 (7), 1952-1959, 2019 · 43 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	CMOS die area temperature compensation using a phase-locked loop with thermal-feedback	École de Technologie Supérieure, McGill University, Université du Québec à Montréal	Canada	—
2	A low temperature drift, low jitter on-chip oscillator applied to 32-bit ultra-high precision ADCs	—	—	—
3	A 300 nW 10 kHz Relaxation Oscillator with 105 ppm/C Temperature Coefficient	—	—	—
4	Full compensation method of thermal error of NC machine tool based on sequence depth learning	Changsha Normal University	China	—

No.	Citing paper	Citing institution(s)	Country	S2
5	A 1 MHz PVT compensated RC oscillator with frequency stability	—	—	—
6	Thermal synergies in 50 nanometer CMOS and below	Independent Scholar	United States	Background
7	A STUDY ON THE DEVELOPMENT AND RESEARCH OF VERY POWER EFFICIENT ELECTRONIC CIRCUITS FOR USE IN BODY SOUND MONITORING	—	—	—
8	Ultra-Low-Voltage Clock References	University of Macau	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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Université du Québec à Montréal	Canada	—	1
École de Technologie Supérieure	Canada	SCImago #2925	1
Changsha Normal University	China	—	1
Inner Mongolia Medical University	China	—	1
Anshun University	China	—	1
University of Macau	China	SCImago #942 · THE =145 · QS =285	1
McGill University	Canada	SCImago #168 · THE =41 · QS 27	1
Henan University	China	SCImago #1369	1
Independent Scholar	United States	—	1
Kyungil University	South Korea	—	1

Geographic distribution of citing authors

Country	Citing papers
China	3
Canada	1
South Korea	1
United States	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.

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	A 0.6 V 785-nW multimodal sensor interface IC for ozone pollutant sensing and correlated cardiovascular disease monitoring	6	Dhanasar — Prong 2 (well-positioned)
Contribution 2	A 2.5 ppm/° C 1.05-MHz relaxation oscillator with dynamic frequency-error compensation and fast start-up time	8	Dhanasar — Prong 2 (well-positioned)