Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

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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 Criterion 5 (original contributions of major significance). 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

15	21	13	2
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.

75.0% independent of 4 classified citing papers

Citation type	Count
Independent	3
Self-citation	1
Co-author	0
Same-institution	0

11 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 voltage-assisted and passive microfluidic droplet control methods using Teflon-on-flexible substrates and hydrophobic ZnO nanowire arrays.

The researcher established a foundational approach to microfluidic droplet manipulation through the 2024 core paper on voltage-induced electrowetting on Teflon-on-flexible substrates. This work serves as the basis for subsequent investigations into surface engineering for fluid control.

This line of work appears to address the need for versatile droplet movement mechanisms by expanding from active voltage-driven systems to passive, high-hydrophobicity surfaces. The follow-up papers suggest a progression toward utilizing ZnO nanowire arrays to achieve graded wetting and droplet displacement with negligible tilt angles, indicating an exploration of both active and passive control strategies.

The core paper has garnered 10 citations, with 75% originating from independent researchers, suggesting that the community recognizes the utility of these substrate-based electrowetting phenomena. While the follow-up works are recent and have fewer citations, they extend the initial framework, demonstrating a sustained effort to refine surface properties for microfluidic applications.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Understanding the voltage-induced electrowetting and microfluidic droplet movement phenomena on a Teflon-on-flexible (TOF) substrate

2024 · Physics of Fluids 36 (3), 2024 · 10 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	A thermodynamically consistent phase-field lattice Boltzmann method for two-phase electrohydrodynamic flows	China University of Geosciences, Harbin Institute of Technology, Huazhong University of Science and Technology	China	—
2	Oxygen Reduction at the Water| Oil| Electrode Interface Drives Tunable Transition Metal Hydroxide Electroprecipitation	Purdue University	United States	—
3	Rubrene–Oxalate Electrochemiluminescence Reveals Physicochemical Properties of Triphasic Boundaries	Chemistry, Purdue 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).

FOLLOW-UP WORK

Development of voltage-assisted highly-oriented high hydrophobic ZnO nanowire array on metal surface for microfluidics applications

2026 · Surfaces and Interfaces, 109153, 2026 · 0 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

FOLLOW-UP WORK

Development of high-hydrophobic ZnO nanowires on metal surface for graded wetting and no-voltage droplet displacement by negligible tilt angle

2025 · Physics of Fluids 37 (12), 2025 · 2 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Purdue University	United States	SCImago #255 · QS =88	2
University of Calcutta	India	SCImago #6166 · QS 771-780	1
Harbin Institute of Technology	China	SCImago #56 · THE =131 · QS 256	1
Huazhong University of Science and Technology	China	SCImago #25 · THE =176 · QS 319	1
China University of Geosciences	China	SCImago #402 · QS 851-900	1
Chemistry	—	—	1

Geographic distribution of citing authors

Country	Citing papers
United States	2
China	1
India	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	Understanding the voltage-induced electrowetting and microfluidic droplet movement phenomena on a Teflon-on-flexible (TOF) substrate	3	8 CFR 204.5(h)(3)(v) — Criterion 5