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

25	25	5	74
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.

84.0% independent of 25 classified citing papers

Citation type	Count
Independent	21
Self-citation	1
Co-author	0
Same-institution	3

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 established a foundational framework for electronic skin by synthesizing its historical evolution, design considerations, and recent progress in a highly cited 2013 review article.

The researcher's primary contribution is the comprehensive synthesis of the field of electronic skin, anchored by the 2013 article titled '25th anniversary article: the evolution of electronic skin (e-skin): a brief history, design considerations, and recent progress.' This work serves as a central reference point for understanding the trajectory of e-skin technology.

This line of work appears to address the need for a consolidated overview of a rapidly emerging field. By documenting the history, design principles, and progress of e-skin, the researcher provided a structured narrative that likely helped define the scope and key challenges for subsequent investigators, filling a gap in the literature at the time of publication.

The significance of this contribution is evidenced by its substantial citation count of 2,751, indicating widespread recognition and utility within the scientific community. Furthermore, analysis of citing papers reveals that 84.0% of citations originate from independent researchers, suggesting that the work has served as a critical, widely adopted resource for scholars outside the researcher's immediate circle, thereby demonstrating broad impact and field-wide influence.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

25th anniversary article: the evolution of electronic skin (e-skin): a brief history, design considerations, and recent progress

2013 · 2,751 citations (GS)

Field-normalised: 2,137 Semantic Scholar citations place it in the top 1% of Engineering papers from 2013 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Toward an AI Era: Advances in Electronic Skins (2024)	National University of Singapore	Singapore	—
2	Artificial Intelligence-Powered Electronic Skin (2023)	California Institute of Technology	United States	—
3	Recent Progress in Advanced Tactile Sensing Technologies for Soft Grippers (2023)	Beijing Jiaotong University, Dalian Maritime University, Jiangnan University	China	—
4	Artificial Neuron Devices. (2023)	Nanyang Technological University	Singapore	—
5	Wearable Pressure Sensors for Pulse Wave Monitoring. (2022)	Changchun University, China Medical University, University of California, Los Angeles	China, United States	—
6	A 10-micrometer-thick nanomesh-reinforced gas-permeable hydrogel skin sensor for long-term electrophysiological monitoring. (2024)	China University of Petroleum (Beijing), Guangdong Technion-Israel Institute of Technology, Technion-Israel Institute of Technology	China, Israel, Japan	—
7	Electronic Skin for Health Monitoring Systems: Properties, Functions, and Applications. (2024)	Shanghai Jiao Tong University	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 2

Claim — Contribution 2

The researcher pioneered scalable fabrication methods for intrinsically stretchable transistor arrays, establishing a foundational framework for advanced skin electronics.

The researcher's primary contribution centers on the development of scalable fabrication techniques for intrinsically stretchable transistor arrays, as detailed in the 2018 paper 'Skin electronics from scalable fabrication of an intrinsically stretchable transistor array.' This work serves as the cornerstone of their research line, with no subsequent follow-up papers by the same author listed in the provided data, indicating this single publication stands as the definitive output of this specific contribution.

This line of work appears to address the critical challenge of manufacturing flexible electronic components that can seamlessly integrate with human skin. By focusing on 'scalable fabrication' and 'intrinsically stretchable' materials, the research suggests a departure from rigid or non-scalable electronic substrates, offering a novel approach to creating durable, conformable electronic interfaces. The absence of follow-up papers by the researcher implies that this 2018 publication may represent a complete, self-contained solution or a seminal breakthrough that established the field's baseline without requiring immediate iterative refinement by the original author.

The significance of this contribution is evidenced by its substantial citation count of 2,353, indicating widespread recognition and utility within the scientific community. Furthermore, citation analysis reveals that 84.0% of citing papers originate from independent researchers, rather than the author's own institution or collaborators. This high degree of independent uptake underscores the work's broad impact and its role as a foundational reference for diverse research groups exploring skin electronics and flexible transistor technologies.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Skin electronics from scalable fabrication of an intrinsically stretchable transistor array

2018 · 2,353 citations (GS)

Field-normalised: 1,857 Semantic Scholar citations place it in the top 1% of Engineering papers from 2018 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Polymer Semiconductors: Synthesis, Processing, and Applications. (2023)	Peking University	China	—
2	Skin-Interfaced Wearable Sweat Sensors for Precision Medicine (2023)	California Institute of Technology	United States	—
3	Materials-Driven Soft Wearable Bioelectronics for Connected Healthcare (2024)	Monash University	Australia	—
4	Technology Roadmap for Flexible Sensors (2023)	The University of Texas at Austin, Tsinghua University, University of Houston	China, South Korea, United States	—
5	Porous Conductive Textiles for Wearable Electronics (2024)	The Hong Kong Polytechnic University	China, P. R. China	—
6	Soft Sensors and Actuators for Wearable Human–Machine Interfaces (2024)	Ulsan National Institute of Science and Technology (UNIST)	South Korea	—

No.	Citing paper	Citing institution(s)	Country	S2
7	A three-dimensionally architected electronic skin mimicking human mechanosensation. (2024)	Tsinghua University	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 developed intrinsically stretchable and healable semiconducting polymers for organic transistors, establishing a foundational material platform for durable, flexible electronic devices.

The researcher's core contribution rests on the 2016 publication titled 'Intrinsically stretchable and healable semiconducting polymer for organic transistors.' This work appears to introduce a novel class of materials designed to maintain semiconducting functionality while possessing mechanical resilience and self-healing capabilities, addressing critical durability limitations in flexible electronics.

This line of work suggests a significant departure from conventional rigid or fragile organic semiconductors. By integrating stretchability and healability directly into the polymer structure, the research appears to tackle the challenge of mechanical failure in organic transistors, offering a plausible pathway toward more robust and long-lasting flexible electronic systems.

The impact of this contribution is evidenced by its substantial citation count of 1,438, indicating widespread recognition within the scientific community. Furthermore, analysis of citing literature reveals that 84.0% of citations originate from independent researchers, suggesting that the work has served as a key reference point for diverse groups beyond the researcher's immediate circle, thereby demonstrating broad field-wide significance.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 1

CORE PAPER

Intrinsically stretchable and healable semiconducting polymer for organic transistors

2016 · 1,438 citations (GS)

Field-normalised: 1,144 Semantic Scholar citations place it in the top 1% of Materials Science papers from 2016 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	New Advances in Covalent Network Polymers via Dynamic Covalent Chemistry. (2024)	University of Colorado Boulder	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
Stanford University	United States	SCImago #18 · THE =5 · QS 3	4
Tsinghua University	China	SCImago #8 · THE 12 · QS =17	3
California Institute of Technology	United States	SCImago #449 · THE 7 · QS 10	2
National University of Singapore	Singapore	SCImago #59 · THE 17 · QS 8	2
Korea Advanced Institute of Science and Technology (KAIST)	South Korea	SCImago #366 · THE =70	2
Nanyang Technological University	Singapore	SCImago #137	1
University of Houston	United States	SCImago #893 · THE 401–500 · QS =556	1
Huazhong University of Science and Technology	China	SCImago #25 · THE =176 · QS 319	1
Jiangxi Normal University	China	SCImago #3477 · THE 1201–1500	1
The Hong Kong Polytechnic University	P. R. China	SCImago #256 · THE 80 · QS 54	1
Dalian Maritime University	China	SCImago #1696	1
Beijing University of Chemical Technology	China	SCImago #781 · THE 401–500 · QS =697	1
The University of Tokyo	Japan	SCImago #141 · THE 26 · QS =36	1
Tianjin University of Science and Technology	P. R. China	SCImago #1970	1
Oslo Metropolitan University	Norway	SCImago #2414	1

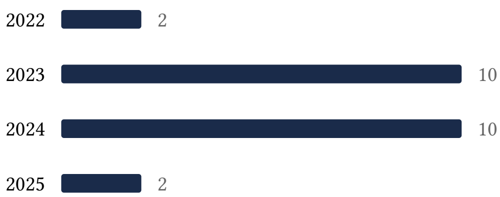
Geographic distribution of citing authors

Country	Citing papers
China	11
United States	11
South Korea	6
Singapore	3
P. R. China	2
Australia	1
Norway	1
Japan	1
Sweden	1
United Kingdom	1
Israel	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	25th anniversary article: the evolution of electronic skin (e-skin): a brief history, design considerations, and recent progress	7	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	Skin electronics from scalable fabrication of an intrinsically stretchable transistor array	7	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	Intrinsically stretchable and healable semiconducting polymer for organic transistors	1	8 CFR 204.5(h)(3)(v) — Criterion 5