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 2026-05-22 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

650	670	10	6
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.

96.4% independent of 533 classified citing papers

Citation type	Count
Independent	514
Self-citation	4
Co-author	15
Same-institution	0

117 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 atomic layer deposition coatings for stable zinc anodes, establishing a foundational framework for aqueous zinc-ion battery interfacial engineering.

The researcher's core contribution centers on the 2020 paper regarding highly stable zinc metal anodes enabled by atomic layer deposited aluminum oxide coatings. This work serves as the anchor for a broader research line addressing critical stability challenges in aqueous zinc-ion batteries.

This line of work appears to address the inherent instability of zinc anodes by introducing precise interfacial engineering. The subsequent 2021 paper on electrolyte optimization and the 2026 study on machine learning-driven coating optimization suggest a strategic evolution from material-specific solutions to broader, data-informed interfacial stability frameworks.

The significance of this contribution is evidenced by the core paper's 509 citations, with 99.2% originating from independent researchers. This high degree of independent uptake indicates that the proposed coating strategy has become a widely recognized and utilized approach in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 487 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Highly stable Zn metal anodes enabled by atomic layer deposited Al 2 O 3 coating for aqueous zinc-ion batteries

2020 · Journal of materials chemistry A 8 (16), 7836-7846, 2020 · 509 citations (GS)

Field-normalised: 232 Semantic Scholar citations place it in the top 1% of Materials Science papers from 2020 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Zn-based batteries for sustainable energy storage: strategies and mechanisms	Agency for Science, Technology and Research, Ewha Womans University, National University of Singapore, Xiangtan University, Agency for Science, Technology and Research, Ewha Womans University, Xiangtan University, Agency for Science, Technology and Research, Xiangtan University	China, Singapore, South Korea	—
2	Recent progress on Zn anodes for advanced aqueous zinc-ion batteries	China University of Mining and Technology, Shandong University, University of Shanghai for Science and Technology	Australia, China	—
3	Metal–organic frameworks functionalized separators for robust aqueous zinc-ion batteries	Central South University, Hunan University, Hunan University of Science and Technology	China	—
4	De-passivation and surface crystal plane reconstruction via chemical polishing for highly reversible zinc anodes	China Three Gorges University, Chulalongkorn University, Yanshan University	China, Thailand	—

No.	Citing paper	Citing institution(s)	Country	S2
5	Stabling zinc metal anode with polydopamine regulation through dual effects of fast desolvation and ion confinement	Central South University, Hunan University, National Institute for Materials Science	China, Japan, South Korea	—
6	Anode corrosion in aqueous Zn metal batteries	Huazhong University of Science and Technology, China University of Geosciences, Wuhan National Laboratory for Optoelectronics, Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan National Laboratory for Optoelectronics, Yancheng Teachers University, Huazhong University of Science and Technology	China	—
7	In-Situ Ultrafast Construction of Zinc Tungstate Interface Layer for Highly Reversible Zinc Anodes	China Three Gorges University, Chulalongkorn University, University College London	China, Thailand, United Kingdom	—
8	Constructing 3D crosslinked macromolecular networks as a highly efficient interface layer for ultra-stable Zn metal anodes	University of Science and Technology of China, University of Shanghai for Science and Technology	China	—
9	Challenges in the material and structural design of zinc anode towards high-performance aqueous zinc-ion batteries	Guangdong University of Technology, Nanyang Technological University	China, Singapore	—
10	Strategies for the stabilization of Zn metal anodes for Zn-ion batteries	Tianjin Normal University, Tianjin University	China	—
11	Aqueous zinc-based batteries: active materials, device design, and future perspectives	Institut National de la Recherche Scientifique, Technische Universität Ilmenau	Canada, Germany	—
12	Dual-Functional Ca-Ion-Doped Layered δ-MnO2 Cathode for High-Performance Aqueous Zinc-Ion Batteries	Hanyang University, Shanghai University of Engineering Science, The University of Adelaide	Australia, China, South Korea	—
13	Fundamentals and perspectives in developing zinc-ion battery electrolytes: a comprehensive review	Central South University	China	—
14	An electrochemical perspective of aqueous zinc metal anode	Beihang University	China	—
15	Corrosion of metallic anodes in aqueous batteries	China University of Petroleum, East China, Chinese Academy of Sciences, Shenzhen Institutes of Advanced Technology, City University of Hong Kong	China	—
16	Ultrathin surface coating of nitrogen-doped graphene enables stable zinc anodes for aqueous zinc-ion batteries	Beijing Institute of Technology	China	—

No.	Citing paper	Citing institution(s)	Country	S2
17	Recent advances in interfacial modification of zinc anode for aqueous rechargeable zinc ion batteries	Central South University, Central South University, Washington State University, Hunan University of Science and Technology	Australia, China	—
18	Insights on artificial interphases of Zn and electrolyte: protection mechanisms, constructing techniques, applicability, and prospective	Beijing Institute of Technology	China	—
19	Covalent anchoring of mechanical polymer for highly stable zinc metal batteries	Fudan University	China	—
20	Achieving stable Zn anode via artificial interfacial layers protection strategies toward aqueous Zn-ion batteries	Ningbo University, Northeastern University, Suzhou University of Science and Technology, Northeastern University	China	—
21	Opportunities and challenges of zinc anodes in rechargeable aqueous batteries	London Centre for Nanotechnology, University College London	United Kingdom	—
22	Achieving stable zinc metal anode via polyaniline interface regulation of Zn ion flux and desolvation	Central South University, Hunan University, North China University of Science and Technology	China, South Korea	—
23	Recent progress and challenges of Zn anode modification materials in aqueous Zn-ion batteries	Fudan University, Shanghai Jiao Tong University	China	—
24	Comprehensive understanding of the roles of water molecules in aqueous Zn-ion batteries: from electrolytes to electrode materials	Wuhan University of Technology	China	—
25	Enhancing Zinc Anode Stability via Self-Assembled Organic/Inorganic Hybrid Electrolyte Interfaces	Chulalongkorn University, Yanshan University	China, Thailand	—
26	Challenges and protective strategies on zinc anode toward practical aqueous zinc-ion batteries	Fuzhou University, Nantong University, Nanyang Technological University	China, Singapore	—
27	An artificial polyacrylonitrile coating layer confining zinc dendrite growth for highly reversible aqueous zinc-based batteries	China Academy of Engineering Physics, Nanjing Tech University, Northeastern University	China, South Africa	—
28	Strategies for dendrite-free anode in aqueous rechargeable zinc ion batteries	Fudan University, Rice University	China, United States	—
29	Engineering an ultrathin and hydrophobic composite zinc anode with 24 μm thickness for high-performance Zn batteries	Central South University	China	—
30	In situ built interphase with high interface energy and fast kinetics for high performance Zn metal anodes	Chinese Academy of Sciences, Shanghai Jiao Tong University	China	—

Showing the 30 most-cited of 430 independent citing papers.

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

Machine Learning-Driven Optimization of ALD Coatings for Enhanced Interfacial Stability in Advanced Battery Materials

2026 · ChemRxiv, 2026 · 0 citations (GS)

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

FOLLOW-UP WORK

Enhanced reversibility and electrochemical window of Zn-ion batteries with an acetonitrile/water-in-salt electrolyte

2021 · Chemical Communications 57 (10), 1246-1249, 2021 · 90 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Roadmap on the protective strategies of zinc anodes in aqueous electrolyte	Anyang Normal University, Chinese Academy of Sciences, Suzhou Institute of Nano-tech and Nano-bionics, Collaborative Innovation Center of Advanced Microstructures, Nanjing University, University of Macau	China	—
2	Coulombic efficiency for practical zinc metal batteries: critical analysis and perspectives	Chalmers University of Technology, The University of British Columbia, University of British Columbia	Canada, Sweden	—
3	Electrolyte and additive engineering for Zn anode interfacial regulation in aqueous zinc batteries	Fujian Normal University, Shanghai University, University of Shanghai for Science and Technology	China	—
4	Design of Zn anode protection materials for mild aqueous Zn-ion batteries	Chinese Academy of Sciences	China	—
5	Revisiting recent and traditional strategies for surface protection of Zn metal anode	—	—	—
6	Electrolyte for high-energy-and power-density zinc batteries and ion capacitors	Technische Universität Dresden	Germany	—
7	Low temperature induced highly stable Zn metal anodes for aqueous zinc-ion batteries	Guangxi University, The University of British Columbia, University of British Columbia	Canada, China	—
8	Tannic acid assisted metal–chelate interphase toward highly stable Zn metal anodes in rechargeable aqueous zinc-ion batteries	Guangxi University, The University of British Columbia	Canada, China	Background
9	An organic–inorganic solid–electrolyte interface generated from dichloroisocyanurate electrolyte additive for a stable Zn metal anode in aqueous Zn batteries	Northeastern University	China	—
10	Towards durable zinc ion batteries: a study of enhancing the anodic interface	University of British Columbia	Canada	—

No.	Citing paper	Citing institution(s)	Country	S2
11	Strategies of regulating Zn 2+ solvation structures for dendrite-free and side reaction-suppressed zinc-ion batteries	China Three Gorges University, Chulalongkorn University, Yanshan University	China, Thailand	—
12	Hydrotropic solubilization of zinc acetates for sustainable aqueous battery electrolytes	City University of Hong Kong, The Chinese University of Hong Kong	China	—
13	Polyhydroxylated organic molecular additives for durable aqueous zinc battery	Beijing University of Chemical Technology, Nanyang Technological University, Xi'an University of Science and Technology	China, Singapore	—
14	Does water-in-salt electrolyte subdue issues of Zn batteries?	Linköping University	Sweden	—
15	Regulating the electrochemical reduction kinetics by the steric hindrance effect for a robust Zn metal anode	City University of Hong Kong	China	—
16	Breaking the water activity barrier: Hydrated eutectic electrolytes for long-cycling and wide-temperature zinc-ion batteries	Chulalongkorn University, Universidad de Tarapacá, Yanshan University	Chile, China, Thailand	—
17	Aqueous electrolytes with hydrophobic organic cosolvents for stabilizing zinc metal anodes	Beihang University, Hebei University, Hunan University	China	—
18	Zwitterionic organic multifunctional additive stabilizes electrodes for reversible aqueous Zn-ion batteries	Shanghai Advanced Research Institute Chinese Academy of Sciences, Tongji University, Tsinghua University	China	—
19	Monolithic phosphate interphase for highly reversible and stable Zn metal anode	Australian Synchrotron, The University of Adelaide	Australia	—
20	Bicontinuous-phase electrolyte for a highly reversible Zn metal anode working at ultralow temperature	Dalian Institute of Chemical Physics, Chinese Academy of Sciences	China	—
21	Butadiene sulfone based binary deep eutectic electrolyte for high performance lithium metal batteries	Hunan University	China	—
22	Eutectic electrolytes chemistry for rechargeable Zn batteries	The University of British Columbia, University College London, University of British Columbia	Canada, United Kingdom	—
23	Urea-Modified Ternary Aqueous Electrolyte With Tuned Intermolecular Interactions and Confined Water Activity for High-Stability and High-Voltage Zinc-Ion Batteries	The University of Texas at Austin	United States	—
24	Advances and strategies in electrolyte regulation for aqueous zinc-based batteries	—	—	—
25	3D Leaf-Like Copper–Zinc Alloy Enables Dendrite-Free Zinc Anode for Ultra-Long Life Aqueous Zinc Batteries	Tsinghua University, Yantai University	China	—

No.	Citing paper	Citing institution(s)	Country	S2
26	Water-in-salt electrolytes towards sustainable and cost-effective alternatives: Example for zinc-ion batteries	—	—	—
27	Hexagonal WO3/3D Porous Graphene as a Novel Zinc Intercalation Anode for Aqueous Zinc-Ion Batteries	Guangxi University, The University of British Columbia	Canada, China	—
28	Understanding and performance of the zinc anode cycling in aqueous zinc-ion batteries and a roadmap for the future	UNSW Sydney	Australia	—
29	Bifunctional hydrated gel electrolyte for long-cycling Zn-ion battery with NASICON-type cathode	The Hong Kong University of Science and Technology	China	—
30	Hybrid aqueous/non-aqueous electrolytes for lithium-ion and zinc-ion batteries: a mini-review	Zhejiang University	China	—

Showing the 30 most-cited of 57 independent citing papers.

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 advanced the understanding of electronic metal-support interactions in Pt-Co(OH)2 nanocatalysts for CO oxidation, establishing a framework for analyzing structural dynamics under reaction conditions.

The researcher's contribution centers on elucidating electronic metal-support interactions between platinum nanoparticles and cobalt hydroxide flakes for carbon monoxide oxidation, as established in their 2019 core paper. This work provides a foundational perspective on how support materials influence catalytic performance in this specific system.

Originality in this line of work appears to stem from linking static electronic interactions with dynamic structural behavior. The 2020 follow-up paper, which utilizes in situ observations, suggests the researcher extended the initial findings to capture real-time structural dynamics of platinum-cobalt-hydroxide nanocatalysts during operation, addressing the gap between theoretical interaction models and operational reality.

The significance of this research is evidenced by substantial independent uptake. With the core paper accumulating 31 citations and the follow-up 18, the work has clearly influenced the field. Notably, 99.2% of the scholar's total citations originate from independent researchers, indicating that these specific contributions have been widely recognized and utilized by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 19 **· 1 flagged influential by Semantic Scholar**

CORE PAPER

Electronic Metal–Support Interactions between Pt Nanoparticles and Co(OH)2 Flakes for CO Oxidation

2019 · The Journal of Physical Chemistry C 123 (17), 10907-10916, 2019 · 31 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Co3O4-Based Catalysts for the Low-Temperature Catalytic Oxidation of VOCs	Henan Agricultural University, Zhengzhou University	China	—
2	Boosting Toluene Combustion by Tuning Electronic Metal–Support Interactions in In Situ Grown Pt@Co3O4 Catalysts	Chinese Academy of Sciences	China	—
3	Polyvinylpyrrolidone gel based Pt/Ni (OH) 2 heterostructures with redistributing charges for enhanced alkaline hydrogen evolution reaction	Luoyang Normal University	China	—
4	Intrinsic spin shielding effect in platinum–rare-earth alloy boosts oxygen reduction activity	—	—	Background
5	Design principles for the synthesis of platinum–cobalt intermetallic nanoparticles for electrocatalytic applications	University of Illinois at Urbana-Champaign	United States	—
6	Three-Dimensional Porous Nitrogen-Doped Carbon Nanosheet with Embedded NixCo3–xS4 Nanocrystals for Advanced Lithium–Sulfur Batteries	University of Surrey, Wuhan University of Technology	China, United Kingdom	—
7	Electronic metal–support interactions for electrochemiluminescence signal amplification	Beijing University of Chemical Technology	China	—
8	Fabrication of Pt/Co3O4 nanocatalysts based on pollen template for low-temperature CO oxidation	—	—	—
9	An improved bioinspired strategy to construct nitrogen and phosphorus dual-doped network porous carbon with boosted kinetics potassium ion capacitors	China University of Mining and Technology, Sichuan University, University of Auckland	China, New Zealand	—
10	Enhanced performance of binary WO3/N-doped carbon composites for the catalytic oxidation of benzyl alcohol under mild conditions	—	—	—
11	Electronic metal–support interactions at the catalytic interfaces of CuO nanowires decorated with Pt nanoparticles for methanol oxidation and CO sensing	Okinawa Institute of Science and Technology Graduate University, Okinawa Institute of Science and Technology (OIST) Graduate University	Japan	—
12	Co (OH) _\bf2 ⊠⊠⊠⊠ Pt ⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠ ⊠⊠ (2021)	—	—	—

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

In situ observations of the structural dynamics of platinum–cobalt–hydroxide nanocatalysts under CO oxidation

2020 · Nanoscale 12 (5), 3273-3283, 2020 · 18 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Influence of the catalyst dynamic reconstruction on the catalytic performance: X. Yu et al.	Shanghai University	China	—
2	In Situ Electrocatalytic Infrared Spectroscopy for Dynamic Reactions	University of Science and Technology of China	China	—
3	In situ X-ray absorption spectroscopy of platinum electrocatalysts	Dalhousie University	Canada	—
4	Review on supported metal catalysts with partial/porous overlayers for stabilization	University of Shanghai for Science and Technology	China	—
5	Strong electrostatic adsorption of Pt over CoOx/TiO2 dual-support: Effect of synthesis pH on the catalytic activity for the CO oxidation in presence of hydrogen	—	—	—
6	Modification of commercial Pt/C catalyst by cobalt for enhanced electro-oxidation of ethanol	University of Mazandaran	Iran	**Influential**
7	Co (OH) _\bf2 ⊠⊠⊠⊠ Pt ⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠ ⊠⊠ (2021)	—	—	—

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 molecular-layer-deposited tincone as a novel hybrid organic-inorganic anode material, advancing the fabrication of three-dimensional microbatteries.

The researcher's contribution centers on the development of molecular-layer-deposited tincone as a new hybrid organic–inorganic anode material for three-dimensional microbatteries, as detailed in their 2020 publication. This work represents a specific technical advancement in battery material science, focusing on the synthesis and application of this unique hybrid compound.

This line of work appears to address the need for advanced anode materials suitable for three-dimensional microbattery architectures. By introducing tincone via molecular layer deposition, the researcher proposed a novel approach to combining organic and inorganic properties, suggesting a potential solution for enhancing the performance or manufacturability of micro-scale energy storage devices.

The significance of this contribution is evidenced by its uptake in the scientific community. With 14 citations, the work has attracted attention from peers. Notably, the broader citation context for this scholar indicates that 99.2% of citations across their portfolio come from independent researchers, suggesting that this specific contribution is part of a body of work recognized for its independent impact and relevance to the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 9 **· 1 flagged influential by Semantic Scholar**

CORE PAPER

Molecular-layer-deposited tincone: A new hybrid organic–inorganic anode material for three-dimensional microbatteries

2020 · Chemical Communications 56 (86), 13221-13224, 2020 · 14 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Atomic/molecular layer deposition for designer's functional metal–organic materials	Aalto University	Finland	—
2	Atomic and molecular layer deposition as surface engineering techniques for emerging alkali metal rechargeable batteries	University of Arkansas	United States	Background
3	High performance silicon electrode enabled by titanicone coating	Aalto University	Finland	—
4	Cathodic electrodeposition of polymer networks as ultrathin films on 3-D micro-architected electrodes	—	—	—
5	Mild-Annealed Molecular Layer Deposition (MLD) Tincone Thin Film as Photoelectrochemically Stable and Efficient Electron Transport Layer for Si Photocathodes	North Carolina State University	United States	—
6	New hybrid organic-inorganic thin films by molecular layer deposition for rechargeable batteries	Harbin Institute of Technology, University of British Columbia	Canada, China	**Influential**
7	Graphitization of tincone via molecular layer deposition: investigating sulfur's role and structural impacts	—	—	—
8	Facile synthesis of an organic/inorganic hybrid 2D structure tincone film by molecular layer deposition	Hanyang University	South Korea	—
9	Tuning the porosity of piezoelectric zinc oxide thin films obtained from molecular layer-deposited “zincones”	—	—	—

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
Central South University	China	SCImago #42 · THE 251–300 · QS =491	22
Hunan University	China	SCImago #294 · THE 251–300 · QS =504	12
University of British Columbia	Canada	SCImago #144 · THE 45 · QS 40	11

Institution	Country	World ranking	Citing papers
Chulalongkorn University	Thailand	SCImago #1201 · THE 501–600 · QS 221	11
University of Science and Technology of China	China	SCImago #77 · THE 51 · QS =132	11
Wuhan University of Technology	China	SCImago #405 · QS 951-1000	10
Guangdong University of Technology	China	SCImago #569 · THE 601–800	10
The University of British Columbia	Canada	SCImago #144 · THE 45 · QS 40	10
North China University of Science and Technology	China	SCImago #6043	10
Northeastern University	United States	QS 384	9
Tsinghua University	China	SCImago #8 · THE 12 · QS =17	9
City University of Hong Kong	China	SCImago #342 · THE 73 · QS =63	8
Tianjin University	China	SCImago #90 · THE 201–250 · QS =257	8
Yanshan University	China	SCImago #2614 · THE 1201–1500	8
Beijing University of Chemical Technology	China	SCImago #781 · THE 401–500 · QS =697	8

Geographic distribution of citing authors

Country	Citing papers
China	358
South Korea	36
United States	31
Canada	21
Australia	20
United Kingdom	16
Singapore	12
Thailand	12
India	11
Germany	6
Japan	6
Taiwan	5

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	Highly stable Zn metal anodes enabled by atomic layer deposited Al 2 O 3 coating for aqueous zinc-ion batteries	487	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	Electronic Metal–Support Interactions between Pt Nanoparticles and Co(OH)2 Flakes for CO Oxidation	19	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	Molecular-layer-deposited tincone: A new hybrid organic–inorganic anode material for three-dimensional microbatteries	9	8 CFR 204.5(h)(3)(v) — Criterion 5