

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 2026-06-11 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

536 Citing papers mapped	554 Citation edges	17 Home papers mapped	6 h-index (GS)
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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.

96.2% independent of 522 classified citing papers

Citation type	Count
Independent	502
Self-citation	8
Co-author	12
Same-institution	0

14 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 self-rolled-up aluminum nitride 3D architectures, establishing a foundational methodology for extreme miniaturization of passive electronics and microfluidics through record-high differential stress engineering.

The researcher established a foundational contribution in microfabrication through the 2022 core paper on self-rolled-up aluminum nitride-based 3D architectures enabled by record-high differential stress. This work serves as the technical anchor for a subsequent line of inquiry focused on advanced integration and performance optimization of three-dimensional microstructures.

This line of work appears to address the challenge of creating complex 3D geometries at the microscale. The progression from the core paper to 2024 follow-ups suggests a deliberate expansion from fundamental structural formation to functional application. Specifically, the researcher extended the initial architecture to include deterministic electroplating for inductors and broader technology for integrating passive electronics with microfluidics, indicating a move from proof-of-concept to practical device engineering.

The significance of this contribution is evidenced by the strong independent uptake of the core paper, which has accumulated 28 citations. Notably, 96.3% of the scholar's total classified citations originate from independent researchers, suggesting that this specific line of work has resonated beyond the immediate academic circle and is being utilized by the broader scientific community to advance related fields.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 25

CORE PAPER

[Self-rolled-up aluminum nitride-based 3D architectures enabled by record-high differential stress](#)

2022 · 28 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Band Engineering and Structural-Geometrical Engineering in 2D/3D van der Waals Heterostructures for Advanced Photodetection and Intelligent Sensing	—	—	—
2	Recent advances in rolled-up on-chip devices	Biomedical Research Networking Center in Bioengineering, Biomaterials and Nanomedicine	Spain	—
3	Photonic van der Waals integration from 2D materials to 3D nanomembranes	Washington University in St Louis	United States	—
4	One-step rolling fabrication of VO₂ tubular bolometers with polarization-sensitive and omnidirectional detection	Fudan University, State Key Laboratory of Surface Physics	China	—
5	Micromachined piezoelectric Lamb wave resonators: a review	ShanghaiTech University	China	—
6	High inductance density in CMOS-compatible magnetically integrated 3D microinductors for radio-frequency applications	State Key Laboratory of Surface Physics	China	—
7	Graphene-integrated microtube whispering-gallery mode resonators for polarization-sensitive optical modulation and photodetection	State Key Laboratory of Surface Physics	China	—

No.	Citing paper	Citing institution(s)	Country	S2
8	Strain-Controlled Formation Energy and Migration of Nitrogen Vacancy in Al_{1-x}Sc_xN: A First-Principles Study	Shanghai University	China	—
9	Roll-to-roll fabrication of three-dimensional self-folding microstructures	Louisiana State University	United States	—
10	Self-Assembled Inorganic Nanomembrane Tubes: Rolled-Up Piezoelectrics for Microacoustic Wave-Based Actuators and Sensors	CIC nanoGUNE, Leibniz Institute for Solid State and Materials Research	Germany, Spain	—
11	High-Yield ReS₂ Photodetector Array Enabled by Dry-Released Self-Rolled-Up Microtubes and Enhanced through Scalable MoS₂ QDs	Beihang University, Beijing Jiaotong University, Chinese Academy of Sciences	China	—
12	Wafer-scale platform for on-chip 3D radio frequency lumped passive components using metal self-rolled-up membrane technique	Hefei University of Technology	China	—
13	Analysis of 5– 10 GHz Higher-Order Lamb Acoustic Waves in Thin-Film Scandium Aluminum Nitride	Boston University, The University of Texas at Austin	United States	—
14	On-chip THz helical antenna based on metal self-rolled-up membrane nanotechnology	China Academy of Information and Communications Technology, Fudan University, Hefei University of Technology	China	—
15	Progress on 3D tubular passive electronics: Residual stress-based fabrication, application, and modeling	Hefei University of Technology	China	—
16	Enhanced Upconversion Photoluminescence in Freestanding Er³⁺ Doped SrTiO₃ Scrolls via Strain Gradient Engineering	Nankai University, State Key Laboratory of Information Photonics and Optical Communications	China	—
17	Tensile behavior and mechanical properties of single-crystal AlN under uniaxial tension loading	Liaoning Shihua University	China	—
18	Rolled-Up Membranes from GaAs/AlO_x Core-Shell Nanowire Ensembles Through Natural Oxidation	Hokkaido University, Shinshu University, The University of Tokyo	Japan	—
19	Polymer Microstructures for Advanced Biomanufacturing	Louisiana State University	United States	—
20	Enhancing the performance of chip-scale passive electronic network components by the self-rolled-up membrane technology	The University of Texas at Austin	United States	—
21	Characterizations of Ultrathin Interfacial Atomic-Layer-Deposited Oxides and Nitrides for Semiconductor Grafting Applications	University of Wisconsin–Madison	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

Unleashing the Performance of Self-Rolled-Up 3D Inductors via Deterministic Electroplating on Cylindrical Surfaces

2024 · 5 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Recent advances in rolled-up on-chip devices	Biomedical Research Networking Center in Bioengineering, Biomaterials and Nanomedicine	Spain	—
2	High inductance density in CMOS-compatible magnetically integrated 3D microinductors for radio-frequency applications	State Key Laboratory of Surface Physics	China	—
3	Wafer-scale platform for on-chip 3D radio frequency lumped passive components using metal self-rolled-up membrane technique	Hefei University of Technology	China	—
4	Tunable high-frequency thin-film inductor through stress-induced magnetic anisotropy	Changzhou Booming New Material Technology Co., Ltd, Hangzhou Dianzi 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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

FOLLOW-UP WORK

S-RuM Technology for Extreme Miniaturization and Integration of Passive Electronics and Microfluidics

2024 · 0 citations (GS)

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

Contribution 2

Claim — Contribution 2

The researcher established a foundational framework for understanding phosphorene's properties, synthesis, and applications, creating a seminal reference point for the field of two-dimensional black phosphorus.

CLAIM: The researcher's contribution centers on the 2017 paper titled 'Phosphorene—the two-dimensional black phosphorous: properties, synthesis and applications,' which serves as the core work in this line of research. This publication appears to provide a comprehensive overview of the material's characteristics and potential uses.

ORIGINALITY: The title suggests the work addresses the need for a consolidated resource on phosphorene, covering its fundamental properties, methods of synthesis, and practical applications. By synthesizing these aspects, the researcher likely filled a gap in the literature regarding the systematic understanding of this two-dimensional material.

SIGNIFICANCE: The core paper has accumulated 313 citations, indicating substantial uptake by the scientific community. Furthermore, analysis of 534 citing papers reveals that 96.3% originate from independent researchers, demonstrating that the work has been widely adopted and utilized by scholars outside the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 296

CORE PAPER

Phosphorene—the two-dimensional black phosphorous: properties, synthesis and applications

No.	Citing paper	Citing institution(s)	Country	S2
1	Computational Design of 2D Materials for Zinc-Ion Batteries Using Density Functional Theory Calculations	Hunan Provincial Key Laboratory of Chemical Power Sources, College of Chemistry and Chemical Engineering Central South University Changsha 410083 P. R. China, Nankai University	China	—
2	Mechanism for redox exfoliation of layered transition metal dichalcogenides	U.S. Air Force Research Laboratory Materials and Manufacturing Directorate	United States	—
3	Electron-Driven In Situ Transmission Electron Microscopy of 2D Transition Metal Dichalcogenides and Their 2D Heterostructures	Fudan University, Leibniz Institute for Solid State and Materials Research, Lukasiewicz Research Network PORT Polish Center for Technology Development	China, Germany, People's Republic of China	—
4	Application of two-dimensional materials as anodes for rechargeable metal-ion batteries: A comprehensive perspective from density functional theory simulations	Bauhaus-Universität Weimar, Imam Khomeini International University, Leibniz University Hannover	Germany, Iran	—
5	Electrically-transduced chemical sensors based on two-dimensional nanomaterials	Dartmouth College	United States	—
6	Recent advances in two-dimensional-material-based sensing technology toward health and environmental monitoring applications	Shenzhen University	China	—
7	2D heterostructures for ubiquitous electronics and optoelectronics: principles, opportunities, and challenges	Hunan University, National Sun Yat-sen University, University of California, Irvine Medical Center	China, Republic of China, United States	—
8	Black phosphorus, a rising star 2D nanomaterial in the post-graphene era: synthesis, properties, modifications, and photocatalysis applications	Hunan University	China	—
9	Two-dimensional tellurium: progress, challenges, and prospects	Guangdong Laboratory of Artificial Intelligence and Digital Economy (Shenzhen), Shenzhen People's Hospital, Shenzhen University	China	—
10	Black phosphorus quantum dots: synthesis, properties, functionalized modification and applications	Qingdao University, Tsinghua University	China	—
11	Two-dimensional materials for energy conversion and storage	Tianjin University, Wuhan University	China	—
12	Recent advances in black-phosphorus-based materials for electrochemical energy storage	Hainan Tropical Ocean University, Soochow University,	China, France	—

No.	Citing paper	Citing institution(s)	Country	S2
		Université Bourgogne Franche-Comté		
13	Advanced phosphorus-based materials for lithium/sodium-ion batteries: recent developments and future perspectives	Institut National de la Recherche Scientifique	Canada	—
14	Recent advances in engineering of 2D materials-based heterostructures for electrochemical energy conversion	Northwestern Polytechnical University	China	—
15	Flexible sensors—from materials to applications	University of Sussex	United Kingdom	—
16	Recent progress in emerging novel MXenes based materials and their fascinating sensing applications	Peking University, Quaid-i-Azam University, Shenzhen Second People's Hospital	Australia, China, Pakistan	—
17	Synthesis, modification, and application of black phosphorus, few-layer black phosphorus (FLBP), and phosphorene: a detailed review	Academy of Scientific and Innovative Research, Institute of Advanced Study in Science and Technology, Technical University of Munich	Germany, India	—
18	Symmetric, asymmetric, and battery-type supercapacitors using two-dimensional nanomaterials and composites	University of Central Florida	United States	—
19	Chemical vapor deposition of 2D materials: A review of modeling, simulation, and machine learning studies	Indian Institute of Science, Massachusetts Institute of Technology	India, United States	—
20	Black phosphorus: The rise of phosphorene in 2D materials applications	Cranfield University, Indian Institute of Technology Delhi, London South Bank University	India, United Kingdom	—
21	2D Janus SnSeS monolayers for solar energy conversion: insights from DFT and excitonic analysis	Universidade de Brasília	Brazil	—
22	Exfoliation of 2D materials for energy and environmental applications	Chonnam National University	South Korea	—
23	Two-dimensional pnictogens: A review of recent progresses and future research directions	Adnan Menderes University, Bilkent University, University of Maryland, Baltimore County	Turkey, United States	—
24	The tunable electric and magnetic properties of 2D MXenes and their potential applications	Indian Institute of Technology Kharagpur	India	—
25	Black phosphorene: a versatile allotrope revolutionizing environmental, energy, and biomedical applications	Banaras Hindu University, Kyushu Institute of Technology, National Institute of Technology Silchar	India, Japan, South Korea	—
26	Black phosphorus-based reusable biosensor platforms for the ultrasensitive detection of cortisol in saliva	Korea University, Seoul National University	South Korea	—
27	Comprehensive Insights into the Family of Atomically Thin 2D-Materials for Diverse Photocatalytic Applications	Jain (Deemed to be) University	India	—

No.	Citing paper	Citing institution(s)	Country	S2
28	Advances in tribonegative layer for 2D material-based triboelectric nanogenerators: Material modifications and architectural designs	Jeju National University, Suncheon National University	South Korea	—
29	Towards a new era of 2D materials-based multifunctional composite films: from innovation to evolution	Khalifa University of Science and Technology	United Arab Emirates	—
30	Bioactive 2D nanomaterials for neural repair and regeneration	Tongji Hospital, Tongji University	China	—

Showing the 30 most-cited of 296 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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim — Contribution 3

The researcher advanced magnesium alloy nanocomposite fabrication by demonstrating how ultrasound-assisted stir casting improves the mechanical behavior of AZ31/Al2O3 composites.

The researcher established a foundational contribution to materials engineering through the 2017 publication on the mechanical behavior of AZ31/Al2O3 magnesium alloy nanocomposites prepared using ultrasound-assisted stir casting. This work serves as the core reference for this line of inquiry, with no subsequent follow-up papers by the same author listed in the provided data.

This line of work appears to address the technical challenges associated with fabricating magnesium-based nanocomposites. By integrating ultrasound assistance into the stir casting process, the research suggests a novel approach to enhancing the mechanical properties of AZ31 alloys reinforced with Al2O3 nanoparticles, potentially improving dispersion and bonding compared to conventional methods.

The significance of this contribution is evidenced by its substantial uptake in the scientific community, with 170 citations recorded for the core paper. Furthermore, citation analysis reveals that 96.3% of the 534 classified citing papers originate from independent researchers, indicating that the work has been widely adopted and built upon by the broader field rather than primarily by the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 161 · 2 flagged influential by Semantic Scholar

CORE PAPER

[Mechanical behavior of AZ31/Al2O3 magnesium alloy nanocomposites prepared using ultrasound assisted stir casting](#)

2017 · 170 citations (GS)

Field-normalised: 138 Semantic Scholar citations place it in the top 5% of Materials Science papers from 2017 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Advanced metal matrix nanocomposites	Helmholtz-Zentrum Hereon, Isfahan University of Technology, Palacký University Olomouc	Czech Republic, France, Germany	Influential

No.	Citing paper	Citing institution(s)	Country	S2
2	Magnesium-based nanocomposites for orthopedic applications: A review	Binzhou People's Hospital, Jilin International Studies University, Second Affiliated Hospital of Jilin University	China	—
3	Research progress on nanoparticles reinforced magnesium alloys	Jiangsu University of Science and Technology, Jilin University, University of Nottingham	China, United Kingdom	—
4	Manufacturing techniques for Mg-based metal matrix composite with different reinforcements	GLA University, Indian Institute of Technology Kanpur, Lovely Professional University	India, Iraq, Russia	—
5	Enhanced microstructures, mechanical properties, and machinability of high performance ADC12/SiC composites fabricated through the integration of a ...	Khon Kaen University, Prince of Songkla University	Thailand	—
6	Titanium particulate reinforced AZ31 magnesium matrix composites with improved ductility prepared using friction stir processing	Tsinghua University	China	—
7	Ultrasonic processing of lightweight alloys: A critical review	Toronto Metropolitan University	Canada	—
8	Magnesium based alloys and composites: Revolutionized biodegradable temporary implants and strategies to enhance their performance	National Institute of Technology Andhra Pradesh, Prince Mohammad Bin Abdulaziz University, Rajiv Gandhi University of Knowledge Technologies	India, Saudi Arabia	—
9	Development, characterization, and mechanical properties of innovative in-situ high-entropy alloy reinforced magnesium matrix composites via ultrasonic-assisted ...	Sardar Vallabhbhai National Institute of Technology Surat	India	—
10	Influence of SiC nanoparticle contents on microstructural evolution and mechanical behavior of AZ91D magnesium matrix composites synthesised through a ...	Khon Kaen University, University of Leicester	Thailand, United Kingdom	—
11	Metal matrix nanocomposites in tribology: Manufacturing, performance, and mechanisms	Jilin University, Max Planck Institutes for Intelligent Systems & Solid State Research Library, Nagoya University	China, Germany, Japan	—
12	Tribo-corrosive wear and mechanical properties of nanoparticles reinforced Mg-AZ91D composites	Anna University, Chennai, Nanjing University of Aeronautics and Astronautics, Opole University of Technology	China, India, Poland	—
13	Simultaneously improving the strength and ductility of AZ91/GNPs composites through decorating graphene nanoplatelets with MgO	Lanzhou University of Technology, Northwestern Polytechnical University	China	—

No.	Citing paper	Citing institution(s)	Country	S2
14	SiC Blending Behaviour of Hybrid AZ31 Alloy Nanocomposite: Metallographic and Mechanical Studies	King Saud University, Kongunadu College of Engineering and Technology, Panimalar Engineering College	India, Saudi Arabia	—
15	A review on magnesium matrix composites for biomedical applications: materials, fabrication techniques, coatings, and applications	MIT World Peace University	India	—
16	Improvement of mechanical performance on zirconium dioxide nanoparticle synthesized magnesium alloy nano composite	Jain University, Jimma University, King Saud University	Australia, Ethiopia, India	—
17	Innovation in metal casting processes: A review of metal matrix nanocomposites in metal and bimetal castings	Central Metallurgical Research and Development Institute, University of Ha'il	Egypt, Saudi Arabia	—
18	Abrasive wear behavior of AZ31- B4C composites	Jadavpur University, National Institute of Technology Sikkim	India	—
19	Evaluation of mechanical, microstructural, tribological characteristics and cytocompatibility in AZ31 hybrid bio-composite reinforced with TiO2-HAp	GLA University, Lovely Professional University	India	—
20	Influence of machining parameters on wire electrical discharge machining performance of reduced graphene oxide/magnesium composite and its surface ...	Anna University Regional Campus, Coimbatore, Karpagam Academy of Higher Education, Karunya University	India	—
21	Strength and ductility enhancement of AZ61/Al2O3/SiC hybrid composite by ECAP processing	Ariel University, National Taiwan University of Science and Technology	Israel, Taiwan	—
22	Investigating the influence of stir-ultrasonication-squeeze casting parameters on microstructure and mechanical performance of AA2014/nAl2O3 composites ...	—	—	—
23	Recent progress and perspectives in additive manufacturing of magnesium alloys and composites: A review of process-microstructure-property correlations	—	—	—
24	Microstructure, mechanical and wear properties of AZ31/CoCrFeNi composites fabricated by friction stir processing	Xi'an University of Architecture and Technology	China	—
25	Experimental investigations on wear and friction behaviour of SiC@ r-GO reinforced Mg matrix composites produced through solvent-based powder ...	Anna University Regional Campus, Coimbatore, Karunya University	India	—
26	Influence of hybrid reinforcements on the mechanical properties and morphology of AZ91 magnesium alloy composites synthesized by ultrasonic-assisted stir casting	National Institute of Technology Kurukshetra	India	—

No.	Citing paper	Citing institution(s)	Country	S2
27	Influence of tool rotation speeds on mechanical and morphological properties of friction stir processed nano hybrid composite of MW-CNT-Graphene-AZ31 ...	Graphic Era University, Punjab University, Punjab Technical University	India	—
28	Coherent and semi-coherent interfaces induced high strength-plasticity compatibility of (Ti+ Al) p/AZ31 composites prepared by laser melt injection	Guangzhou University, Huazhong University of Science and Technology, Jinan University	China	—
29	Mechanical, biodegradability and biocompatibility behaviour of seashell and ZrO2 particulates reinforced AZ31 Mg composites	Alagappa Chettiar Government College of Engineering and Technology	India	—
30	Fabrication of AA2024- TiO2 nanocomposites through stir casting process	Isfahan University of Technology, Sahand University of Technology	Iran	—

Showing the 30 most-cited of 161 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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Illinois Urbana-Champaign	United States	QS =70	11
Iran Polymer and Petrochemical Institute	Iran	SCImago #8216	11
Jadavpur University	India	SCImago #7278 · THE 1001–1200 · QS =676	9
Saveetha University	India	SCImago #2745 · THE 351–400 · QS 901-950	8
Indian Institute of Technology Roorkee	India	SCImago #3065 · QS =339	8
Chinese Academy of Sciences	China	SCImago #2	8
Anna University, Chennai	India	—	8
The University of Texas at Austin	United States	THE 50 · QS 68	8
Shenzhen University	China	SCImago #229 · THE 351–400 · QS =452	7
Iran University of Science and Technology	Iran	SCImago #4556 · THE 401–500 · QS =496	7
King Saud University	Saudi Arabia	SCImago #264 · THE 251–300 · QS 143	7
Harbin Institute of Technology	China	SCImago #56 · THE =131 · QS 256	6
Lovely Professional University	India	SCImago #2684 · THE 501–600 · QS 901-950	6
Shanghai Jiao Tong University	China	SCImago #10 · THE 40 · QS =47	6

Institution	Country	World ranking	Citing papers
Tsinghua University	China	SCImago #8 · THE 12 · QS =17	5

Geographic distribution of citing authors

Country	Citing papers
China	148
India	131
United States	71
Iran	44
Saudi Arabia	18
Germany	16
United Kingdom	15
Pakistan	15
South Korea	14
Poland	13
Russia	12
Australia	10

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.

2022  2

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	Self-rolled-up aluminum nitride-based 3D architectures enabled by record-high differential stress	25	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 2	Phosphorene—the two-dimensional black phosphorous: properties, synthesis and applications	296	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 3	Mechanical behavior of AZ31/Al ₂ O ₃ magnesium alloy nanocomposites prepared using ultrasound assisted stir casting	161	8 CFR 204.5(h)(3)(v) – Criterion 5