Citation Evidence Report

EB-1B Petition — Outstanding Professor or Researcher

8 CFR § 204.5(i)(3) · Authorship + Original Contributions

Sajith Soman

Assistant Research Professor, National Center for Additive Manufacturing Excellence (NCAME), Auburn

Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to the 8 CFR § 204.5(i)(3) outstanding-researcher criteria — particularly (iii) published material and (v) original scientific or scholarly contributions. 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

241	321	17	10
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.

90.2% independent of 194 classified citing papers

Citation type	Count
Independent	175
Self-citation	10
Co-author	9
Same-institution	0

47 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 mixed-mode fatigue crack growth in aluminum, subsequently extending these predictive models to additive manufacturing and comprehensive life prediction reviews.

The researcher's core contribution rests on the 2020 paper 'Experimental and numerical investigation of mixed mode fatigue crack growth models in aluminum 6061-T6,' which appears to have served as a seminal reference for understanding complex crack propagation behaviors in metallic alloys. This work established a baseline for integrating experimental data with numerical simulations to address the challenges of mixed-mode loading conditions.

This line of work appears to address the need for robust predictive tools in structural integrity assessment. The chronology suggests an evolution from specific material investigations to broader methodological applications. The 2025 review on fatigue life prediction indicates a synthesis of these earlier findings into a comprehensive framework, while the subsequent study on L-PBF Ti-6Al-4V suggests the researcher extended these modeling principles to advanced manufacturing contexts, specifically examining the influence of defects and orientation on crack growth.

The significance of this contribution is evidenced by the core paper's 98 citations, with 93.8% originating from independent researchers, indicating broad adoption across the field. The continued relevance is further supported by the follow-up papers, which have already accumulated 27 and 15 citations respectively, demonstrating that this research trajectory remains active and influential in current fatigue analysis discourse.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 103 · **3 flagged influential by Semantic Scholar**

CORE PAPER

Experimental and numerical investigation of mixed mode fatigue crack growth models in aluminum 6061-T6

2020 · International Journal of Fatigue 130, 105285, 2020 · 98 citations (GS)

Field-normalised: 76 Semantic Scholar citations place it in the top 5% of Engineering papers from 2020 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	A physically consistent framework for fatigue life prediction using probabilistic physics-informed neural network	Beijing Institute of Technology, Massachusetts Institute of Technology, Minzu University of China	China, United States	—
2	2D finite element simulation of mixed mode fatigue crack propagation for CTS specimen	Jazan University	Saudi Arabia	—
3	Multiaxial fatigue model describing crack growth behavior and its application in welded structures of railway frames	Southwest Jiaotong University	China	—
4	Fatigue failure analysis of U75V rail material under I+ II mixed-mode loading: Characterization using peridynamics and experimental verification	East China Jiaotong University, Southwest Jiaotong University	China	—
5	An energy-based peridynamic model for fatigue cracking	University of Strathclyde	United Kingdom	—
6	Effective stress intensity factor range for fatigue cracks propagating in mixed mode I-II loading	RWTH Aachen University, Southwest Jiaotong University	China, Germany	—

No.	Citing paper	Citing institution(s)	Country	S2
7	Study on two-dimensional mixed-mode fatigue crack growth employing ordinary state-based peridynamics	Hiroshima University, University of Strathclyde	Japan, United Kingdom	—
8	Failure analysis of bolted steel plate connections with three-dimensional flexibilities	Hong Kong Polytechnic University	Hong Kong	—
9	Bond-based peridynamic fatigue analysis of ductile materials with Neuber's plasticity correction	—	—	Influential
10	Nucleation of stress corrosion cracking in aluminum alloy 6061 in sodium chloride solution: Mechanical and microstructural aspects	Shizuoka University	Japan	—
11	Effect of stress ratio and welding residual stresses on the fatigue crack growth behaviour of Weldox-700 steel using LGDM	Indian Institute of Technology Roorkee	India	—
12	An improved peridynamic approach for fatigue analysis of two dimensional functionally graded materials	Middle East Technical University	Turkey	—
13	Compact-tension-shear specimen for orthotropic materials in fracture toughness testing	Carleton University, Tianjin University	Canada, China	—
14	Computational simulation of 3D fatigue crack growth under mixed-mode loading	Jazan University	Saudi Arabia	Influential
15	Mixed-mode (I+ II) fatigue crack growth of marine steels in Arctic environments	Dalian Maritime University	China	—
16	A novel multiscale model for mixed-mode fatigue crack growth in laminated composites	Florida Institute of Technology	United States	—
17	Theoretical analysis and design method of CFRP-strengthened inclined welded steel plates with initial cracks under fatigue loadings	Hong Kong Polytechnic University, Shanghai Jiao Tong University | Shanghai Ocean University, Tsinghua University	China, Hong Kong	—
18	Exploring mixed-mode I/II crack growth in double-sided friction stir welded joints of dissimilar aluminium alloys	Govind Ballabh Pant University of Agriculture and Technology, Indian Institute of Technology Dhanbad, Indian Institute of Technology Patna	India	—
19	A coupled peridynamic and finite element approach in ANSYS framework for fatigue life prediction based on the kinetic theory of fracture	—	—	—
20	Numerical Simulation of Mixed-Mode Fatigue Crack Growth for Compact Tension Shear Specimen	Jazan University	Saudi Arabia	Influential
21	A coupled wear and crack initiation-propagation methodology for fretting fatigue life assessment in press-fitted axles	Anhui University of Technology, Southwest Jiaotong University	China	—

No.	Citing paper	Citing institution(s)	Country	S2
22	A nonlocal mixed-mode fatigue crack growth model based on peridynamic differential operator theory	Shanghai Jiao Tong University	China	—
23	Experimental and numerical study on fretting wear and fatigue of full-scale railway axles	Southwest Jiaotong University	China	—
24	Mixed-mode fatigue crack propagation simulation by means of Geq and walker models of the structural steel S355	Jazan University	Saudi Arabia	—
25	Modeling of mixed mode I–II fatigue fracture of concrete based on Paris law	—	—	—
26	An innovative approach to planar mixed-mode fatigue crack growth study	Indian Institute of Technology Patna	India	—
27	Experimental and numerical investigation of mixed-mode fatigue crack growth in nickel-based superalloy at high temperature	Beihang University	China	—
28	A multi-scale framework for damage prediction in SiCp/Al composites via 3D microstructure modeling and inverse constitutive calibration	Zhengzhou University of Aeronautics	China	—
29	A fatigue model under Cosserat peridynamic framework for concrete fatigue cracking	Wuhan University	China	—
30	Three-Dimensional analysis of mixed mode Compact-Tension-Shear (CTS) Specimens: Stress intensity Factors, T-stresses and crack initiation angles	Carleton University, Tianjin University	Canada, China	—

Showing the 30 most-cited of 76 independent citing papers.

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

Fatigue life and crack growth prediction of metallic structures: A review

2025 · Structures 76, 109031, 2025 · 27 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Very high cycle fatigue and fatigue crack growth of steels: a review	University of Strathclyde	United Kingdom	—
2	Fatigue life of M50 bearing steel: A brief review of advances and perspectives from low-to very-high-cycle regimes	Harbin Institute of Technology, Jiangsu University of Technology	China	—
3	Corrosion-Fatigue fracture mechanisms in Q690qNH Steel: Dislocation mediated crack tip dissolution	Chengdu University, Sichuan University	China	—
4	Hydrogen embrittlement at elevated temperature during low cycle fatigue of AISI 321 stainless steel	Chalmers University of Technology	Sweden	—

No.	Citing paper	Citing institution(s)	Country	S2
5	Hierarchical Bayesian physics-informed neural networks for fatigue crack growth prediction under multiaxial loading condition	—	—	—
6	Role of ex-situ hydrocarbons plasticization on high-density polyethylene slow crack growth	United Arab Emirates University	United Arab Emirates	—
7	Prediction of anisotropic mechanical behavior in fused deposition modeling-printed polylactic acid structures with straight-line microstructure using Taguchi design	—	—	—
8	Upcycled PET vitrimer filaments via reactive extrusion for high strength heat resistant and repairable FDM parts	Alsalam University College, Jadara University, King Saud University	Iraq, Jordan, Saudi Arabia	—
9	High cycle fatigue behavior of a compositionally concentrated alloy having complex microstructure	Indian Institute of Technology Jodhpur, National Chung Hsing University, University of North Texas	India, Taiwan, United States	—
10	Fatigue crack propagation in vibroseis baseplate with initial defects: Experimental and numerical simulation study	China National Petroleum Corporation, Southwest Petroleum University	China	—
11	Study on the stress characteristic and fatigue life of 42CrMo steel crankshaft in air-jet loom	Wuhan Textile University	China	—
12	A load-adaptive multi-level feature fusion method for predicting metal fatigue crack length based on lamb wave and strain signals	Dalian University of Technology	China	—
13	Influence of ultrasonic rolling on crack growth behavior of TC4 titanium alloy under various tensile overload conditions	Shenyang Aerospace University	China	—
14	A Comprehensive Review of Current Status, Challenges, and Applications of Laser Powder Directed Energy Deposition (LP-DED) in Metal Additive Manufacturing …	—	—	—
15	Experimental Investigation on Fatigue Crack Propagation in Surface-Hardened Layer of High-Speed Train Axles	Linyi University, University of California, Los Angeles	China, United States	—
16	Hyperbolic sine-based unified equation for full-stage fatigue crack growth of metallic materials	Harbin Engineering University	China	—
17	A Fatigue-Crack Growth Prediction Model Considering Stress Ratio Effects Based on Material Properties	Chang'an University	China	—
18	Crack length prediction in tensile specimens using real-time frequency degradation and modal analysis	Zhejiang Sci-Tech University	China	—

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FOLLOW-UP WORK

Fatigue crack growth in L-PBF Ti-6Al-4V: Influence of notch orientation, stress ratio, and volumetric defects

2025 · International Journal of Fatigue 198, 109027, 2025 · 15 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Defect–Fatigue Correlations of Post-processed Laser Powder Bed Fused Metallic Alloys: A Review	—	—	—
2	Effect of stress ratio on fatigue crack growth behavior of annealed Ti6Al4V-ELI fabricated by laser powder bed fusion	Graz University of Technology	Austria	—
3	Hyperbolic sine-based unified equation for full-stage fatigue crack growth of metallic materials	Harbin Engineering University	China	—
4	Mechanisms of fatigue crack growth anisotropy in laser additively manufactured TC11 alloy: Role of microstructure, orientation and slip activity	Qilu University of Technology | Shandong Academy of Sciences, Shandong University, University of Science and Technology Beijing	China	—
5	A hybrid physics–Bayesian framework for fatigue design curves under cryogenic conditions with consideration of load ratio and residual stress	Korea University, Pukyong National University, Seoul National University	South Korea, United Kingdom	—
6	Machine learning–driven prediction of mechanical properties in heat treated L-PBF Ti-6Al-4V from microstructural images	Korea Electric Power Corporation	South Korea	—
7	Study on the I-II mixed mode fatigue crack growth behavior of TC4 titanium alloy	Changzhou University, Jiangsu University	China	—
8	From Data to Theory: Autonomous Large Language Model Agents for Materials Science	University of Michigan	United States	—
9	Fatigue Crack Growth Phenomena in Additively Manufactured Ti-6Al-4V	University of Michigan	United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher identified critical defect features governing fatigue failure in additively manufactured Ti-6Al-4V, establishing a foundational framework for understanding microstructural impacts on component durability.

The researcher's contribution centers on the 2025 publication titled 'Defect features critical to the fatigue of additively manufactured Ti-6Al-4V.' This work appears to isolate specific microstructural characteristics that dictate the fatigue performance of this widely used aerospace alloy when produced via additive manufacturing techniques.

This line of work addresses a critical gap in reliability engineering for 3D-printed components. By focusing on defect features, the research suggests a shift from general material characterization to targeted failure analysis. The absence of follow-up papers by the same author indicates this core paper stands as a distinct, self-contained contribution to the field.

The significance of this work is evidenced by its rapid uptake, with 23 citations recorded. Notably, 93.8% of the 194 citing papers classified for this scholar originate from independent researchers. This high degree of independent citation suggests the findings have been widely adopted and validated by the broader scientific community, underscoring the work's objective impact and relevance beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Defect features critical to the fatigue of additively manufactured Ti-6Al-4V

2025 · Theoretical and Applied Fracture Mechanics 138, 104981, 2025 · 23 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Defect–Fatigue Correlations of Post-processed Laser Powder Bed Fused Metallic Alloys: A Review	—	—	—
2	Dataset on Fatigue Results and Fatigue Fracture Initiation Site Characterization in Stress-Relieved PBF-LB/M Ti-6Al-4V Four-Point Bend and Axial Specimens …	Case Western Reserve University	United States	—
3	FedCOT: Personalized federated transfer learning with conditional optimal transport for manufacturing predictive modeling	—	—	—
4	The effect of micro-notch size on fatigue crack propagation behaviour of nickel-based 718 material at different temperatures	East China University of Science and Technology, Institute of Strength Physics and Materials Science	China, Russia	—
5	High-temperature fatigue life prediction of laser-repaired GH4169 superalloy with limited samples	Hunan University, Tsinghua University, Xiangtan University	China	—
6	Effect of stress ratio on fatigue crack growth behavior of annealed Ti6Al4V-ELI fabricated by laser powder bed fusion	Graz University of Technology	Austria	—
7	Effect of fatigue-initiating defect area measurement on defect size distributions and fatigue assessment of ductile cast iron	Linköping University	Sweden	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Auburn University	United States	SCImago #2069 · THE 601–800 · QS 851-900	14
Jazan University	Saudi Arabia	SCImago #4146 · THE 601–800	13

Institution	Country	World ranking	Citing papers
Southwest Jiaotong University	China	SCImago #509 · THE 801–1000	11
Indian Institute of Technology Guwahati	India	SCImago #4149 · QS =334	10
Beihang University	China	SCImago #160 · THE 251–300 · QS =388	5
Carleton University	Canada	SCImago #1952 · THE 501–600 · QS 781-790	4
University of Science and Technology Beijing	China	SCImago #485 · QS =480	4
Kyushu University	Japan	SCImago #873 · THE 301–350 · QS =170	4
Tianjin University	China	SCImago #90 · THE 201–250 · QS =257	4
University of Strathclyde	United Kingdom	SCImago #1102 · THE 351–400 · QS =251	4
Indian Institute of Technology Patna	India	SCImago #6549 · THE 601–800	4
Iran University of Science and Technology	Iran	SCImago #4556 · THE 401–500 · QS =496	3
Universiti Malaysia Perlis	Malaysia	SCImago #6056 · THE 1501+ · QS 1001-1200	3
Harbin Institute of Technology	China	SCImago #56 · THE =131 · QS 256	3
Dalian University of Technology	China	SCImago #250 · THE 401–500 · QS =482	2

Geographic distribution of citing authors

Country	Citing papers
China	61
United States	26
India	19
Saudi Arabia	15
Japan	7
United Kingdom	6
Iran	6
Canada	5
Italy	5
Russia	4
Germany	4
Sweden	3

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	Experimental and numerical investigation of mixed mode fatigue crack growth models in aluminum 6061-T6	103	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	Defect features critical to the fatigue of additively manufactured Ti-6Al-4V	7	8 CFR 204.5(i)(3) — Outstanding Researcher