Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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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 Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. 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

105	125	23	7
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.

74.1% independent of 27 classified citing papers

Citation type	Count
Independent	20
Self-citation	3
Co-author	4
Same-institution	0

78 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 advanced magnetic hyperthermia efficiency by systematically investigating magnetic anisotropy in cobalt-substituted iron oxide nanoparticles and extending these principles to rare-earth doped and annealed nanomaterials.

The researcher established a foundational contribution to magnetic hyperthermia through the 2021 core paper examining the role of magnetic anisotropy in spherical Fe3−xCoxO4 nanoparticles. This work serves as the anchor for a coherent research line focused on optimizing magnetic properties for thermal therapy applications.

This line of work appears to address the critical need for precise control over magnetic parameters to enhance hyperthermia efficiency. By progressing from cobalt substitution in 2021 to rare-earth doping in 2022 and annealing effects in 2023, the researcher demonstrates a systematic approach to refining nanoparticle crystallinity and magnetic behavior, suggesting a deliberate strategy to overcome limitations in thermal conversion efficiency.

The significance of this contribution is evidenced by sustained scholarly attention, with the core paper accumulating 33 citations and follow-up works receiving 11 and 7 citations respectively. Notably, 74.1% of the 27 classified citations originate from independent researchers, indicating that this work has been adopted and built upon by the broader scientific community rather than remaining confined to the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Role of Magnetic Anisotropy on the Hyperthermia Efficiency in Spherical Fe3−xCoxO4 (x = 0–1) Nanoparticles

2021 · Applied Sciences 11 (3), 930, 2021 · 33 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Magnetic Investigation of Se/In Codoped Co0.5Ni0.5Fe2O4 Spinel Nanoparticles Synthesized via the Sonochemical Route	Faculty of Engineering, Imam Abdulrahman Bin Faisal University, Istanbul Medeniyet University	Australia, Saudi Arabia, Turkey	—
2	Tuning the Surface States of Fe3O4 Nanoparticles for Enhanced Magnetic Anisotropy and Induction Efficacy	Australian Centre for Neutron Scattering, University of Wollongong	Australia	—
3	Influence of different magnetic nanoheaters on the thermoresponsive deswelling of pNIPAM/alginate ferrogels for remotely activated release devices	Instituto Nacional de Tecnología Industrial, Universidad de Buenos Aires, Universidad Nacional de La Plata	Argentina	—
4	Magnetic Field-Modulated Boolean Logic in Proteinoid- Fe3 O4 Hybrid Materials	University of the West of England	United Kingdom	—

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

Rare-earth doped BiFe0.95Mn0.05O3 nanoparticles for potential hyperthermia applications

2022 · Frontiers in Bioengineering and Biotechnology 10, 965146, 2022 · 11 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Lead-free halide perovskites for photocatalysis via high-throughput exploration	The University of Tennessee–Knoxville	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

Effects of annealing temperature on the magnetic properties of highly crystalline biphase iron oxide nanorods

2023 · AIP Advances 13 (2), 2023 · 7 citations (GS)

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

Contribution 2

Claim — Contribution 2

The researcher developed tunable iron oxide nanostructures with emergent magnetic properties, establishing a foundation for advanced magnetic therapies and metamagnetic materials.

The researcher's contribution centers on the 2022 core paper regarding emergent magnetism and exchange bias in iron oxide nanocubes. This work established a method for tuning phase and size to control magnetic behavior, serving as the foundation for subsequent investigations into complex magnetic interactions.

This line of work appears to address the challenge of controlling magnetic properties at the nanoscale. By demonstrating tunability in nanocubes, the researcher laid the groundwork for later studies on superparamagnetic superparticles for hyperthermia and metamagnetic transitions in nanorods, suggesting a systematic approach to overcoming size limits and managing competing interactions.

The significance of this research is evidenced by its uptake in the field. The core paper has garnered 12 citations, while follow-up works have accumulated 24 and 14 citations respectively. Notably, 74.1% of citations across this body of work originate from independent researchers, indicating that the broader scientific community recognizes and builds upon these findings.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

Emergent magnetism and exchange bias effect in iron oxide nanocubes with tunable phase and size

2022 · Journal of Physics: Condensed Matter 34 (49), 495301, 2022 · 12 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Magnetization Dynamics in Cobalt-Decorated Cobalt Ferrite Nanocomposites: Implications for High-Frequency Electromagnetic Shielding	—	—	—
2	Structural and Magnetic Properties of CoFe2O4 Nanoparticles in an α-Fe2O3 Matrix	Consiglio Nazionale delle Ricerche, Le Mans Université, Università Politecnica delle Marche	France, Italy, Sweden	—

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

Superparamagnetic superparticles for magnetic hyperthermia therapy: overcoming the particle size limit

2025 · ACS Applied Materials & Interfaces 17 (13), 19436-19445, 2025 · 24 citations (GS)

Field-normalised: 18 Semantic Scholar citations place it in the top 10% of Medicine papers from 2025 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Magnetic hyperthermia-based therapies for cancer targeting: current progress and future perspectives	Chitkara College of Pharmacy, Chitkara University, Lovely Professional University	India	—
2	Development of Size-Tunable Superparamagnetic Iron Oxide/Fluorescent Conjugated Polymer Composite Nanoparticles for Sentinel Lymph Node Biopsy	The University of Tokyo	Japan	—
3	Nanomaterials for Theranostic Management of Oral Cancer: Advances in Imaging, Biosensing, Targeted Delivery, and Multimodal Synergistic Therapy	920th Hospital of Joint Logistics Support Force of Chinese People's Liberation Army, Chengdu Medical College, The Second Affiliated Hospital of Kunming Medical University	China	—
4	The Dual-Faceted Role of Metal-Based Nanomaterials in Hepatic Fibrosis Therapy	Shandong 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).

FOLLOW-UP WORK

Competing magnetic interactions and field-induced metamagnetic transition in highly crystalline phase-tunable iron oxide nanorods

2023 · Nanomaterials 13 (8), 1340, 2023 · 14 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Leveraging data mining, active learning, and domain adaptation for efficient discovery of advanced oxygen evolution electrocatalysts	Nanjing University, North China Electric Power University, The Hong Kong University of Science and Technology	China, United States	—
2	Intrinsic magnetotransport and orientation dependent topological Hall effect in EuAuBi	Indian Institute of Technology Delhi, Max-Planck-Institute for Chemical Physics of Solids	Germany, India	—

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 South Florida	United States	SCImago #806 · THE 351–400 · QS =654	7
University of Houston	United States	SCImago #893 · THE 401–500 · QS =556	3
Uppsala University	Sweden	SCImago #349 · THE 128 · QS 93	2
Instituto Nacional de Tecnología Industrial	Argentina	—	1
Xinjiang Second Medical College	China	—	1
The Second People's Hospital of Qujing City	China	—	1
Chitkara College of Pharmacy	India	—	1
Max-Planck-Institute for Chemical Physics of Solids	Germany	—	1
Yogi Vemana University	India	SCImago #10470	1
Sri Krishnadevaraya University	India	SCImago #9459	1
Govt. Degree College	India	—	1
Institute of Integrated Research	—	—	1
Sumitomo Chemical	Japan	—	1
Institute of Solid State Chemistry and Mechanochemistry SB RAS	Russia	—	1
KPJ Healthcare University College	Malaysia	—	1

Geographic distribution of citing authors

Country	Citing papers
United States	11
China	5
India	4
Japan	2
Australia	2
Germany	2
Saudi Arabia	2
Sweden	2
Argentina	1
Malaysia	1
Russia	1
United Kingdom	1

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Role of Magnetic Anisotropy on the Hyperthermia Efficiency in Spherical Fe3−xCoxO4 (x = 0–1) Nanoparticles	5	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Emergent magnetism and exchange bias effect in iron oxide nanocubes with tunable phase and size	8	Dhanasar — Prong 2 (well-positioned)