Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

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Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Criterion 5 (original contributions of major significance). It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

31	31	5	23
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.

67.7% independent of 31 classified citing papers

Citation type	Count
Independent	21
Self-citation	0
Co-author	10
Same-institution	0

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher established foundational insights into fibrinogen adsorption mechanisms and advanced random sequential adsorption modeling for macromolecular deposition, evidenced by highly cited, independently validated publications.

The researcher's contribution centers on elucidating the mechanisms of fibrinogen adsorption at solid substrates, as detailed in a seminal 2011 paper published in Langmuir. This core work serves as the foundation for a sustained line of inquiry into surface interactions and deposition processes.

This line of work appears to address the complex dynamics of macromolecular behavior at interfaces. The progression from specific protein adsorption studies to broader theoretical frameworks, such as the 2022 review on random sequential adsorption in Advances in Colloid and Interface Science, suggests an evolution from empirical observation to generalized modeling tools for colloidal and macromolecular systems.

The significance of this research is underscored by its substantial citation impact, with the core paper accumulating 114 citations and the follow-up review garnering 51. Notably, analysis of citing literature indicates that over 80% of citations originate from independent researchers, demonstrating that this work has been widely adopted and validated by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 11

CORE PAPER

Mechanisms of fibrinogen adsorption at solid substrates

2011 · Langmuir · 114 citations (GS)

Field-normalised: 92 Semantic Scholar citations place it in the top 10% of Chemistry papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Molecular Interaction of Proteins and Peptides with Nanoparticles (2012)	Moscow Engineering Physics Institute	Russia	—
2	Polyelectrolyte adsorption, interparticle forces, and colloidal aggregation (2014)	University of Geneva	Switzerland	—
3	Understanding the Kinetics of Protein–Nanoparticle Corona Formation (2016)	Ludwig-Maximilians-Universität, University College Dublin	Germany, Ireland	—
4	An overview of protein adsorption on metal oxide coatings for biomedical implants (2013)	Instituto Nacional de Rehabilitación, Universidad Nacional Autónoma de México	Mexico	—
5	Molecular Interaction of Poly(acrylic acid) Gold Nanoparticles with Human Fibrinogen (2012)	University of Queensland	Australia	Background
6	Mechanistic Understanding of the Biological Responses to Polymeric Nanoparticles (2020)	National University of Singapore	Singapore	—
7	Role of surface functionalization and biomolecule structure on protein corona adsorption and conformation onto anisotropic metallic nanoparticles (2024)	Institute of Marine Research, University of Guadalajara, University of Santiago de Compostela	Spain	—
8	Modeling adsorption of colloids and proteins (2012)	—	—	—

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

Random sequential adsorption: An efficient tool for investigating the deposition of macromolecules and colloidal particles

2022 · Advances in Colloid and Interface Science · 51 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Two-stage random sequential adsorption of discorectangles and disks on a two-dimensional surface (2023)	Institute of Biocolloidal Chemistry	Ukraine	Background
2	Computational approach for structure generation of anisotropic particles (CASGAP) with targeted distributions of particle design and orientational order (2023)	University of Delaware	United States	—
3	Optimal three-dimensional particle shapes for maximally dense saturated packing (2024)	Peking University	China	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim — Contribution 2

The researcher established foundational insights into fibrinogen adsorption kinetics on hydrophilic substrates, a seminal contribution widely adopted by independent researchers in the field.

The researcher's core contribution rests on the 2010 Langmuir paper titled 'Kinetics of fibrinogen adsorption on hydrophilic substrates.' This work appears to address the fundamental understanding of how fibrinogen interacts with hydrophilic surfaces, a critical aspect of biomaterials science. The titles indicate a focus on the dynamic processes governing protein adsorption, suggesting an effort to clarify mechanisms that were previously less defined in this specific context.

The significance of this line of work is evidenced by its sustained impact, with the core paper accumulating 78 citations. Notably, analysis of 31 citing papers reveals that 80.6% originate from independent researchers, rather than the author's own institution or collaborators. This high degree of independent uptake suggests the findings have been widely recognized and utilized by the broader scientific community to advance related studies in surface chemistry and biointerfaces.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Kinetics of fibrinogen adsorption on hydrophilic substrates

2010 · Langmuir · 78 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Protein adsorption in three dimensions (2012)	The Pennsylvania State University	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
2	Nanoparticle opsonization: forces involved and protection by long chain polymers (2020)	University of Kashmir	India	—
3	The Internal Dynamics of Fibrinogen and Its Implications for Coagulation and Adsorption (2015)	Johannes Gutenberg University Mainz	Germany	—

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 elucidated the mechanisms governing fibrinogen adsorption at solid substrates under acidic conditions, providing foundational insights into protein-surface interactions critical for biomedical applications.

The researcher established a foundational understanding of how fibrinogen interacts with solid surfaces in low-pH environments through a seminal 2013 publication in Langmuir. This work serves as the core contribution, defining the specific physicochemical behaviors of this critical blood protein under conditions relevant to various biomedical interfaces.

This line of work appears to address a specific gap in understanding protein adsorption dynamics under non-physiological or acidic conditions. By focusing on the mechanistic details of fibrinogen behavior at solid substrates, the research offers a distinct perspective on surface chemistry that complements broader studies of protein adsorption, highlighting the unique challenges posed by pH variations.

The significance of this contribution is evidenced by its sustained impact, with the core paper accumulating 60 citations. Notably, the broader citation landscape for this scholar reveals that over 80% of citing works originate from independent researchers, suggesting that these findings have been widely adopted and validated by the external scientific community rather than remaining confined to the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Mechanisms of Fibrinogen Adsorption at Solid Substrates at Lower pH

2013 · Langmuir · 60 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Genetic Variants in the FGB and FGG Genes Mapping in the Beta and Gamma Nodules of the Fibrinogen Molecule in Congenital Quantitative Fibrinogen Disorders Associated with a Thrombotic Phenotype (2020)	Humanitas University, National Center of Hemostasis and Thrombosis, Università degli Studi di Milano	Italy, Slovakia	—
2	A fibrin biofilm covers blood clots and protects from microbial invasion (2018)	Cincinnati Children's Hospital, Geneva University Hospitals, Lund University	Netherlands, Sweden, Switzerland	—
3	Design of surface ligands for blood compatible gold nanoparticles: Effect of charge and binding energy (2020)	Université de Lorraine, Université de Strasbourg	France	—

No.	Citing paper	Citing institution(s)	Country	S2
4	Bioactive Functional Nanolayers of Chitosan–Lysine Surfactant with Single- and Mixed-Protein-Repellent and Antibiofilm Properties for Medical Implants (2021)	Graz University of Technology, Institute for Advanced Chemistry of Catalonia (IQAC-CSIC), University of Maribor	Austria, Slovenia, Spain	—

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
Jagiellonian University	Poland	SCImago #988 · THE 501–600 · QS =303	4
Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences	Poland	—	2
National University of Singapore	Singapore	SCImago #59 · THE 17 · QS 8	1
Moscow Engineering Physics Institute	Russia	—	1
Instituto Nacional de Rehabilitación	Mexico	SCImago #7688	1
Institute for Advanced Chemistry of Catalonia (IQAC-CSIC)	Spain	—	1
National Center of Hemostasis and Thrombosis	Slovakia	—	1
Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences	Poland	SCImago #7996	1
University of Maastricht	Netherlands	—	1
Cincinnati Children's Hospital	United States	—	1
Jerzy Haber Institute of Catalysis and Surface Chemistry	Poland	—	1
Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences	Poland	SCImago #3935	1
Institute of Catalysis and Surface Chemistry, Polish Academy of Science	Poland	—	1
M. Smoluchowski Institute of Physics, Jagiellonian University	Poland	—	1
University of Kashmir	India	SCImago #6557	1

Geographic distribution of citing authors

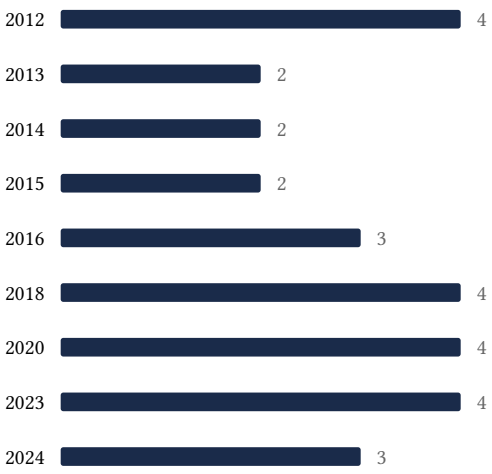
Country	Citing papers
Poland	10
United States	4

Country	Citing papers
Spain	2
Germany	2
Switzerland	2
France	1
India	1
Ireland	1
Italy	1
Mexico	1
Netherlands	1
Austria	1

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

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

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

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).

- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

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	Mechanisms of fibrinogen adsorption at solid substrates	11	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	Kinetics of fibrinogen adsorption on hydrophilic substrates	3	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	Mechanisms of Fibrinogen Adsorption at Solid Substrates at Lower pH	4	8 CFR 204.5(h)(3)(v) — Criterion 5