François Barthelat, Ph.D, Ing.

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CURRENT APPOINTMENTS

- Associate Professor, Mechanical Engineering, McGill University (2012-present)
- Assistant Professor, Mechanical Engineering, McGill University (2006-2012)
- Associate Member, Biomedical Engineering, McGill University (2007-present)

RESEARCH INTERESTS

- Mechanics of deformation and fracture in biological materials
- Bio-inspired and biomimetic materials
- Biological and bio-inspired interfaces
- Architectured materials
- Novel experimental techniques for materials testing and solid mechanics

EDUCATION

- *Postdoctoral Researcher* (January 2006 to September 2006), Department of Mechanical Engineering, Northwestern University, IL, USA. Supervisor: Professor H.D. Espinosa.

- *Ph.D. in Mechanical Engineering* (September 2000 to December 2005), Northwestern University, IL, USA. Thesis: *The Mechanical Performance of Nacre from Seashells – Superior Toughness through Microstructural Design.* Thesis Committee: H.D. Espinosa (advisor), I. M. Daniel, L. M. Keer, P. B. Messersmith.

- *Master in Mechanical Engineering* (September 1997 to September 1998), University of Rochester, NY, USA. Thesis: *The poroelastic behavior of growth plate cartilage.* Thesis Committee: A. M. Lerner (advisor), R. Perucchio, H. Palmer.

- *Bachelor of Mechanical Engineering* (September 1995 to June 1997), Ecole Nationale Supérieure d'Electricité et de Mécanique, Nancy, France. Area of specialization: *Solid Mechanics.*

DISTINCTIONS AND AWARDS

- *NSERC Discovery Accelerator Supplement* (2012-2015).
- *Best Paper Award* at the Society for Experimental Mechanical Annual Conference, Biological Systems and Materials Division (67 papers): "Multiscale characterization of a high-performance armor: fish scales"
- *Top-ten downloaded article* in the journal *Bioinspiration and Biomimetics* over the past two years (2011)
- One of seven articles selected as highlight for 2010 in the journal *Bioinspiration and Biomimetics* (2011)
- *Top-ten cited article* in the *Journal of the Mechanics and Physics of Solids* over the past 5 years (2011)
- *Best Paper by a Young Researcher* awarded at the 12th International Conference on Fracture, out of 700+papers (2009)
- *Hetényi Award* for best research paper of the year published in *Experimental Mechanics* (2005)
- *Walter P. Murphy Fellowship*, Northwestern University (2000)
- *Smith Terminal Year Fellowship*, Department of Mechanical Engineering, Northwestern University (2005)

WORK EXPERIENCE

- *Associate Professor* (September 2006 to Present) Department of Mechanical Engineering, McGill University, Montreal QC, Canada.
  - Established the Biomimetic Materials Laboratory for theoretical and experimental studies of biological and bio-inspired materials.
  - Conducted fundamental research on materials at the macro, micro and nano-scale with application in aerospace and medicine.
  - Taught and developed undergraduate and graduate courses.
  - Supervised the research of undergraduate and graduate students.
  - Established and sustained multidisciplinary research collaborations.

- *Postdoctoral Research Associate* (January 2006 to September 2006) Department of Mechanical Engineering, Northwestern University, Evanston IL, USA.
  - Designed synthetic composites mimicking nacre.
  - Supervised the research of graduate students.

- *Graduate Research Assistant* (September 2000 to December 2005) Department of Mechanical Engineering, Northwestern University, Evanston IL, USA.
    - Characterized the structure and mechanics of nacre from seashells, from macro to nanoscale.
    - Developed mechanistic models for the deformation and failure of nacre, based on composite models and fracture mechanics.
    - Performed high strain rate testing and dynamic fluid-structure interaction experiments on structured materials and aluminum foams using a Kolsky bar and a light gas gun, and designed new setups and equipment for these experiments.

- *Development Engineer* (December 1998 to September 2000) Datapointlabs, Ithaca NY, USA.
    - Implemented testing procedures consistent with ASTM standards.
    - Developed new mechanical testing procedures for polymers.
    - Designed new testing equipment: miniature creep testing frames, high speed three point bending fixture for use with an instrumented impact tester.

- *Graduate Research Assistant* (September 1997 to September 1998) Department of Mechanical Engineering, University of Rochester, Rochester NY, USA.
    - Implemented a transverse isotropic poroelastic model in a finite element code to model the behavior of growth plate cartilage.
    - Developed an optimization scheme to solve an inverse problem based on experimental stress-relaxation data.

PROFESSIONAL MEMBERSHIP

- *Ingénieur,* Ordre des Ingénieurs du Québec, Canada (2010 to Present)
- *Member*, Materials Research Society (MRS), USA (2006 to Present)
- *Member*, American Society of Mechanical Engineers (ASME), USA (2006 to Present)
- *Member*, Society for Experimental Mechanics (SEM), USA (2006 to Present)

INTERNAL APPOINTMENTS

- *Member*, Centre for Bone and Periodontal Research (2007-present)
- *Member*, Network for Oral and Bone Health Research (2007-present)
- *Member*, McGill Institute for Advanced Materials (2011-present)

TEACHING

- *Mechanics of Biological Materials* (MECH 547, new course developed and taught in winter 2010 as MECH 500: Selected Topic in Mechanical Engineering).
- *Mechanics of Deformable Solids* (MECH 321, taught twice)
- *Design of Machine Elements Design* (MECH 393, taught three times)
- *Theory of Elasticity* (MECH 635, taught three times)
- *Mechanics 1: Statics* (MECH 210, taught five times)

PUBLICATIONS

Scopus (www.scopus.com): Total number of citations: 572, *h*-index=12

Underlined names denote students working under my direct supervision or co-supervision, * indicates corresponding author(s).

Invited Publications in Peer-Reviewed Journals

[J26] S. Cavelier, C. J. Barrett and F. Barthelat*: "The mechanical performance of a biomimetic nanointerface made of multilayered polyelectrolytes". *European Journal of Inorganic Chemistry*, Special issue on "Organic-Inorganic Hybrid Materials: Design and Applications", in press (2012) **Invited**

[J25] S. Bekah, R. Rabiei and F. Barthelat* "The micromechanics of biological and biomimetic staggered composites". *Journal of Bionic Engineering*, in press (2012) **Invited**

[J24] S. Bekah, R. Rabiei and F. Barthelat*: "Structure, Scaling and Performance of Natural Micro- and Nanocomposites". *BioNanoScience* 1 (1-2) p. 53-61 (2011) **Invited**

[J23] F. Barthelat*: "Nacre from mollusk shells: a model for high-performance structural materials" *Bioinspiration & Biomimetics*, special issue: "Biomimetics of Aquatic Life - Applications for Engineering", 5 (3) p 1-8 (2010). **Invited** and selected as one of seven Journal Highlights for 2010, downloaded more than 700 times since August 2010

Publications in Peer-Reviewed Journals

[J22] A. K. Dastjerdi, R. Rabiei and F. Barthelat*: "The weak interfaces within tough natural composites: experiments on three types of nacre" To appear in the *Journal of the Mechanical Behavior of Biomedical Materials* (2012)

[J21] A. Khayer Dastjerdi, M. Pagano, M.T. Kaartinen, M.D. McKee and F. Barthelat* "Cohesive behavior of soft biological adhesives: Experiments and modeling". *Acta Biomaterialia* 8 (9), pp. 3349-3359 (2012)

[J20] J. Poissant and F. Barthelat*."In-situ mechanical testing of hydrated biological nanofibers using a nanoindenter transducer". *Experimental Mechanics*, in press (2012)

[J19] H. Humburg, D. Zhu, S. Beznia and F. Barthelat*: "Bio-inspired Tapered Fibers for Composites with Superior Toughness". *Composites Science and Technology* **72** (9) , p 1012-1019 (2012)

[J18] A. K. Miri, François Barthelat and Luc Mongeau*: "Effects of Dehydration on the Viscoelastic Properties of Vocal Folds in Large Deformations", Accepted for publication in *Journal of Voice* (2012)

[J17] D. Zhu, C. Fuentes Ortega, R. Motamedi, L. Szewciw, F. Vernerey and F. Barthelat*: "Structure and mechanical performance of a modern fish scale" *Advanced Biomaterials* 14 (4), p B185-B194 (2012) **Cover of issue and featured on www.sciencenow.com, www.MaterialsViews.com and www.AskNature.org**

[J16] M. Yourdkhani, D. Pasini and F. Barthelat*: "Multiscale Mechanics and Optimization of Gastropod Shells", *Journal of Bionic Engineering* **8** p 357-368 (2011)

[J15] F. Barthelat* and D. Zhu: "A Novel Biomimetic Material Duplicating the Structure and Mechanics of Natural Nacre", *Journal of Materials Research* 26 (10) (2011)

[J14] F. Barthelat* and R. Rabiei: "Toughness Amplification in Natural Composites" to appear in the *Journal of the Mechanics and Physics of Solids* 59 p.829-840 (2011)

[J13] F. Vernerey* and F. Barthelat: "On the Mechanics of Fish-Scale Structures". *International Journal of Solids and Structures* 47 (17) p 2268-2275 (2010)

[J12] R. Rabiei, S. Bekah and F. Barthelat*: "Failure mode transition in nacre and bone-like materials". *Acta Biomaterialia* 6 p 1081-4089 (2010)

[J11] J. Poissant and F. Barthelat*: "A Novel "Subset Splitting" Procedure for Digital Image Correlation on Discontinuous Displacement Fields". *Experimental Mechanics* 50 (3) p 353-364 (2010)

[J10] H.D. Espinosa*, J.E. Rim, F. Barthelat and M.J. Buehler: "Merger of Structure and Material in Nacre and Bone - Perspectives on de novo Biomimetic Materials", *Progress in Materials Science* 54, p 1059-1100 (2009)

[J9] F. Barthelat*: "Biomimetics for Next Generation Materials". *Philosophical Transactions of the Royal Society A: Mathematical and Engineering Sciences* 365, p 2907-2919 (2007)

[J8] F. Barthelat and H.D. Espinosa*: “An Experimental Investigation of Deformation and Fracture of Nacre-Mother of Pearl”. *Experimental Mechanics* 47 (3), p 311-324 (2007)

[J7] H. Tang, F. Barthelat and H.D. Espinosa*: “An Elasto-Viscoplastic Interface Model for Investigating the Constitutive Behavior of Nacre”. *Journal of the Mechanics and Physics of Solids* 55 (7), p 1410-1438 (2007)

[J6] F. Barthelat*, H. Tang, P.D. Zavattieri, C.-M. Li and H.D. Espinosa*: “On the mechanics of mother-of-pearl: A key feature in the material hierarchical structure”. *Journal of the Mechanics and Physics of Solids* 55 (2), p 306-337 (2007). **JMPS top-10 most cited article over the past 5 years**

[J5] F. Barthelat, C.M. Li, C. Comi and H.D. Espinosa*: “Mechanical Properties of Nacre Constituents and Their Impact on Mechanical Performance”. *Journal of Materials Research* 21 (8): Mechanics of Biological and Biomimetic Materials at Small Length-Scales p 1977-1986 (2006)

[J4] S. Lee, F. Barthelat, J.W. Hutchinson and H.D. Espinosa*: “Dynamic Failure of Metallic Pyramidal Truss Core Materials - Experiment and Modeling*”. International Journal of Plasticity* 22 (11), p 2118-2145 (2006)

[J3] S. Lee, F. Barthelat, N. Moldovan, H.D. Espinosa and H.N.G. Wadley*: “Deformation Rate Effects on Failure Modes of Open-Cell Al Foams and Textile Cellular Materials”. *International Journal of Solids and Structures* 43 (1), p 53-73 (2006)

[J2] F. Barthelat, Z. Wu, B.C. Prorok and H.D. Espinosa*: “Dynamic Torsion Testing of Nanocrystalline Coatings Using High-Speed Photography and Digital Image Correlation”. Experimental Mechanics 43 (3), 331-340 (2003), **Hetényi Award for best paper of the year in Experimental Mechanics**

[J1] S. Thelen, F. Barthelat and L. C. Brinson*: “Mechanics Considerations for Microporous Titanium as an orthopedic implant material”. *Journal of Biomedical Materials Research* 69A(4), 601-610 (2004)

Book Chapters

[B5] F. Vernerey* and F. Barthelat: “Nano, micro and macro mechanics of fish scales". In *Handbook of Advances in Micromechanics and Nanomechanics* (2012)

[B4] R. Rabiei and F. Barthelat*: “Hierarchical structure of biomimetic biomaterials". In *Biomimetic Biomaterials*, Woodhead publishing (2011)

[B3] R. Rabiei, S. Bekah and F. Barthelat*: “Nacre from mollusk shells: Inspiration for high performance nanocomposites". In *Natural Polymers, Volume II: Natural Polymer Nanocomposites*, M. J. John and S. Thomas (Eds). Royal Society of Chemistry (2011)

[B2] F. Barthelat, J. Rim, and H.D. Espinosa*: “A Review on the Structure and Mechanical Properties of Mollusk Shells – Perspectives on Synthetic Biomimetic Materials". In A*pplied Scanning Probe Methods XIII: Biomimetics and Industrial Applications*, B. Bhushan and H. Fuchs (Eds). Springer (2009).

[B1] F. Barthelat, K. Malukhin, and H.D. Espinosa*: “Quasi-Static and Dynamic Torsion Testing of Ceramic Micro and Nano-Structured Coating Using Speckle Photography". In *Recent Advances in Experimental Mechanics*, Gdoutos, E.E. (Ed.). Kluwer Academic Publishers (2002)

Articles in Refereed Conference Proceedings

[C6] R. Rabiei, S. Bekah and F. Barthelat*: “Failure mode transition in natural mineralized composites” *Proceedings of the Materials Research Society Fall Meeting,* November 29-December 3, 2010 (Boston, MA), Symposium OO (Bioinspired and Biological Materials), paper OO1.11

[C5] D. Zhu and F. Barthelat*: “A Macroscale Biomimetic Composite Duplicating the Deformation Mechanisms of Nacre” *Proceedings of the Materials Research Society Fall Meeting,* November 29-December 3, 2010 (Boston, MA), Symposium OO (Bioinspired and Biological Materials), paper O11.3

[C4] M. Yourdkhani, D. Pasini, and F. Barthelat*: “The hierarchical structure of seashells optimized to resist mechanical threats” *WIT Transactions on Ecology and the Environment* 138, pp. 141-152 (2010)

[C3] F. Barthelat* and R. Rabiei: “Micromechanics of fracture in nacre from mollusk shells” *Proceeding of the 12th International Conference on Fracture 2009 (ICF-12)* (2009)

[C2] F. Barthelat and H. D. Espinosa*: “Mechanical properties of nacre constituents: An inverse method approach” *Materials Research Society Symposium Proceedings* 844, art. no. Y7.5, pp. 67-78 (2005)

[C1] F. Barthelat, D. Fonck, and A.L. Lerner*: “Investigation of the poroelastic behavior of the rabbit growth plate cartilage” *American Society of Mechanical Engineers*, Bioengineering Division BED 42, pp. 757-758 (1999)

Other Abstracts and Non-refereed Conferences Proceedings

[A22] S. Bekah and F. Barthelat*: "Optimum Structures and Length Scale in Biological and Bio-inspired Composites" *Society for Experimental Mechanics Annual Conference*, June 13-16 2011 (Uncasville, CT USA)

[A21] D. Zhu, F. Vernerey and F. Barthelat*: "The Mechanical Performance of Teleost Fish Scales" *Society for Experimental Mechanics Annual Conference*, June 13-16 2011 (Uncasville, CT USA)

[A20] D. Zhu and F. Barthelat*: "A Novel Biomimetic Material Duplicating the Structure and Mechanics of Natural Nacre" *Society for Experimental Mechanics Annual Conference*, June 13-16 2011 (Uncasville, CT USA)

[A19] R. Rabiei, S. Bekah and F. Barthelat*: "Deformation and fracture mode transition in nacre and bone-like materials" *ASME International Mechanical Engineering Congress & Exposition*, Nov. 12-18 2010 (Vancouver, BC)

[A18] F. Barthelat* and D. Zhu : "A Macroscale Biomimetic Composite Duplicating the Deformation Mechanisms of Nacre" *ASME International Mechanical Engineering Congress & Exposition*, Nov. 12-18 2010 (Vancouver, BC)

[A17] R. Rabiei, S. Bekah and F. Barthelat*: "Deformation and Failure Mode Transition in Hard Biological Composites" *Society for Experimental Mechanics - SEM Annual Conference and Exposition on Experimental and Applied Mechanics, Indianapolis (IN)* (2010)

[A16] J. Poissant and F. Barthelat*: "Applications of the subset splitting digital image correlation (SSDIC) method in fracture mechanics"*, Society for Experimental Mechanics Annual Meeting, June 4-7 2010* (Indianapolis IN)

[A15] J. Poissant and F. Barthelat*: "A Novel Digital Image Correlation Procedure for Discontinuous Displacement Fields"*, Society for Experimental Mechanics Annual Conference and Exposition,* June 1-3 2009 (Albuquerque NM)

[A14] F. Barthelat* and R. Rabiei: "Micromechanics of fracture in sheet and columnar nacre", *Society for Experimental Mechanics Annual Conference and Exposition,* June 1-3 2009 (Albuquerque NM)

[A13] R. Rabiei, S. Bekah and F. Barthelat*: "Structure, deformation and fracture of different types of nacres", *ASME International Mechanical Engineering Congress & Exposition*, Oct.31st –Nov. 6th 2008 (Boston, MA)

[A12] F. Barthelat* and R. Rabiei: “The Deformation and Fracture of Nacre-Mother of Pearl”, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 4-6 2008 (Orlando, FL)

[A11] F. Barthelat* and H. D. Espinosa*: “The deformation and fracture of Nacre-Mother of Pearl” *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics* , June 4-6 2007 (Springfield, MA)

[A10] F. Barthelat and H.D. Espinosa*: “Mechanical Properties of Nacre Constituents: An Inverse Method Approach”, *Materials Research Society Fall Meeting, Symposium on Mechanical Properties of Bioinspired and Biological Materials,* November 29-December 3, 2004 (Boston, MA)

[A9] Y. Zhu, F. Barthelat, P.E. Labossiere, N. Moldovan, and H.D. Espinosa*: “Nanoscale Displacement and Strain Measurement”, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 2-4 2003 (Charlotte, NC)

[A8] S. Lee, F. Barthelat, and H.D. Espinosa*: “Strain Rate Effects in Metallic Cellular Materials”, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 2-4 2003 (Charlotte, NC)

[A7] F. Barthelat and H.D. Espinosa*: "Elastic Properties of Nacre Aragonite Tablets”, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 2-4 2003 (Charlotte, NC)

[A6] Y. Zhu, F. Barthelat, P.E.W. Labossiere, N. Moldovan and H.D. Espinosa*: “Nanoscale Displacement and Strain Measurement“, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 2-4 2003 (Charlotte, NC)

[A5] S. Lee, F. Barthelat and H.D. Espinosa*: “Strain Rate Effects in Metallic Cellular Materials”, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 2-4 2003 (Charlotte, NC)

[A4] F. Barthelat, K. Malukhin and H. Espinosa*: “Quasi-Static and Dynamic Torsion Testing of Ceramic Coatings Using High-Speed Photography”, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 10-12 2002 (Milwaukee, WI)

[A3] F F. Barthelat and H. Espinosa*: “Tensile Testing of Abalone Nacre Miniature Specimens Using Microscopy and Speckle Correlation”, *Society for Experimental Mechanics Annual Conference and Exposition on Experimental and Applied Mechanics*, June 10-12 2002 (Milwaukee, WI)

[A2] F. Barthelat and H.D. Espinosa*: “Investigation of deformation mechanisms in Abalone Shells from nano to microscales”, *ASME International annual congress and exposition*, November 17-22 2002 (New Orleans, LA)

[A1] F. Barthelat and H. Lobo*: “High Velocity 3 Point Bending Test Using an Impact Tower”, *Society of Plastics Engineers Annual Technical Conference*, May 7-11 2000 (Orlando, FL)

Patents

[P2] H.D. Espinosa and F. Barthelat: “Building composite structure having material capable of deformation strain used in aeronautics involves layering first ceramic tablets alternating with second ceramic tablets in first layer, and then in second layer”. U.S patents US2012067519-A1; US8176705-B2;

[P1] H.D. Espinosa and F. Barthelat: “Synthetic composite material, useful e.g. in aeronautics, defensive material, orthopedics and micro-electro-mechanical system, comprises interlocking ceramic tablets, where the ceramic tablets further comprise e.g. core and overlap area”. U.S patent US8067078-B1

Invited Conference Presentations and Seminars

- *The multiple toughness amplifications of natural composites: the example of nacre 4th International Conference on Mechanics of Biomaterials & Tissues.* Special session: "Science and engineering of natural materials: Merging structure and material" Hawai’i (Dec. 11–15 2011)
- *Toughness amplification in natural material: structural and scale effects.* Materials Research Society Fall Meeting, symposium on “Multiscale Mechanics of Hierarchical Materials" Boston MA, (Nov. 28 – Dec. 2, 2011)
- *High-performance composites inspired from nature*. University of British Columbia, Advanced Materials Process Engineering Laboratories, Vancouver BC (Nov. 19th 2010)
- *Nacre from mollusk shells: a model for high-performance biomimetic materials.* Department of Civil Engineering, Purdue University IN (June 11th 2010)
- *Biomimetics for next generation materials.* John Abbott College, Sainte-Anne-de-Bellevue QC (Jan. 19th 2010)
- *Structure and Properties of Mineralized Tissues: The Deformation and Fracture of Nacre from Mollusk Shells.* Society for Integrative and Comparative Biology Symposium: “Biomaterials: Properties, Variation and Evolution”, Boston MA (Jan. 6th 2009)
- *Hard Biological Materials as Models for Bio-inspired Composites.* 1st Biomimetic Symposium, McGill University, Montreal QC (Nov. 31st 2008)

- *The deformation and fracture of nacre and other hard biological materials.* Department of Mechanical Engineering, University of Alberta, Edmonton AB (May 6th 2008)
- *The deformation and fracture of nacre and other hard biological materials.* Department of Mechanical Engineering, State University of New York at Stony Brook, Stony Brook NY (Apr. 24th 2008)
- *The Deformation and Fracture of Nacre-mother of Pearl.* ASME meeting, Seattle WA (Nov. 15th 2007)
- *The deformation and fracture of nacre and other hard biological materials*. Department of Mechanical Engineering, University or Vermont, Burlington VT, (Nov. 2nd 2007)
- *The deformation and fracture of nacre (mother-of-pearl) and other mineralized tissues*. Faculty of Dentistry, McGill University, Montreal QC (Sept. 20th 2007)
- *The deformation and fracture of nacre (mother-of-pearl) and other hard biological materials*. Bioengineering seminar series, McGill University, Montreal QC (Mar. 16th 2007)
- *The Mechanical Performance of Nacre from Seashells – Superior Toughness through Microstructural Design*. Biomedical Engineering department, McGill University, Montreal QC (Mar. 16th 2007)
- *Dynamic failure of metallic foams and blast resistant structures*. McGill Shock Wave Physics Group meeting, Montreal QC (Dec. 1st 2006)

ACTIVITIES IN PROFESSIONAL SOCIETIES

Society for Experimental Mechanics: Elected Vice-Chair of the Biological Systems and Materials Technical Division. Organized and Chaired annual meeting sessions and symposiums (2007 through 2011).

American Society of Mechanical Engineers: Topic Organizer for IMECE meetings (2008, 2010)

Bioinspiration and Biomimetics: Editorial Board (Invited)

Experimental Techniques: Associate Editor (Invited)

Applied Mechanics Reviews: Associate Editor (Invited)

Modeling and Numerical Simulation of Material Science: Editorial Board (Invited)

Journal of the Mechanical Behavior of Biomedical Materials: Special issue guest editor

Reviewer for *Science, Nature Communications, Journal of the Royal Society Interface, Acta Biomaterialia, Biomaterials, Journal of Materials Research, Journal of the Mechanics and Physics of Solids, Journal of Biomedical Materials Research: Part A, Journal of the Mechanical Behavior of Biomedical Materials, Bioinspiration and biomimetics, Experimental Mechanics, Experimental techniques, Optics Express, Journal of Composite Materials, Composites Science and Technology, Strain, Journal of Tribology, Modeling and Simulation in Materials Science and Engineering, Biophysical Chemistry.*