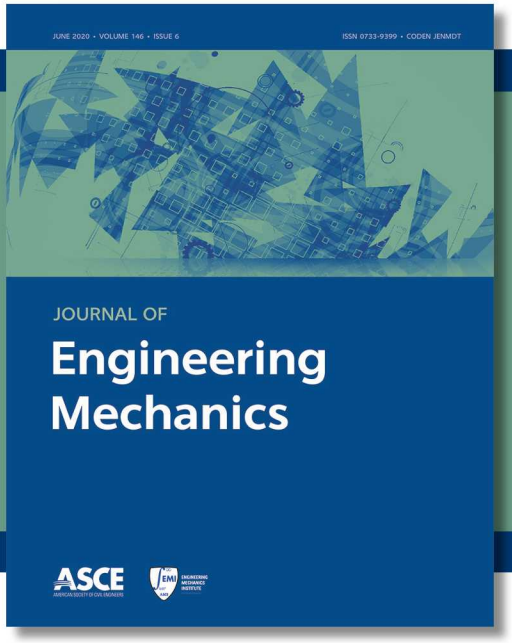
ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Journal of Engineering Mechanics

Guest Editors:
Chloé Arson (Georgia Tech)
Tal Cohen (MIT)
Nima Rahbar (WPI)

Call for Papers

Special Issue on Mechanics of Self-Healing Materials and Structures



Aims & Scope

Self-healing of materials and structures is the process of restoration of mechanical functionality by means of a variety of mechanisms that range from active mineralization and polymerization to ordered or disordered self-assembly. It is now emerging as a highly topical issue in engineering mechanics of soft materials and dense matter, because of its potential impact on safe and sustainable engineering design. While a variety of disciplines and communities have addressed this challenging topic, the future of this emerging field will strongly depend on translational moves between disciplines, incl. chemistry, physics, materials sciences, engineering mechanics, structural engineering, geotechnics and biomechanics. This is in short the focus of this special issue dedicated to the Mechanics of Self-Healing Materials and Structures, which seeks contributions, both theoretical and experimental in nature, that explicitly address the coupling between self-healing and mechanics of materials. Topics of particular interest include the modeling of open self-healing thermodynamic systems, surface vs. volume growth, innovative experimental methods to assess the mechanics of self-healing, and upscaling of atomic and/or microscopic phenomena to the structural engineering scale.

Examples include:

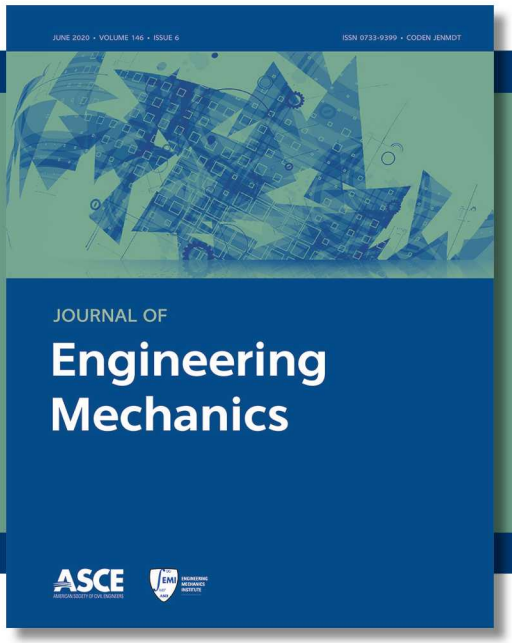
- Rebonding between polymers and minerals at molecular, cluster and continuum scales
- Mechanical healing in biological materials and living systems
- Spatio-temporal scales of mass transport vs. bio-chemical reactions
- Thermodynamics of open systems subject to healing
- Crystal (visco-)plasticity coupled with chemical reactions leading to macroscopic mechanical healing
- Methods for understanding and predicting mechanical healing -- theoretical, numerical, experimental and practical approaches
- New developments related to optimized self-healing capabilities, repair techniques, and treatments to enhance the degradation resistance
- Applications to the design of structures that contain engineered and natural materials

AMERICAN SOCIETY OF CIVIL ENGINEERS
1801 Alexander Bell Dr., Reston, VA 20191, USA | Phone: 1(800) 548.2723 (US)/1(703) 295.6300 (Int'l) | Web: ascelibrary.org | E-mail: ascelibrary@asce.org

Journal of Engineering Mechanics

Guest Editors:
Chloé Arson (Georgia Tech)
Tal Cohen (MIT)
Nima Rahbar (WPI)

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS



Call for Papers

Special Issue on Mechanics of Self-Healing Materials and Structures

Submission Deadline:

July 31, 2022

Reasons to Publish with ASCE

- **AUTHORITY**—ASCE is the world leader in civil engineering knowledge.
- **IN DEMAND**—ASCE Library contains over 145,000 articles and attracts over a million visits per month.
- **WIDE DISTRIBUTION**—More than 3,500 institutions in 125 countries have access to ASCE journals.
- **NO SUBMISSION OR PUBLICATION FEES**
- **EXPERTISE**—ASCE journals are led by experienced researchers and practitioners attracting high-quality papers.
- **COMPREHENSIVE COLLECTION**—Variety of journals allows research in niche areas to be published and accessed.
- **HIGH DISCOVERABILITY & ACCESSIBILITY**—Content is indexed in all major services including Google, Google Scholar, Baidu, Elsevier (Ei Compendex), Clarivate Analytics (Web of Science), ProQuest, Civil Engineering Database, TRID, OCLC (WorldCat), IET/INSPEC, SCOPUS and EBSCOHost.
- **OPEN ACCESS OPTION**—Whether complying with funding mandates or looking for broader dissemination, authors can make their work freely available by choosing the Open Access Option.

AMERICAN SOCIETY OF CIVIL ENGINEERS
1801 Alexander Bell Dr., Reston, VA 20191, USA | Phone: 1(800) 548.2723 (US)/1(703) 295.6300 (Int'l) | Web: ascelibrary.org | E-mail: ascelibrary@asce.org