

YONGGANG HUANG

Department of Mechanical Engineering (50%),
Department of Civil and Environmental Engineering (50%), and
Department of Materials Science and Engineering (0%)
Northwestern University
2145 Sheridan Road, Evanston, IL 60208
Phone: (847) 467-3165 Email: y-huang@northwestern.edu

Education:

Ph.D.	Engineering Science	Harvard University	1990
S.M.	Engineering Science	Harvard University	1987
B.S.	Mechanics	Peking University	1984

Professional Experience:

11/15-present Professor
Department of Materials Science and Engineering
McCormick School of Engineering
Northwestern University

9/15-present Walter P. Murphy Professor
8/07-8/15 Joseph Cummings Professor
Departments of Civil and Environmental Engineering and Mechanical Engineering
McCormick School of Engineering
Northwestern University

8/04-8/07 Shao Lee Soo Professor
8/03-8/04 Grayce Wicall Gauthier Professor
8/01-8/03 Professor
8/98-8/01 Associate Professor
Department of Mechanical and Industrial Engineering
University of Illinois at Urbana-Champaign

8/95-8/98 Associate Professor
Department of Mechanical Engineering - Engineering Mechanics
Michigan Technological University

8/91-7/95 Assistant Professor
Department of Aerospace and Mechanical Engineering
The University of Arizona

6/90-7/91 Postdoctoral Research Fellow
(for Drs. B. Budiansky and J. R. Rice)
Division of Applied Science, Harvard University

6/87-5/90 Research Assistant
(for Dr. J. W. Hutchinson)
Division of Applied Science, Harvard University

Visiting Positions:

9/18-12/21 Faculty Fellow
Hagler Institute for Advanced Study, Texas A&M University, College Station, Texas

8/05-8/06 Clark Millikan Visiting Professor
Graduate Aeronautical Laboratories, California Institute of Technology

Media Reports by Northwestern University (since 2008):

2008

- Foldable and stretchable silicon circuits conform to many shapes,** 4/2/2008,
<http://www.mccormick.northwestern.edu/news/archives/353>;
- Yonggang Huang awarded Guggenheim Fellowship,** 4/14/2008,
<http://www.mccormick.northwestern.edu/news/archives/361>;
- Five Northwestern professors receive Guggenheim,** 4/15/2008,
<http://www.northwestern.edu/newscenter/stories/2008/04/guggenheim.html>;
- New technology could lead to camera based on human eye,** 8/7/2008,
<http://www.northwestern.edu/newscenter/stories/2008/08/humaneyecamera.html>;
- Stretchable electronics,** fall 2008,
<http://bydesign.mccormick.northwestern.edu/fall2008/Stretching-electronics.html>;
- Researchers create transparent, flexible solar cells,** 10/8/2008,
<http://mccormick.northwestern.edu/news/archives/424>;
- Researchers make new electronics with a twist,** 11/20/2008,
<http://www.northwestern.edu/newscenter/stories/2008/11/twistable.html>;

2009

- Personal solar panels to power your iPod on the run,** 2/11/2009,
<http://news.medill.northwestern.edu/chicago/news.aspx?id=115453&print=1>;
- Electronic eye camera and more,** 5/16/2009,
<http://www.slivka.northwestern.edu/index.php/home/150-electronic-eye-camera-and-more.html>;
- Researchers create tiny, flexible LED screens,** 8/24/2009,
<http://www.northwestern.edu/newscenter/stories/2009/08/ledscreens.html>;

2010

- Check out these covers,** 2/19/2010,
<http://www.northwestern.edu/newscenter/stories/2010/02/covers.html>;
- Hugging the heart electronically,** 3/24/2010,
<http://www.northwestern.edu/newscenter/stories/2010/03/heart.html>;
- Yonggang Huang writes review paper for Science,** 3/29/2010, <http://mccormick-dev.tech.northwestern.edu/news/articles/667>;
- Wrapping around the heart, one electronics at a time,** 4/6/2010,
<http://news.medill.northwestern.edu/chicago/news.aspx?id=162611&print=1>;
- Geckos inspire new electronics printing method,** fall 2010;
<http://magazine.mccormick.northwestern.edu/fall2010/mccormicknews.html>;
- Learning from lizards,** 9/20/2010;
<http://www.northwestern.edu/newscenter/stories/2010/09/learning-from-lizards.html>;

2011

- Better than the human eye,** 1/18/2011,
<http://www.northwestern.edu/newscenter/stories/2011/01/eye-camera.html>;
- Cardiac catheter that can do it all,** 3/7/2011,
<http://www.northwestern.edu/newscenter/stories/2011/03/cardiac-ablation-therapy.html>;
- Center Point,** Spring 2011 (back cover),
<http://www.research.northwestern.edu/publications/centerpiece/CenterPieceSpring2011.pdf>;
- Tattoo electronics,** 8/11/2011,
<http://www.northwestern.edu/newscenter/stories/2011/08/tattoo-electronics-huang.html>;
- Centerpiece, Fall 2011,** <http://www.research.northwestern.edu/publications/centerpiece/CP-Fall2011.pdf>;
- Stretching solar to new limits,** Northwestern Magazine, winter 2011,
<http://www.northwestern.edu/magazine/winter2011/feature/something-new-under-the-sun-sidebars/stretching-solar-to-new-limits.html>

2012

- Northwestern researchers create “rubber-band electronics”,** 7/2/2012,
<http://www.mccormick.northwestern.edu/news/articles/2012/06/yonggang-huang-flexible-electronics.html>
- Disappearing act: Biocompatible electronics for health monitoring vanish when no longer needed,** 9/27/2012,
<http://www.northwestern.edu/newscenter/stories/2012/09/disappearing-act.html>
- Dissolving electronics promise innovative medical implants,** 10/3/2012,
<http://news.medill.northwestern.edu/chicago/news.aspx?id=208644>
- Simplifying heart surgery with stretchable electronic devices,** 11/15/2012,
<http://www.mccormick.northwestern.edu/news/articles/2012/11/yonggang-huang-stretchable-electronics-catheter-for-heart-surgery.html>
- Biocompatible electronics vanish when no longer needed,** fall 2012,
<http://www.mccormick.northwestern.edu/magazine/fall-2012/stories-from-intersection.html>

2013

Clever battery completes stretchable electronics package, 2/26/2013,
<http://www.northwestern.edu/newscenter/stories/2013/02/clever-battery-completes-stretchable-electronics-package.html>

Bug's eye inspires hemispherical digital camera, 5/1/2013,
<http://www.northwestern.edu/newscenter/stories/2013/04/bugs-eye-inspires-hemispherical-digital-camera.html>

Stretching out lithium-ion batteries for health monitoring devices, 5/2/2013,
<http://news.medill.northwestern.edu/chicago/news.aspx?id=220941&terms=Stretching%20out%20lithium-ion%20batteries%20for%20health%20monitoring%20devices%2c>

McCormick researchers develop separation technique for carbon nanotubes, 5/7/2013,
<http://www.mccormick.northwestern.edu/news/articles/2013/05/researchers-develop-separation-technique-for-carbon-nanotubes.html>

Specimen: Field of vision, fall 2013, <http://www.northwestern.edu/magazine/fall2013/>

Stretchab battery widely featured in news, fall 2013,
<http://www.mccormick.northwestern.edu/magazine>

2014

Wearable health monitor sticks to your skin, 4/3/2014,
<http://www.northwestern.edu/newscenter/stories/2014/03/wearable-health-monitor-sticks-to-your-skin.html>

Beating heart powers pacemaker, 4/9/2014,
<http://www.northwestern.edu/newscenter/stories/2014/04/beating-heart-powers-pacemaker.html>

'Skin-Like' Device Monitors Cardiovascular and Skin Health, 9/24/2014,
<http://www.northwestern.edu/newscenter/stories/2014/09/skin-like-device-monitors-cardiovascular-and-skin-health.html>

2015

'Pop-up' fabrication technique trumps 3-D printing on many levels, 1/8/2015,
<http://www.northwestern.edu/newscenter/stories/2015/01/pop-up-fabrication-technique-trumps-3-d-printing-on-many-levels.html>

Discover – Northwestern Research,
<http://www.discover.northwestern.edu/people/yonggang-huang>

Japanese paper art inspires new 3-D fabrication method, 9/8/2015,
<http://www.northwestern.edu/newscenter/stories/2015/09/3d-fabrication.html>

2016

Researchers develop soft, micro-fluidic "lab on the skin" for sweat analysis, 11/23/2016,
<https://news.northwestern.edu/stories/2016/11/researchers-develop-soft-microfluidic-lab-on-the-skin-for-sweat-analysis/>

2017

Yonggang Huang elected to National Academy of Engineering, 02/08/2017,
<https://news.northwestern.edu/stories/2017/february/yonggang-huang-elected-to-national-academy-of-engineering/>

Three elected foreign members of Chinese Academy of Sciences, 11/29/2017,
<https://news.northwestern.edu/stories/2017/november/three-elected-foreign-members-of-chinese-academy-of-sciences/>

2018

Skin sensor could improve life for a million hydrocephalus patients, 10/31/2018,
<https://news.northwestern.edu/stories/2018/october/game-changing-skin-sensor-could-improve-life-for-a-million-hydrocephalus-patients/>

Academy Membership:

Member, European Academy of Sciences and Arts, 2010-.

Member, National Academy of Engineering, 2017-.

Foreign Member, Academia Europaea, 2017-.

Foreign Member, Chinese Academy of Sciences, 2017-.

Editors:

Editor-in-Chief, Theoretical and Applied Mechanics Letters, 2011-2015.

Technical Editor, Journal of Applied Mechanics (ASME Transactions), 2012-2022.

Advisory Board, International Journal of Computational Materials Science and Engineering, 2011-.

Advisory Board, Extreme Mechanics Letters, 2014-.

Associate Editor, Journal of Applied Mechanics (ASME Transactions), 2005-2011.

Associate Editor, NPJ Flexible Electronics (by Nature Publishing Group), 2016-.

Editorial Board, International Journal of Plasticity, 2002-2013.

Editorial Board, International Journal of Fracture, 2004-.

Editorial Board, Journal of Computational and Theoretical Nanoscience, 2006-.

Editorial Board, Interaction and Multiscale Mechanics: an International Journal, 2007-.

Editorial Board, Journal of Nanomechanics and Micromechanics (ASCE Transactions), 2011-2014.

Editorial Board, International Journal of Solids and Structures, 2011-.

Editorial Board, Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012-2018.

Editorial Board, Current Opinion in Solid State & Materials Science, 2012-.

Editorial Board, Scientific Reports, 2015-.

Editorial Board, Research, 2018-.

Guest Editor, Special Issue on Mechanics and Mechanical Properties of Carbon Nanotubes, Journal of Engineering Materials and Technology (ASME Transactions), v 124, 2004.

Society Leadership:

Past President (2015), President (2014), Vice President (2013), Member, Board of Directors, Society of Engineering Sciences, 2012-2015

Executive Committee (Chair, 2019-2020), Applied Mechanics Division, American Society of Mechanical Engineers, 2015-2020

US National Committee of Theoretical and Applied Mechanics, 2018-2022

Awards and Honors (Research since 2003):

Gustus L. Larson Memorial Award, American Society of Mechanical Engineers and Pi Tau Sigma (National Mechanical Engineering Honor Society), 2003 (**one award each year for outstanding achievement in mechanical engineering between ten and twenty years after graduation**).

George W. Melville Medal, American Society of Mechanical Engineers, 2004 (**the highest ASME honor for the best original paper which has been published in the ASME Transactions during the two calendar years immediately preceding the year of award**).

Lecturer, Southwest Mechanics Lecture Series, 2005.

Young Investigator Medal, Society of Engineering Science, 2006 (for high impact of research work in engineering science within 15 years of terminal degree).

International Journal of Plasticity Medal, 2007 (for making outstanding contribution over any five-year period to the field of plasticity).

Guggenheim Fellowship, John Simon Guggenheim Memorial Foundation, 2008 (for demonstrated exceptional capacity for productive scholarship, only 1 to 2 in engineering awarded each year).

ISI Highly Cited Researcher in Engineering, Thomson Reuters Web of Science, 2009.

Work on stretchable electronics selected as the **cover of NSF budget request to Congress for fiscal year 2011**, 2010.

Charles Russ Richards Memorial Award, American Society of Mechanical Engineers and Pi Tau Sigma (National Mechanical Engineering Honor Society), 2010 (one award each year for outstanding achievement in mechanical engineering beyond twenty years after graduation).

Member, **European Academy of Sciences and Arts**, 2010-.

Paper titled “Mechanics of hemispherical electronics” selected by the Editors at *Applied Physics Letters* as one of the most notable papers in recent years, for highlight in the 50th anniversary edition of the journal, 2012.

Work on epidermal electronics featured by NBC Learn, the education arm of NBC, 2013, <http://www.nbclearn.com/portal/site/learn/cuecard/62961>.

Daniel C. Drucker Medal, American Society of Mechanical Engineers, 2013 (in recognition of distinguished contributions to the field of applied mechanics and mechanical engineering through research, teaching and service to the community over a substantial period of time).

ISI Highly Cited Researcher in Materials Science, Thomson Reuters Web of Science, 2014.

ISI Highly Cited Researcher in Materials Science, Thomson Reuters Web of Science, 2015.

ISI Highly Cited Researcher in Materials Science, Thomson Reuters Web of Science, 2016.

Nadai Medal, American Society of Mechanical Engineers, 2016 (in recognition of significant contributions and outstanding achievements which broaden the field of materials engineering through education, research, development, and service to the field of profession).

Annual Best Lecture, Global Vision Lectures, Nanjing Tech University, 2016.

Member, **National Academy of Engineering**, 2017.

William Prager Medal, Society of Engineering Sciences, 2017 (**for outstanding research contributions in either theoretical or experimental solid mechanics or both**).

Foreign Member, **Academia Europaea**, 2017.

ISI Highly Cited Researcher in Materials Science, Thomson Reuters Web of Science, 2017.

Foreign Member, **Chinese Academy of Sciences**, 2017.

Zdenek P. Bazant Medal for Failure and Damage Prevention, American Society of Civil Engineers, 2018.

Outstanding paper award, National Science Review, 2017 (for the paper “Mechanics and thermal management of stretchable inorganic electronics” by Jizhou Song, Xue Feng and Yonggang Huang, National Science Review, v 3, pp 128-143, 2016).

ISI Highly Cited Researcher in Materials Science, Thomson Reuters Web of Science, 2018.

ISI Highly Cited Researcher in Physics, Thomson Reuters Web of Science, 2018.

Awards and Honors (Teaching):

Most Supportive Junior Faculty Member, voted by exit senior, Department of Aerospace and Mechanical Engineering, The University of Arizona, 1993.

On the “**Incomplete List of Teachers Ranked as Excellent by Their Students**” (top 10% teachers), University of Illinois at Urbana-Champaign, Spring 2003.

On the “**Incomplete List of Teachers Ranked as Excellent by Their Students**” (top 10% teachers), University of Illinois at Urbana-Champaign, Spring 2004.

On the “**Incomplete List of Teachers Ranked as Excellent by Their Students**” (top 10% teachers), University of Illinois at Urbana-Champaign, Fall 2004.

On the “**Incomplete List of Teachers Ranked as Excellent by Their Students**” (top 10% teachers), University of Illinois at Urbana-Champaign, Spring 2005.

On the “**Incomplete List of Teachers Ranked as Excellent by Their Students**” (top 10% teachers), University of Illinois at Urbana-Champaign, Fall, 2006.

On the “**Incomplete List of Teachers Ranked as Excellent by Their Students**” (top 10% teachers), University of Illinois at Urbana-Champaign, Spring 2007.

Engineering Council Award for Excellence in Advising (top 10% engineering advisers), College of Engineering, University of Illinois at Urbana-Champaign, April, 2007.

Cole-Higgins Award for Excellence in Teaching, 2015-2016 (for an engaging teaching style that combines the big picture and technical details, while encouraging students to develop their own problem solving style (one award per year, McCormick School of Engineering, Northwestern University).

Associated Student Government Faculty and Administrator Honor Roll, Northwestern University, 2018-2019.

Awards and Honors (Service):

Faculty adviser of the Illinois chapter of Pi Tau Sigma Society (Mechanical Engineering Honors Society), which received the national “**Outstanding Service Award**”, 2001 (7 awards out of 160 chapters in the States).

“Outstanding Service Award” as the President of the Society of Engineering Sciences, 2016.

Books

- 1 Hwang K-C and Huang Y, *The Constitutive Relation of Solids*, Tsinghua University Press, Beijing, 1999.
- 2 Hwang K-C and Huang Y, *Advanced Mechanics of Solids*, Tsinghua University Press, Beijing, 2014.

Book Chapters

- 1 Huang Y and Hutchinson JW, "A model study of the role of nonuniform defect distribution on plastic shear localization," in *Modelling of Material Behaviour and Design* (eds. Embury JD and Thompson AW), TMS, Warrendale, PA, pp 129-147, 1989.
- 2 Chandra A, Wang KP, Huang Y, and Subhash G, “Defect evolution during machining of brittle materials,” in *Advanced Methods in Materials Processing Defects* (eds. Predeleanu M and Gilormini P), Elsevier Science, Amsterdam, pp 89-98, 1997.

- 3 Huang Y, "The mode III fracture in general strain-gradient plasticity," in *Advances in Solid Mechanics* (eds. Yu SW, Yang W, and Zheng QS), Tsinghua University Press, Beijing, pp 89-99, 1997.
- 4 Huang Y, Zhang L, Guo TF, and Hwang K-C, "Fracture of materials with strain gradient effects," in *Advances in Fracture Research* (eds. Karihaloo BL, Mai Y-W, Ripley MI, and Ritchie RO), Pergamon Press, New York, pp 2275-2286, 1997.
- 5 Huang Y, Zhang L, Guo TF, and Hwang K-C, "Near-tip fields for cracks in materials with strain gradient effects", in *IUTAM Symposium on Nonlinear Analysis of Fracture* (ed. Willis JR), Kluwer Academic Publisher, pp 231-243, 1997 (Symposium held in Cambridge University, September 3-7, 1995).
- 6 Huang Y, Hwang K-C, and Guo TF, "Fracture of materials at the microscale," in *Mechanical Problems of Advanced Engineering Materials* (eds. Senoo M, XU BY, Tokuda M, and Bundara B), Mie University Press, Tsu, Japan, pp 3-12, 1998.
- 7 Huang Y, Gao H, and Hwang K-C, "Strain-gradient plasticity at the micron scale," in *Progress in Mechanical Behavior of Materials* (eds. Ellyin F and Provan JW), Fleming Printing Ltd, pp 1051-1056, 1999.
- 8 Chen B, Huang Y, Wu PD, MacEwen SR, Xia ZC, and Tang SC, and "An anisotropic Gurson model for aluminum sheets," in *Mathematical Modeling in Metal Processing and Manufacturing* (eds. Martin P, MacEwen SR, Verreman Y, Lui W, and Goldak J), Met Soc, Ottawa, Ontario, pp 17-30, 2000.
- 9 Chen B, Wu PD, Xia ZC, MacEwen SR, Tang SC, and Huang Y, "A dilatational plasticity theory for aluminum sheets," in *Multiscale Deformation and Fracture in Materials and Structures, the James R. Rice 60th Anniversary Volume* (eds. Chuang T-J and Rudnicki JW), Kluwer Academic Publishers, Dordrecht, The Netherlands, pp 17-30, 2000.
- 10 Hwang K-C, Jiang HQ, and Huang Y, "Fracture in mechanism-based strain gradient plasticity with consideration of material compressibility," in *Mechanical Properties of Advanced Engineering Materials* (eds. Tokuda M and Xu BY), Mie University Press, Tsu, Japan, pp. 27-34, 2001.
- 11 Vainchtein A, Klein PA, Gao H, and Huang Y, "A strain-gradient Virtual-Internal-Bond model," in *Modeling and Simulation-based Life Cycle Engineering* (eds. Chong KP, Saigal S, Thynell S, and Morgan HS), Spon Press, London, pp 31-46, 2002.
- 12 Huang Y and Wang ZL, "Mechanics of carbon nanotubes," in *Comprehensive Structural Integrity Handbook* (eds. Karihaloo B, Ritchie R, and Milne I), Elsevier Science, v 8, *Interfacial and Nanoscale Fracture* (volume eds., Gerberich W and Yang W), Chap 8.16, pp 551-579, 2003.

- 13 Hwang K-C, Wei YG, and Huang Y, "Mechanism-based strain gradient plasticity theory and size effects in solids," in *Macro-micro-mechanics and strengthening and toughening design of materials* (eds. Hwang K-C and Wang TC), Tsinghua University Press and Springer, Beijing, pp 26-72, 2003.
- 14 Hwang K-C, Wen J, and Huang Y, "Size effect in Gurson model for porous plastic solid," in *Microstructures and Mechanical Properties of New Engineering Materials* (eds. Xu BY and Tokuda M), Tsinghua University Press and Springer-Verlag, pp 1-6, 2003.
- 15 Rosakis AJ and Huang Y, "Intersonic debonding," in *Comprehensive Structural Integrity Handbook* (eds. Karihaloo B, Ritchie R, and Milne I), Elsevier Science, v 8, *Interfacial and Nanoscale Fracture* (volume eds., Gerberich W and Yang W), Chap 8.4, pp 137-179, 2003.
- 16 Hwang K-C, Huang Y, Jiang HQ, and Liu B, "Nano-mechanics: A continuum theory based on interatomic potential," in *Fracture and damage of advanced materials* (eds. Guo YM), Machine Press, Hangzhou, China, pp 16-19, 2004.
- 17 Feng XQ, Shi D, Huang Y, and Hwang K-C, "Multiscale mechanics of carbon nanotubes and their composites," in *Multiscale mechanics in molecular and continuum mechanics: Interaction of time and size from macro to nano* (ed. Sih GC), Springer, Netherlands, pp 103-139, 2006.
- 18 Jiang HQ, Huang Y, Zhang P, and Hwang K-C, "Fracture nucleation in single-wall carbon nanotubes: the effect of nanotube chirality," in *Nanomechanics of materials and structures* (eds. Chuang TJ, Anderson PM, Wu MK, and Hsieh S), Springer, Dordrecht, Netherlands, pp 79-88, 2006.
- 19 Liu B, Jiang HQ, Huang Y, Qu SX, Yu M-F, and Hwang K-C, "Finite element method: from discrete atoms to continuum solids," in *Handbook of Theoretical and Computational Nanotechnology* (eds. Rieth M and Schommers W), American Scientific Publishers, Stevenson Ranch, California, v 2, Chap 5, pp 201-219, 2006.
- 20 Qu SX, Huang Y, Liu C, and Hwang K-C, "Interface fracture: a study based on the conventional theory of mechanism-based strain gradient plasticity," in *Size Effects on Material and Structural Behavior at Micron- and Nano-Scales* (eds. Sun QP and Tong P), Springer, pp 67-76, 2006.
- 21 Jiang HQ, Huang Y, and Hwang K-C, "A comparison of different interatomic potentials: Radius effect of single wall carbon nanotubes," in *Mechanical Behavior and Micro-mechanics of Nanostructured Materials* (eds. Bai YL, Zheng QS, and Wei YG), Springer-Verlag, New York, pp 121-135, 2007.

- 22 Feng X, Huang Y, and Hwang K-C, "Size effects in nanoindentation," in *Micro and Nano Mechanical Testing of Materials and Devices* (eds. Yang F and Li JCM), Springer, New York, Chap 2, pp 49-70, 2008.
- 23 Jiang HQ, Song JZ, Huang Y, and Rogers JA, "Mechanics of stretchable silicon films on elastomeric substrates," in *Unconventional Nanopatterning Techniques and Applications* (eds. Rogers JA and Lee HH), Wiley, Hoboken, New Jersey, Chap 18, pp 483-514, 2008.
- 24 Xiao JL, Khang D-Y, Huang Y, and Rogers JA, "Buckling mechanics of carbon nanotubes on elastomeric substrates," in *Recent Developments in Modeling and Applications of Carbon* (ed. Wang Q, Yakobson BI, and Liew KM), Research Signpost/Transworld Research Network, Kerala, India, pp 49-70, 2009.
- 25 Xiao JL, Jiang HQ, Huang Y, and Rogers JA, "Mechanics of stiff thin films of controlled wavy geometry on compliant substrates for stretchable electronics," in *Semiconductor Nanomaterials for Flexible Technologies: from Photovoltaics and Electronics to Sensors and Energy Storage/Harvesting Devices* (eds Sun YG and Rogers JA), Chap 10, pp 275-292, 2010.
- 26 Xiao JL, Zhou WX, Huang Y, Zuo JM, and Hwang K-C, "Potentials for van der Waals interactions in nanoscale computation," in *Trends in Computational Nanomechanics – Transcending Length and Time Scales* (eds. Dumitrica D), Springer, New York, Chap 12, 2010.
- 27 Song JZ, Wu J, and Huang Y, "Controlled buckling of thin film on compliant substrate for stretchable electronics," in *Thin Film Growth Physics, Materials Science and Applications* (ed. Cao Z), Woodhead Publishing, Chap 14, pp 340-363, 2011.
- 28 Wu J, Song JZ, Xiao JL, Huang Y, Hwang K-C, and Rogers JA, "Mechanics of encapsulated stretchable electronics," in *Nonlinear mechanical properties of materials* (eds. Chen JK, Bai SL, and Hu GK), National Defense Industry Press, Beijing, 2012.
- 29 Su YW, Wu J, Fan ZC, Hwang K-C, Huang Y, and Rogers JA, "Mechanics of twistable electronics," in *Stretchable Electronics* (ed. Someya T), Wiley-Vch, Weinheim, Geroamny, pp 31-39, 2013.
- 30 Wang SD, Xiao JL, Song JZ, Huang Y, and Rogers JA, "Mechanics of curvilinear electronics," in *Nano and Cellular Mechanics* (eds. Espinosa HD and Bao G), Wiley, New York, pp 339-357, 2013.
- 31 Huang Y, Zhang YH, and Hwang K-Ch, "Mechanics design and analyses of stretchable electronics," in *Shell Structures, Theory and Applications* (eds. Pietraszkiewicz W and Gorski J), Taylor and Francis Group, London, pp 27-32, 2014.

- 32 Cheng HY, Huang Y and Rogers JA, "Models of reactive diffusion for resorbable electronics," in *Silicon Nanomembranes: Fundamental Science and Applications* (eds. Ahn J-H and Rogers JA), Wiley, New York, pp 37-55, 2016.

Publications (Refereed Journal Articles):

- 1 Yuan MW, Huang Y, and Lan D, "Elastic curved beams in space structures," *Engineering Mechanics*, v 2, pp 64-75, 1985.
- 2 Zhu GQ, Huang Y, Yu TX, and Wang R, "Estimation of the plastic structural response under impact," *International Journal of Impact Engineering*, v 4, pp 271-282, 1986.
- 3 Huang Y and Wu JK, "The mechanical analysis of a senseless feeler," *Mechanics and Practice*, v 9, pp 14-18, 1987.
- 4 Li QM and Huang Y, "Dynamic plastic response of circular plate under step loading," *Explosion and Shock Waves*, v 7, pp 134-139, 1987.
- 5 Wu JK and Huang Y, "On the stability of elastic curved bars," *Acta Mechanica Sinica*, v 3, pp 326-334, 1987.
- 6 Huang Y, "The convergent solution of clamped rectangular plate," *Acta Mechanica Solida Sinica*, v 9, pp 165-169, 1988.
- 7 Huang Y and Hu HC, "A model for constraint-dependent critical load," *Acta Scientiarum Naturalium, Universitatis Pekinensis*, v 24, pp 95-100, 1988.
- 8 Li QM and Huang Y, "Dynamic plastic response of thin circular plates with transverse shear and rotatory inertia subjected to rectangular pulse loading," *International Journal of Impact Engineering*, v 8, pp 219-228, 1989.
- 9 Li QM and Huang Y, "Dynamic plastic response of circular plates with transverse shear," *Journal of Applied Mechanics (ASME Transactions)*, v 57, pp 1077-1078, 1990.
- 10 Shum DKM and Huang Y, "Fundamental solutions for microcracking induced by residual stress." *Engineering Fracture Mechanics*, v 37, pp 107-117, 1990.
- 11 Huang Y, "Accurate dilatation rate for spherical voids in triaxial stress fields," *Journal of Applied Mechanics (ASME Transactions)*, v 58, pp 1084-1086, 1991.
- 12 Huang Y, Hutchinson JW, and Tvergaard V, "Cavitation instabilities in elastic-plastic solids," *Journal of the Mechanics and Physics of Solids*, v 39, pp 223-241, 1991.

- 13 Tvergaard V, Huang Y, and Hutchinson JW, "Cavitation instabilities in a power hardening elastic-plastic solid," *European Journal of Mechanics, A/Solids*, v 11, pp 215-231, 1992.
- 14 Wright SC, Huang Y, and Fleck NA, "Deep penetration of polycarbonate by a cylindrical indenter," *Mechanics of Materials*, v 13, pp 277-284, 1992.
- 15 Hu KX, Chandra A, and Huang Y, "Fundamental solutions for dilute distributions of inclusions embedded in microcracked solids," *Mechanics of Materials*, v 16, pp 281-294, 1993.
- 16 Hu KX, Chandra A, and Huang Y, "Multiple void-crack interaction," *International Journal of Solids and Structures*, v 30, pp 1473-1489, 1993.
- 17 Hu KX and Huang Y, "Estimation of the elastic properties of fractured rock masses," *International Journal of Rock Mechanics and Mining Science & Geomechanics Abstracts*, v 30, pp 381-394, 1993.
- 18 Hu KX and Huang Y, "A microcracked solid reinforced by rigid-line fibers," *Composites Science and Technology*, v 49, pp 145-151, 1993.
- 19 Huang Y, "The role of nonuniform particle distribution on plastic flow localization," *Mechanics of Materials*, v 16, pp 265-280, 1993.
- 20 Huang Y, Hu KX, and Chandra A, "The effective elastic moduli of microcracked composite materials," *International Journal of Solids and Structures*, v 30, pp 1907- 1918, 1993.
- 21 Hu KX, Chandra A, and Huang Y, "On crack, rigid-line fiber, and interface interactions," *Mechanics of Materials*, v 19, pp 15-28, 1994.
- 22 Hu KX, Chandra A, and Huang Y, "On interacting bridged-cracks systems," *International Journal of Solids and Structures*, v 31, pp 599-611, 1994.
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