Baoxing Xu

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EMPLOYMENT

Associate Professor (with tenure) 07/2020-Present
Assistant Professor 08/2014-07/2020

Department of Mechanical and Aerospace Engineering
University of Virginia

EDUCATION

Beckman Postdoctoral Fellow, Beckman Institute 08/2012-08/2014
University of Illinois at Urbana-Champaign
Advisor: Professor John A Rogers (now at Northwestern University)

PhD in Mechanics and Materials, Columbia University 10/2012
Dissertation: "Science of Nanofluidics and Energy Conversion"
Advisor: Professor Xi Chen

MS in Solid Mechanics, Northwestern Polytechnical University 04/2007
Thesis: "Indentation Fatigue Behavior of Polycrystalline Cooper"
Advisor: Professor Zhufeng Yue

BS in Engineering Mechanics, Northwestern Polytechnical University 07/2004

RESEARCH INTERESTS

Our research interests are focused on multiscale/multiphysics mechanics of materials and its-driven extreme design and nanomanufacturing of functional structures and devices for applications in wearable electronics and healthcare, in particular, soft-hard material integration, porous structures, solid-liquid functionalized materials, and bioinspired flexible devices and structures.

We also are working on nanomechanics at extreme conditions, including mechanics of liquids in nanoconfinements, nanofluidics in response to environments, and thermal transport of mechanically deformed nanomaterials.

SELECTED AWARDS & HONORS

Young Investigator Medal, Society of Engineering Science (SES) 2023
(awarded to a promising early-career researcher whose work has already had an impact in his/her field within the engineering sciences)

Participant of China-America Frontiers of Engineering Symposium (CAFOE), US National Academy of Engineering (NAE) 2022

Sia Nemat-Nasser Early Career Award, ASME 2020
(for recognizing early career research excellence in the areas of experimental, computational, and theoretical mechanics and materials by young investigators who are within 10 years after their Ph.D. degree)

Young Investigator Program (YIP) Award, Office of Naval Research 2020
(only 25 scientists selected nationwide)

Beckman Postdoctoral Fellowship, University of Illinois at Urbana-Champaign 2012
(The Arnold and Mabel Beckman Foundation established this program in 1991 to recruit outstanding recent Ph.D. recipients or students in their final year of doctoral study to work at the Beckman Institute. Four to six fellows are selected annually for terms of up to three years.)

NSF Travel Grant Award for ASME IMECE Micro/Nano Poster Forum 2011

NSF Travel Grant Award for CMMI Research and Innovation Conference 2010

Boeing Graduate Fellowship at Columbia University, Boeing Company 2008

Best Thesis for Master Degree, Northwestern Polytechnical University 2008

Best Student Graduate Award, Shaanxi Province 2007

Top 10 Researchers in 2006, Northwestern Polytechnical University 2007
(all other 9 awardees were full professor)

Outstanding Scholarship, China Baosteel Education Foundation 2006
(only 30 students awarded including both graduate and undergraduate students in China in 2006, Rank: 8/30)

National Scholarship (1st Prize), Ministry of Education of China 2002

SELECTED PUBLICATIONS (* group student, ^ corresponding author)

90+ peer reviewed papers in journals including PNAS, JMPS (flagship journal in my field), IJSS, EML, JAM, MRC (IJSS, EML, JAM and MRC are important journals in my field), Matter, Nature Communications, Advanced Materials, ACS Nano, Advanced Functional Materials, Advanced Healthcare Materials, Nano letters, Nano Energy, Energy & Environmental Science, Applied Mechanics Review, PRL, APL, Proceedings of the Royal Society, Acta Materialia, and Script Materialia.

2 invited *perspective* papers (1 EML, 1 MRC)

Full list of papers: https://xugroup.weebly.com/pubications.html

A. Perspectives (invited)

[1]. **Baoxing Xu**^. A Perspective on Intelligent Design of Engineered Materials and Structures by Interface Mechanics. *Mechanics Research Communications*. 119(2022) 103668.

[2]. **Baoxing Xu**^, John A Rogers. Mechanics-Driven Approaches to Manufacturing—A Perspective. *Extreme Mechanics Letters*. 7(2016)44-48.

B. Achieved Journals

[1]. Haozhe Zhang*, Weizhu Yang, Qingchang Liu*, Yuan Gao*, Zhufeng Yue, **Baoxing Xu**^. Mechanical Janus Structures by Soft-Hard Material Integration. *Advanced Materials*

[2]. Yue Zhang*, **Baoxing Xu**^. Electro-chemo-mechanics theory in transfer printing of thin films in electrolyte solutions. *International Journal of Solids and Structures (IJSS).* 254-255(2022)111848

[3]. Yuan Gao*, Mentian Yin*, Haozhe Zhang*, **Baoxing Xu**^. Electrically Suppressed Outflow of Confined Liquid in Hydrophobic Nanopores. *ACS Nano* 16(2022)9420-9427

[4]. Haozhe Zhang*, **Baoxing Xu**^. Soft-hard material integration enabled programmable robotic locomotion. *Applied Physics Letters* 121(2022)214104

[5]. Tao Wang#, Qingchang Liu*#, Haitao Liu, **Baoxing Xu**^, Hangxun Xu. Printable and Highly Stretchable Viscoelastic Conductors with Kinematically Reconstructed Conductive Pathways. *Advanced Materials*. (# Equal contribution) 34(2022)2202418

[6]. Yuan Gao*, Mingzhe Li, Yue Zhang*, Haozhe Zhang*, Weiyi Lu, **Baoxing Xu**^. Anomalous

solid-like necking of confined water outflow in hydrophobic nanopores. *Matter*. 5(2022)266-280

[7]. Aisha Okmi#, Xuemei Xiao#*, Yue Zhang*, Rui He, Olugbenga Olunloyo, Sumner B. Harris, Tara Jabegu, Ningxin Li, Diren Maraba, Yasmeen Sherif, Ondrej Dyck, Ivan Vlassiouk, Kai Xiao, Pei Dong^, **Baoxing Xu**^, Sidong Lei. Discovery of Graphene-Water Membrane Structure: Toward High-Quality Graphene Process. *Advanced Science*. (# Equal contribution)

[8]. Mingyu Sang#, Kyowon Kang#, Yue Zhang#*, Haozhe Zhang*, Kiho Kim, Myeongki Cho, Jongwoon Shin, Jung-Hoon Hong, Taemin Kim, Shin Kyu Lee, Woon-Hong Yeo, Jung Woo Lee, Taeyoon Lee, **Baoxing Xu**^ and Ki Jun Yu. Ultra-high Sensitive Au-doped Silicon Nanomembrane Based Wearable Sensor Arrays for Continuous Skin Temperature Monitoring with High Precision. *Advanced Materials*. 34(2022) 2105865 (# Equal contribution)

[9]. Mengtian Yin*, Zachary Alexander Kim, **Baoxing Xu**^. Micro/Nanofluidic-Enabled Biomedical Devices: Integration of Structural Design and Manufacturing. *Advanced NanoBiomed Research*. 2(2022) 2100117.

[10]. Qingchang Liu*, **Baoxing Xu**^. Anomalous Thermal Transport of Mechanically Bent Graphene: Implications for Thermal Management in Flexible Electronics. *ACS Applied Nano Materials* 5(2022) 13180-13186.

[11]. Mengtian Yin*, Wanqing Xie, Li Xiao, Sun-Sang J.Sung, Mingyang Ma, Li Jin, Xudong Li, **Baoxing Xu**^. Cyclic swelling enabled, electrically conductive 3D porous structures for microfluidic urinalysis devices. *Extreme Mechanics Letters*. 52(2022)101631

[12]. Junkyu Park, Yue Zhang*, **Baoxing Xu**, Seok Kim. Pattern transfer of large-scale thin membranes with controllable self-delamination interface for integrated functional systems. *Nature Communications*. 12 (2021)6882

[13]. Qingchang Liu*, Yuan Gao*, **Baoxing Xu**^. Transferable, Deep Learning-driven Fast Prediction and Design of Thermal Transport in Mechanically Stretched Graphene Flakes. *ACS Nano*. 15(2021)16597-16606

[14]. Kyunghun Kim#, Ho Joong Kim#, Haozhe Zhang*#, Woohyun Park, Dawn Meyer, Min Ku Kim, Bongjoong Kim, Heun Park, **Baoxing Xu**^, Pete Kollbaum^, Bryan W Boudouris^, Chi Hwan Lee^. All-printed stretchable corneal sensor on soft contact lenses for noninvasive and painless ocular electrodiagnosis. *Nature Communications* 12 (2021) 1544 (#Equal contribution)

[15]. Shifeng Nian, Jinchang Zhu, Haozhe Zhang*, Zihao Gong, Guillaume Freychet, Mikhail Zhernenkov, **Baoxing Xu**^, Li-Heng Cai. Three-Dimensional Printable, Extremely Soft, Stretchable, and Reversible Elastomers from Molecular Architecture-Directed Assembly.

Chemistry of Materials. 33(2021)2436-2445

[16]. Stephanie M Guthrie#, Yuan Gao#*, Kevin H Stone, **Baoxing Xu**^, Gaurav Giri^. Probing Molecular Assembly of Small Organic Molecules during Meniscus-Guided Coating Using Experimental and Molecular Dynamics Approaches. *The Journal of Physical Chemistry C*. 125(2021)6269-6277(# Equal contribution)

[17]. Elham Easy, Yuan Gao*, Yingtao Wang, Dingkai Yan, Seyed M Goushehgir, Eui-Hyeok Yang, **Baoxing Xu**^, Xian Zhang^. Experimental and Computational Investigation of Layer-Dependent Thermal Conductivities and Interfacial Thermal Conductance of One- to Three-Layer WSe2. *ACS Applied Materials & Interfaces*. 13(2021) 13063-13071

[18]. Yuan Gao*, Mingzhe Li, Yue Zhang*, Weiyi Lu, **Baoxing Xu**^. Spontaneous Outflow Efficiency of Confined Liquid in Hydrophobic Nanopores. *Proceedings of the National Academy of Sciences (PNAS)*. 117(2020) 25246-25253.

[19]. Yue Zhang*, Mengtian Yin*, Yongmin Baek, Kyusang Lee, Giovanni Zangari, Liheng Cai, **Baoxing Xu**^. Capillary Transfer of Soft Films. *Proceedings of the National Academy of Sciences (PNAS)*. 117(2020) 5210-5216

[20]. Haozhe Zhang*, Weizhu Yang, **Baoxing Xu**^. Rotation Mechanics of Optical Scatters in Stretchable Metasurfaces. *International Journal of Solids and Structures.* 191-192(2020)566-576

[21]. Qingchang Liu*, **Baoxing Xu**^. Solution Evaporation-Driven Crumpling and Assembling of Large-Accessible Space, High-Mechanical Strength Graphene/Carbon Nanotubes Composite Nanoparticles. *ACS Applied Materials & Interfaces.* 12(2020) 43058-43064

[22]. Hyungjun Kim, Heung Soo Lee, Yale Jeon, Woohyun Park, Yue Zhang*, Bongjoong Kim, Hanmin Jang, **Baoxing Xu**, Yoon Yeo, Dong Rip Kim, Chi Hwan Lee. Bioresorbable, Miniaturized Porous Silicon Needles on Flexible Water-Soluble Backing for Unobtrusive, Sustained Delivery of Chemotherapy. *ACS Nano*. 14 (2020) 7227-7236.

[23]. Qingchang Liu*, Jiaxing Huang and **Baoxing Xu**^. Evaporation-driven Crumpling and Assembling of Two-Dimensional (2D) Materials: A Rotational Spring – Mechanical Slider Model. *Journal of the Mechanics and Physics of Solids*. 133(2019)103722 (34 pages)

[24]. Mengtian Yin*, Li Xiao, Sung-Yun Kwon, Yi Zhang, Poonam R Sharma, Li Jin, Xudong Li and **Baoxing Xu**^. 3D Printed Microheater Sensor-Integrated, Drug-Encapsulated Microneedle Patch System for Pain Management. *Advanced Healthcare Materials* (2019) 1901170.

[25]. Weizhu Yang*, Zongzhan Gao, Zhufeng Yue, Xiaodong Li, **Baoxing Xu**^. Hard-Particle

Rotation Enables Soft-Hard Integrated Auxetic Mechanical Metamaterials. *Proceedings of the Royal Society A*. 475(2019)0234 (20 pages)

[26]. Bongjoong Kim†, Jiyeon Jeon†, Yue Zhang†*, Dae Seung Wie, Jehwan Hwang, Sang Jun Lee, Dennis E. Walker Jr., Don C. Abeysinghe, Augustine Urbas, **Baoxing Xu**^, Zahyun Ku, Chi Hwan Lee. Integration of three dimensional (3D) plasmonic nanoarrays with arbitrary substrate materials and structures. (†Equal contribution). *Nano Letters*. 19(2019)5796-5805

[27]. Yue Zhang*, Bongjoong Kim, Yuan Gao*, Dae Seung Wie, Chi Hwan Lee, **Baoxing Xu**^. Mechanics of Transfer Printing of Thin Films in a Liquid Environment. *International Journal of Solids and Structures (IJSS)*. 180-181(2019)30-44

[28]. Yuan Gao*, Yue Zhang*, **Baoxing Xu**^. Confined Water-Assistant Thermal Response of Graphene-Oxide Heterostructure and Its Enabled Mechanical Sensors for Load Sensing and Mode Differentiation. *ACS Applied Materials & Interfaces.* 11(2019)19596-19604.

[29]. Xu Wang, Qingchang Liu*, Siyao Wu, **Baoxing Xu**, and Hangxun Xu. Multilayer Polypyrrole Nanosheets with Self-Organized Surface Structures for Flexible and Efficient Solar-Thermal Energy Conversion. *Advanced Materials.* 31(2019)1807716.

[30]. Liu Wang[#], Yuan Gao[#]*, Fanqi Dai, Deying Kong, Huachun Wang, Pengcheng Sun, Zhao Shi, Xing Sheng, **Baoxing Xu**^ and Lan Yin. Geometrical and Chemical Dependent Hydrolysis Mechanisms of Silicon Nanomembranes for Biodegradable Electronics. (#Equal contribution). *ACS Applied Materials & Interfaces*. 11(2019)18013-18023

[31]. Weizhu Yang*, Qingchang Liu*, Zongzhan Gao, Zhufeng Yue, **Baoxing Xu**^. Theoretical Search for Heterogeneously Architected 2D Structures. *Proceedings of the National Academy of Sciences (PNAS)*. 115(2018) 7245-7254.

[32]. Yuan Gao*, **Baoxing Xu**^. van der Waals Graphene Kirigami Heterostructure for Strain-Controlled Thermal Transparency. *ACS Nano*. 12(2018)11254-11262.

[33]. Dae Seung Wie[#], Yue Zhang[#]*, Min Ku Kim, Bongjoong Kim, Sangwook Park, Young-Joon Kim, Pedro P. Irazoqui, Xiaolin Zheng, **Baoxing Xu**^, Chi Hwan Lee. Wafer-recyclable, environment-friendly transfer printing for large-scale thin film nanoelectronics. *Proceedings of the National Academy of Sciences (PNAS)*. 115(2018) 7236-7244. (#Equal contribution)

[34]. Yue Zhang*, Mingzhe Li, Yuan Gao, **Baoxing Xu**^, Weiyi Lu. Compressing Liquid Nanofoam System: Liquid Infiltration or Nanopore Deformation? *Nanoscale*. 10(2018)18444-18450.

[35]. Weizhu Yang*, Jia Yang, Yize Dong*, Shimin Mao, Zongzhan Gao, Zhufeng Yue, Shen J. Dillon, Hangxun Xu, **Baoxing Xu**^. Probing Buckling and Post-buckling Deformation of

Hollow Amorphous Carbon Nanospheres: In-situ Experiment and Theoretical Analysis. *Carbon.* 137(2018)411-418.

[36]. Qingchang Liu*, **Baoxing Xu**^. Two- and three-dimensional self-folding of free-standing graphene by liquid evaporation. *Soft Matter.* 14(2018) 5968-5976

[37]. Yuan Gao*, **Baoxing Xu**^. On the Generalized Thermal Conductance Characterizations of Mixed One-Dimensional–Two-Dimensional van der Waals Heterostructures and Their Implication for Pressure Sensors. *ACS Applied Materials & Interfaces*. 10 (2018)14221-14229.

[38]. Tao Wang, Ying Zhang, Qingchang Liu*, Wen Cheng, Xinran Wang, Lijia Pan, **Baoxing Xu**, Hangxun Xu. A Self-Healable, Highly Stretchable, and Solution Processable Conductive Polymer Composite for Ultrasensitive Strain and Pressure Sensing. *Advanced Functional Materials*. 28(2018)1705551.

[39]. Qingchang Liu*, **Baoxing Xu**^. Liquid-Evaporation-Assisted Self-Folding of One-Dimensional Nanomaterials. *The Journal of Physical Chemistry C*. 122(2018) 3078-3090.

[40]. Yue Zhang*, Qingchang Liu*, **Baoxing Xu**^. Self-folding Mechanics of Surface Wettability Patterned Graphene Nanoribbons by Liquid Evaporation. *Journal of Applied Mechanics (JAM)*. 85(2018)021006.

[41]. Yuan Gao*, **Baoxing Xu**^. Controllable Interface Junction, In-Plane Heterostructures Capable of Mechanically Mediating On-Demand Asymmetry of Thermal Transports. *ACS Applied Materials & Interfaces*. 9 (2017)34506-34517.

[42]. Weizhu Yang*, Qingchang Liu*, Zhufeng Yue, Xiaodong Li, **Baoxing Xu**^. Rotation of Hard Particles in a Soft Matrix. *Journal of the Mechanics and Physics of Solids.* 101(2017)285-310

[43]. Yue Zhang*, Qingchang Liu*, **Baoxing Xu**^. Liquid-Assisted, Etching-Free, Mechanical Peeling of 2D Materials. *Extreme Mechanics Letters*. 16(2017)33-40.

[44]. Yuan Gao*, Weizhu Yang*, **Baoxing Xu**^. Tailoring Auxetic and Contractile Graphene to Achieve Interface Structures With Fully Mechanically Controllable Thermal Transports. *Advanced Materials Interfaces*. 4 (2017)1700278.

[45]. Yuan Gao*, Qingchang Liu*, **Baoxing Xu**^. Lattice Mismatch Dominant Yet Mechanically Tunable Thermal Conductivity in Bilayer Heterostructures. *ACS Nano*. 10(2016)5431–5439.

[46]. Weizhu Yang*, Zhufeng Yue, **Baoxing Xu**^. A Hybrid Elastomeric Foam-core/Solid-shell Spherical Structure for Enhanced Energy Absorption Performance. *International Journal of Solids and Structures*. 92-93(2016)17-28.

[47]. Qingchang Liu*, Yuan Gao*, **Baoxing Xu**^. Liquid Evaporation-Driven Folding of Graphene Sheets. *Applied Physics Letters*. 108(2016)141906.

[48]. Qingchang Liu*, **Baoxing Xu**^. A Unified Mechanics Model for Wettability Gradient-Driven Motion of Water Droplet on Solid Surfaces. *Extreme Mechanics Letters*. 9(2016)304-309.

[49]. Weizhu Yang*, Jia Yang, Shimin Mao, Tao Shang, Hongguang Song, James Mabon, Wacek Swiech, John R Vance, Zhufeng Yue, Shen J. Dillon, Hangxun Xu, **Baoxing Xu**^. Large-deformation and High-strength Amorphous Porous Carbon Nanospheres. *Scientific Reports.* 6(2016) 24187.

[50]. **Baoxing Xu**, Aadeel Akhtar, Yuhao Liu, Hang Chen, Woon-Hong Yeo, Sung II Park, Brandon Boyce, Hyunjin Kim, Jiwoo Yu, Hsin-Yen Lai, Sungyoung Jung, Yuhao Zhou, Jeonghyun Kim, Seongkyu Cho, Yonggang Huang, Timothy Bretl, John A. Rogers. An Epidermal Stimulation and Sensing Platform for Sensorimotor Prosthetic Control, Management of Lower Back Exertion, and Electrical Muscle Activation. *Advanced Materials*. 28(2016)4462-4417.

[51]. Yuan Gao*, Weizhu Yang*, **Baoxing Xu**^. Unusual Thermal Conductivity Behavior of Serpentine Graphene Nanoribbons Under Tensile Strain. *Carbon*. 96 (2016)513-521

[52]. Qingchang Liu*, **Baoxing Xu**^. Actuating Water Droplets on Graphene via Surface Wettability Gradients. *Langmuir*. 31 (2015)9070-9075

[53]. Yuan Gao*, **Baoxing Xu**^. Probing Thermal Conductivity of Fullerene C_{60} Hosting a Single Molecule. *The Journal of Physical Chemistry C*. 2015, 119 (35), pp 20466-20473.

[54]. Li Gao, Yihui Zhang, Viktor Malyarchuk, Lin Jia, Kyung-In Jang, Richard Webb, Haoran Fu, Yan Shi, Guoyan Zhou, Luke Shi, Deesha Shah, Xian Huang, **Baoxing Xu**, Cunjiang Yu, Yonggang Huang, and John Rogers. Epidermal Photonic Devices for Quantitative Imaging of Temperature and Thermal Transport Characteristics of the Skin. *Nature Communications*. 5 (2014) 4938.

[55]. **Baoxing Xu**, Xi Chen, Weiyi Lu, Cang Zhao and Yu Qiao. Non-dissipative Energy Capture of Liquids in Nonwetting Nanopores. *Applied Physics Letters.* 104(2014) 203107.

[56]. Xi Chen, **Baoxing Xu**, Ling Liu. Nanoscale Fluid Mechanics and Energy Conversion. *Applied Mechanics Review*. 66(2014) 050803.

[57]. **Baoxing Xu**, Yu Qiao, Xi Chen. Mitigating Impact/Blast Energy via a Novel Nanofluidic Energy Capture Mechanism. *Journal of the Mechanics and Physics of Solids*. 62(2014), pp: 194-208.

[58]. **Baoxing Xu**, Xi Chen. Electrical-driven Transport of Endohedral Fullerene Encapsulating a

Single Water Molecule. *Physical Review Letters*. 110 (2013)156103 (4pp).

[59]. **Baoxing Xu**, Xi Chen. Liquid Flow-Induced Energy Harvesting in Carbon Nanotubes: A Molecular Dynamics Study. *Physical Chemistry Chemical Physics*. 15 (4) (2013), pp: 1164-1168.

[60]. **Baoxing Xu**, Ling Liu, Hyuck Lim, Yu Qiao, Xi Chen. Harvesting Energy from Low-grade Heat Based on Nanofluids. *Nano Energy, Rapid Communication*. 1 (2012), pp: 805-811.

[61]. **Baoxing Xu**, Binglei Wang, Yu Qiao, Qulan Zhou, Xi Chen. Temperature Dependence of Fluid Transport in Nanopores. *Journal of Chemical Physics*. 136 (2012) 184701(7pp).

[62]. **Baoxing Xu**, Yu Qiao, Mooho Tak, Taehyo Park, Weiyi Lu, Xi Chen. A Conceptual Thermal Actuation System Driven by Interface Tension of Nanofluids. *Energy & Environmental Science*. 4(2011), pp: 3632-3639.

[63]. **Baoxing Xu**, Yibing Li, Taehyo Park, Xi Chen. Effect of Wall Roughness on Fluid Transport Resistance in Nanopores. *Journal of Chemical Physics*. 135 (2011), 144703(5pp).

[64]. **Baoxing Xu**, Yu Qiao, Yibing Li, Qulan Zhou, Xi Chen. An Electro-Actuation System based on Nanofluids. *Applied Physics Letters*. 98(2011), 221909(3pp).

[65]. **Baoxing Xu**, Yu Qiao, Qulan Zhou, Xi Chen. Effect of Electric Field on Liquid Infiltration into Hydrophobic Nanopores. *Langmuir*. 27(10) (2011), pp: 6349-6357.

[66]. **Baoxing Xu**, Xi Chen. The Role of Mechanical Stress on the Formation of Human Hair Curly Pattern. *Journal of the Mechanical Behavior of Biomedical Materials*. 4(2) (2011), pp: 212-221.

[67]. **Baoxing Xu**, Xi Chen. Determining Engineering Stress-Strain Curve Directly from the Load-Depth Curve of Spherical Indentation Test. *Journal of Materials Research*. 25(12) (2010), pp: 2297-2307.

[68]. **Baoxing Xu**, Zhufeng Yue, Xi Chen. Characterization of Strain Rate Sensitivity and Activation Volume Using Indentation Relaxation Test. *Journal of Physics D: Applied Physics*. 43(24) (2010), 245401(5pp).

[69]. Bin Zhao, **Baoxing Xu**, Zhufeng Yue. Indentation Creep-fatigue Test on Aluminum Alloy 2A12. *Materials Science and Engineering A*. 527(16-17) (2010), pp: 4519-4522.

[70]. **Baoxing Xu**, Akio Yonezu, Xi Chen. An Indentation Fatigue Strength Law. *Philosophical Magazine Letters*. 90(5) (2010), pp: 313-322.

[71]. Akio Yonezu, **Baoxing Xu**, Xi Chen. An Experimental Methodology for Characterizing Fracture of Hard Thin Films under Cyclic Contact Loading. *Thin Solid Films*. 518 (8) (2010),

pp: 2082-2089.

[72]. **Baoxing Xu**, Zhufeng Yue, Xi Chen. An Indentation Fatigue Depth Propagation Law. *Scripta Materialia*. 60(10) (2009), pp: 854-857.

[73]. **Baoxing Xu**, Xi Chen, Haim Waisman. Crack Propagation Toward a Desired Path by Controlling the Force Direction. *Engineering Fracture Mechanics*. 76 (16) (2009), pp: 2554-2559.

[74]. **Baoxing Xu**, Akio Yonezu, Zhufeng Yue, Xi Chen. Indentation Creep Surface Morphology of Nickel-based Single Crystal Superalloys. *Computational Materials Science*. 46(2) (2009), pp: 275-285.

[75]. **Baoxing Xu**, Zhufeng Yue, Xi Chen. Analysis of Damage During Bending Creep Tests. *Philosophical Magazine Letters*. 89(5) (2009), pp: 335-347.

[76]. **Baoxing Xu**, Zhufeng Yue, Xi Chen. Numerical Investigation of Indentation Fatigue on Copper Polycrystalline. *Journal of Materials Research. Focus Issue: Indentation Methods in Advanced Materials Research*. 24(3) (2009), pp: 1007-1015.

[77]. **Baoxing Xu**, Xinmei Wang, Zhufeng Yue. Determination of the Internal Stress and Dislocation Velocity Stress Exponent with Indentation Stress Relaxation Test. *Journal of Materials Research*. 23(9) (2008), pp: 2486-2490.

[78]. Xinmei Wang, **Baoxing Xu**, Zhufeng Yue. Micromechanical Modelling of the Effect of Plastic Deformation on the Mechanical Behaviour in Pseudoelastic Shape Memory Alloys. *International Journal of Plasticity*. 24(2008), pp: 1307-1332.

[79]. **Baoxing Xu**, Xinmei Wang, Bin Zhao, Zhufeng Yue. Study of Crystallographic Creep Parameters of Nickel-based Single Crystal Superalloys by Indentation Method. *Materials Science and Engineering A*. 478(1-2) (2008), pp: 187-194.

[80]. Xinmei Wang, **Baoxing Xu**, Zhufeng Yue and Xiaoyan Tong. Fracture Behavior of the Compact Tension Specimens in NiTi Shape Memory Alloys. *Materials Science and Engineering A*. 485(2008), pp: 14-19.

[81]. **Baoxing Xu**, Zhufeng Yue, Gunther Eggeler. A Numerical Procedure for Retrieving Material Creep Properties from Bending Creep Tests. *Acta Materialia*. 55(18) (2007), pp: 6275-6283.

[82]. **Baoxing Xu**, Zhufeng Yue, Jian Wang. Indentation Fatigue Behaviour of Polycrystalline Copper. *Mechanics of Materials*. 39(12) (2007), pp: 1066-1080.

[83]. **Baoxing Xu,** Xinmei Wang, Zhufeng Yue. Indentation Behavior of Polycrystalline Copper under Fatigue Peak Overloading. *Journal of Materials Research*. 22(6) (2007), pp:

1585-1592**.**

[84]. Yongjun Liu, Bin Zhao, **Baoxing Xu**, Zhufeng Yue. Experimental and Numerical Study of the Method to Determine the Creep Parameters from the Indentation Creep Testing. *Materials Science and Engineering A***.** 456(2007), pp: 103-108.

[85]. **Baoxing Xu**, Zhufeng Yue. Study of the Ratcheting by the Indentation Fatigue Method with a Flat Cylindrical Indenter: Part II. Finite Element Simulation. *Journal of Materials Research*. 22(1) (2007), pp: 186-192.

[86]. **Baoxing Xu**, Zhufeng Yue. Study of the Ratcheting by the Indentation Fatigue Method with a Flat Cylindrical Indenter: Part I. Experimental Study. *Journal of Materials Research*. 21(7) (2006), pp: 1793-1797.

[87]. Zhufeng Yue, **Baoxing Xu**. Prediction of Strength Using Flat Cylindrical Indentation Method. *Theoretical and Applied Fracture Mechanics*. 46(2006), pp: 70-74.

C. Book Chapter (invited)

[1]. **Baoxing Xu^**, Xi Chen, Zhufeng Yue. Indentation Fatigue Mechanics. *Handbook of Nonlocal Continuum Mechanics for Materials and Structures*. *Editor*: George Z. Voyiadjis. Springer Nature Publisher. 2018. pp: 1-31.

D. Editorial

[1]. **Baoxing Xu**, Xiaodong Chris Li, Horacio D Espinosa. Editorial for the focus issue on "Mechanics in Extreme Manufacturing" in Extreme Mechanics Letters. *Extreme Mechanics Letters.* 7(2016)42-43.