

YUNTIAN ZHU

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More information can be found at: <http://www.hsm-lab.com/>
(updated on July 11, 2024)

Education:

- 1979-1983 **Hefei University of Technology, China**
B.S. in Metallurgy
- 1985-1988 **Institute of Metal Research, Chinese Academy of Sciences**
M.S. in Materials Science and Engineering
- 1989-1991 **Oregon Graduate Institute of Science and Technology**
M.S. in Materials Science and Engineering
- 1991-1994 **The University of Texas at Austin**
Ph.D. in Materials Science and Engineering

Professional Experience:

- 1983-1985 **Assistant Engineer**, Luoyang Bearing Research Institute, Luoyang, China
- 1994-1997 **Director's Postdoctoral Fellow**, Los Alamos National Laboratory, Los Alamos, NM
- 1997-2009 **Technical Staff Member**, Los Alamos National Laboratory
- 2006-2007 **Team Leader**, Nanomaterials, MPA-STC, Los Alamos National Laboratory
- 2007-2009 **Associate Professor**, North Carolina State University, USA
- 2009-2012 **Professor**, North Carolina State University, USA
- 2011-2020 **Thousand Talents Professor, Dean**, School of Mater. Sci. Eng.; **Adjunct Professor, Director**, Nano & Heterogeneous Materials Center, Nanjing University of Science and Technology, China
- 2012-2020 **Distinguished Professor**, North Carolina State University, USA
- 2020- **Chair Professor**, City University of Hong Kong; **Distinguished Professor Emeritus**, North Carolina State University

Honors:

- Foreign Member**, Academia Europaea (The Academy of Europe) (2023)
- Fellow**, National Academy of Inventors, US (2022)
- Fellow**, ASM International (2010)
- Fellow**, American Physical Society (2011)
- Fellow**, American Association for the Advancement of Science (AAAS) (2012)
- Fellow**, The Minerals, Metals and Materials Society (TMS) (2017)
- Fellow**, Materials Research Society (MRS) (2019)
- Director's Postdoctoral Fellowship**, Los Alamos National Laboratory (1994-97)
- Achievement Award**, Los Alamos National Laboratory (1999)
- Nano50 Award**, 4-cm Long Carbon Nanotubes, by *Nanotech Briefs*, 2005.
- Best Idea Award**, Los Alamos National Lab., 2006
- Nano50 Award**, The Ultra-Strong, Stiff, and Lightweight CNT Fiber, by *Nanotech Briefs*, 2007
- TMS MPMD Distinguished Scientist/Engineer Award**, 2010
- Alumni Outstanding Research Award**, NC State University, 2010

Thousand Talents Plan Award, China, 2010
TMS SMD Distinguished Scientist/Engineer Award, 2012
Special Contribution Award, Nanjing University of Science and Technology, 2012
Albert Sauveur Achievement Award, ASM International, 2014
Alcoa Foundation Distinguished Engineering Research Award, NC State University, 2014
Highly Cited Researchers 2014, among 147 in Materials Science, [Thomson Reuters \(ISI\)](#)
Leadership Award, TMS, 2015
IUMRS Sômiya Award, International Union of Materials Research Societies, 2015
Highly Cited Researchers 2016, [Thomson Reuters \(ISI\)](#)
TE Connectivity Lecture, Penn. State University, Jan. 26, 2017
Lyman Handy Colloquium Lecture, University of Southern California, Sept. 21, 2017
Institute of Metals Lecture and Robert Franklin Mehl Award, TMS, 2020

Fast Breaking Paper, “Producing bulk ultrafine-grained materials by severe plastic deformation,”
ScienceWatch, April 2006

Fast Breaking Paper, “Sustained growth of ultralong carbon nanotube arrays for fiber spinning,”
April 2008

Invited Guest Editor on a special issue for the Journal of Materials Science on Nanomaterials
Science, 2006

Founding Editor-in-Chief, Materials Research Letters, 2012-present

Editorial Board, Journal of Materials Science, 2006-present

Editorial Board, Materials Science and Engineering A, 2006-present

Advisory Board, Advanced Engineering Materials, 2006-2018

Editorial Board, The Open Applied Physics Journal, 2007-present

Editorial Board, Letters on Materials, 2013-present

Editorial Board, Acta Metallurgica Sinica, 2014-present

Editorial Board, Reviews on Advanced Materials Science, 2017-present

Editorial Advisory Board, Reviews on Advanced Materials Science, 2019-present

Senior Editorial Board, Microstructures, 2022-present

Committees:

Chair, TMS Award Subcommittee (AIME Robert Lansing Hardy, Application to Practice, Cyril Stanley Smith, and Alexander Scott Distinguished Service) (2014)

2013 Nanotechnology International Prize RUSNANOPRIZE Expert Group

Advisory Board, Jiangsu Suzhou Nanotechnology Research Institute (2011-present)

One of the Six Members of the International nanoSPD Steering Committee (2002-present)

Past Chair, TMS MPMD Shaping and Forming Committee

Scientific Committee, International Conf. on Composite Eng. (2001-present)

International Advisory Committee, The Joint Conference of HSLA and ISUGS'05, Sanya, China
(Nov. 8-10, 2005)

Advisory board, International Conference on Composite Engineering (ICCE/7, 2000)

International Advisory board, 1st International Conference on Nanostructured Alloys, Dushanbe,

Tajikistan (2012)

Scientific Committee, 1st International Symposium on Machining and Mechanics of Advanced Composite Materials (ISMMC2014), Hangzhou, China, June 28-30, 2014.

Scientific Committee, 5th International Conference on Heat Treatment (ICHT 2015), Isfahan, Iran, Oct. 6-9, 2015.

International Advisory Committee, 36th International Symposium on Materials Science, Risø, Demark, Sept. 7-11, 2015.

Scientific Committee, International Conf. of Nanomechanics and Nanocomposites, Vicenza, Italy, Sept. 14-17, 2016.

Advisory Committee, 4th International Conf. on Advances in Materials and Manufacturing (ICAMM-2016), Hyderabad, Telangana, India, Dec. 8-10, 2016.

Advisory Panel, 1st Int. Conf. on Adv. Nanotechnology in Eng. & Medical Sci., Langkawi Island, Malaysia, Nov. 20-21, 2017.

Advisory Committee, Carbon2019, Lexington, KY, July 14-19, 2019

International Advisory Board of the YUCOMAT conference, MRS-Serbia, 2019-

International Advisory Committee, Risoe Intl Symposium on Materials Science, Sept. 5-9, 2022, Roskilde, Denmark

International Committee, 8th International Conference on Magnesium (ICM 8) and the 13th International Conference on Magnesium Alloys and their Applications (Mg2024)

TMS Nanomechanical Materials Behavior Committee

JT. TMS-SMD/ASM-MSCTS Mechanical Behavior of Materials Committee

Society Membership:

Member, Tau Beta Pi (Engineering Honor Society)

Member, American Association for the Advancement of Science

Member, Minerals, Metals & Materials Society (TMS)

Member, Materials Research Society

Member, ASM International

Member, American Physics Society

Plenary Lectures:

1. Nano2005, Boston, MA, Nov. 10-11, 2005.
2. 1st International Symposium on Machining and Mechanics of Advanced Composite Materials (ISMMC2014), Hangzhou, China, June 28-30, 2014.
3. YUCMAT 2019 (MRS-Serbia), Herceg Novi, Montenegro, Sept. 2-6, 2019.
4. Institute of Metals/Robert Franklin Mehl Award talk, 2020 TMS Annual Meeting, San Diego, CA, Feb. 23-27, 2020.
5. The 7th International Conference on Magnesium, Shenyang, China, Nov. 19-22, 2020.
6. Magnitogorsk Materials Week, Nosov Magnitogorsk State University, Chelyabinsk, Russia, April 5-7, 2021.
7. International Symposium on the Frontiers of Metallic Structural Materials, Shenyang, China, Dec. 7-9, 2022.
8. Hetero Symposium, Japan, March 3-4, 2023.
9. 24th Annual Conference YUCOMAT 2023, Herceg Novi, Montenegro, Sept. 4-8, 2023.

Keynote and Named Lectures:

1. **Distinguished Lectureship**, Sixth International Conference on Composite Engineering, Orlando, FL, June 27-July 3, 1999.

2. 2nd International Conference on Nanomaterials by Severe Plastic Deformation 2: Fundamentals-Processing-Applications, Vienna, Austria, Dec. 3-9, 2002.
3. NATO Advanced Research Workshop on Nanostructured Materials by High Pressure, Donetsk, Ukraine, Sept. 22-26, 2004.
4. The 3rd International Conference on Nanomaterials by Severe Plastic Deformation (NanoSPD3), Fukuoka, Japan, Sept. 22-26, 2005.
5. THERMEC'2006, Vancouver, Canada, July 4-8, 2006.
6. German Research Unit on Ultrafine Grained Materials, Kloster Irsee, Germany, Sept. 24-27, 2006.
7. Plasticity2007, Anchorage, Alaska, June 2-6, 2007.
8. International Symposium on Bulk Nanostructured Materials (BNM 2007), Ufa, Russia, Aug. 15-18, 2007.
9. International Symposium on Giant Straining Process for Advanced Materials (GSAM), Fukuoka, Japan, Nov. 21-24, 2008.
10. Role of Twinning in Plasticity, Plasticity-2009, Virgin Island, US, Jan. 3-8, 2009.
11. Austrian Network on High Performance Bulk Nanocrystalline Materials, Planneralm, Austria, March 4-6, 2009.
12. 2nd International Symposium on Bulk Nanostructured Materials (BNM-2009), Ufa, Russia, Sept. 22-26, 2009.
13. The Second Nanotechnology International Forum (Rusnanotech09), Moscow, Russia, Oct. 6-8, 2009.
14. International Symposium on Giant Straining Process for Advanced Materials (GSAM2010), Fukuoka, Japan, Nov. 19-22, 2010.
15. Mechanical Properties Related to Interface Physics, TMS Annual Meeting, Disney World, Florida, March 11-15, 2012.
16. Seventh International Symposium on Ultrafine Grained Materials, TMS Annual Meeting, Disney World, Florida, March 11-15, 2012.
17. 33rd Risø International Symposium on Materials Science: Nanometals-Status and Perspectives, Denmark, Sept. 3-7, 2012.
18. Mechanics of Crystalline Nanostructures, 2012 Annual Meeting of the Society of Engineering Science 2012, Atlanta, Georgia, Oct. 10-12, 2012.
19. The 1st International Workshop on Nanostructured Materials – Properties and Characteristics, Beijing, China, June 17-18, 2013.
20. Deformation Mechanisms in Advanced Materials Behavior and Processing: A Symposium in Honor of Amiya K. Mukherjee, Plasticity 2014, Freeport, Bahama, Jan. 3-8, 2014.
21. Symposium on Progress Towards Rational Materials Design in the Three Decades Since the Invention of the Embedded Atom Method, 2014 TMS Annual Meeting, San Diego, CA, USA, Feb. 16-20, 2014.
22. The 15th International Conference on Rapidly Quenched & Metastable Materials, Shanghai, China, Aug. 24-28, 2014.
23. Materials Science & Technology 2014, Pittsburgh, PA, USA, Oct. 12-16, 2014.
24. 8th K. Kuo Summer School of Electron Microscopy and Crystallography & The 1st International Conference on Microstructure and Property of Materials, Hangzhou, China, May 27 – 30, 2015.
25. 3rd International Workshop on Nanostructured Materials-Properties and Characteristics, Beijing, China, June 13-14, 2015.
26. International Workshop on Giant Straining-Process for advanced Materials 2015, Fukuoka, Japan, Sept. 3-6, 2015.
27. Symposium on Nanomaterials, City University of Hong Kong, Nov. 21, 2015.
28. Third Oversea Young Scholar Zijin Forum, Nanjing University of Science and Technology, Dec. 18, 2015.
29. **Tiandi Modern Engineering Colloquium**, Nanjing University, Nanjing, China, Dec. 18, 2015.
30. High-pressure Deformation and Nano Texture Workshop, Ningpo, China, July 5, 2016.
31. Nano2016, Quebec City, Canada, Aug. 7-12, 2016.
32. 4th International Workshop on Nanostructured Materials: Properties and Characteristics, Beijing, China, Oct. 9-10, 2016.
33. **The 21st Young Materials Scientist Colloquium**, Beijing University of Science and Technology, China, Dec. 13, 2016.

34. **TE Connectivity Lecture Series**, Penn. State University, Jan. 26, 2017.
35. **Distinguished Seminar Series** on Recent Breakthroughs in Engineering Fields, Chongqing University, Chongqing, China, May 29, 2017.
36. **Lyman Handy Colloquium**, University of Southern California, Sept. 21, 2017.
37. 17th Beijing Conf. and Exhibition on Instrumental Analysis, Beijing, China, Oct. 9-11, 2017.
38. Mechanical Properties of Nanocrystalline Materials and High Entropy Alloys in Honor of Prof. Carl C. Koch, Plasticity'18, San Juan, Puerto Rico, Jan. 3-9, 2018.
39. Ultrafine-Grained Materials X, TMS Annual Meeting, Phoenix, Arizona, March 11-15, 2018.
40. International Workshop on Grain Boundaries and Dislocations towards High Performance Metals and Alloys, Beijing, China, June 21-22, 2018.
41. Bulk and Gradient Nanomaterials, 14th International Conf. on Nanostructured Materials (NANO2018), Hong Kong, June 24-29, 2018.
42. 4th International Symposium on Science of Intelligent and Sustainable Advanced Materials, Rio De Janeiro, Brazil, Nov. 4-7, 2018.
43. 2nd Workshop on Gradient and Laminate Materials, Beijing, China, Nov. 20-22, 2018.
44. The First International Workshop on Large Data of Microstructures for Advanced Materials, Beijing, China, June 20-23, 2019.
45. Workshop on Fundamentals of Heterostructured Materials, Nanjing, China, Oct. 25-26, 2019.
46. Institute of Metals/Robert Franklin Mehl Award Lecture, 2020 TMS Annual Meeting, San Diego, CA, Feb. 26, 2020.
47. Frontier of Physics Lecture Series: Heterostructured Materials: New Materials Science leads to Superior Properties, Aug. 28, 2020.
48. The 7th International Conference on Magnesium, ICM7, Chongqing, China, Nov. 2, 2020.
49. Materials for Extreme Conditions, Mater. Res. Soc. Fall Meeting, Boston, Nov. 28-Dec. 4, 2020.
50. Advanced Materials Lecture Series, International Association of Advanced Materials (IAAM), Sweden, Dec. 11, 2020.
51. SmartMat Academic Seminars (Webibar), June 16, 2021.
52. The 4th Adv. Structural Materials Workshop, Chongqing, China, July 14-17, 2021.
53. 2022 International Conference on New Non-Ferrous Metal Materials, Nanning, China, July 16-17, 2022.
55. Future Materials, Rome, Italy, Oct. 3-7, 2022.
56. Second International Workshop on Superfunctional Energy/Nano Materials, Fukuoka, Japan, Aug. 31-Sept. 2, 2023.
57. College of Engineering Lecture Series, No.59, Southern University of Science and Technology, Shenzhen, China, June 14, 2023.
58. First Workshop on Non-uniform Nanomaterials-Advanced Materials, Beijing, China, Oct. 20-21, 2023.
59. Science Club Lecture #400, School of Powder Metallurgy, Central South University, Changsha, China, Nov. 3, 2023.
60. Distinguished Lecture of Central South University and the "De Cai" Forum of the School of Materials Science and Engineering, Changsha, China, Nov. 3, 2023.
61. The 11th Pacific Rim International Conf. on Advanced Materials and Processing (PRICM11), Jeju, Korea, Nov. 19-23, 2023.
62. 2nd International Symposium on Materials Processing (ISMP2023), Shenyang, China, Dec. 1-2, 2023.
63. Functionally Graded Materials, China Materials Conference, Guangzhou, China, July 8-11, 2024.

Invited talks:

1. Fifth U.S. National Congress on Computational Mechanics, Boulder, CO, Aug. 4-6, 1999.

2. NATO Advanced Research Workshop on Investigations and Applications of Severe Plastic Deformation, Moscow, Russia, Aug. 2-6, 1999.
3. 1999 TMS Fall meeting, Cincinnati, OH, Oct. 31-Nov. 4, 1999.
4. 1999 Society of Engineering Science, Austin, TX. Oct. 25-27, 1999.
5. 1999 International Mechanical Engineering Congress and Exposition, Nashville, TN, Nov. 14-19, 1999.
6. The 24th Cocoa Beach Conference, Cocoa Beach, FL, Jan. 23-28, 2000.
7. Invited seminar, University of California, San Diego, CA, Oct. 27, 2000.
8. Workshop on Ultrafine Grained Materials, Hanyang University, Ansan, South Korea, April 26, 2001.
9. Annual Meeting of Korea Society of Metals and Alloys, Pusan, South Korea, April 27, 2001.
10. Invited seminar, Illinois Institute of Technology, Chicago, IL, June 4, 2001.
11. Invited seminar, University of California, Irvine, CA, Oct. 12, 2001.
12. TMS Spring Meeting, 2002, Seattle, WA, Feb. 17-21, 2002.
13. Invited seminar, Florida State University, Tallahassee, FL, April 2, 2003.
14. Symposium on Severe Plastic Deformation, THERMEC'2003, Madrid, Spain, July 7-11, 2003.
15. Nanotubes, The 2nd Annual International Conferences on the Space Elevator, Santa Fe, NM, Sept. 12-15, 2003.
16. Nanomechanics Workshop, Center for Integrated Nanotechnology, Los Alamos National Laboratory and Sandia National Laboratories, Los Alamos, NM, Oct. 23, 2003.
17. Workshop on Nano-structures in the Environment and Technology, University of New Mexico, Albuquerque, NM, Jan. 15-16, 2004.
18. Division review, Materials Science and Technology Division, Los Alamos National Lab., Los Alamos, NM, Feb. 17-19, 2004.
19. Nanostructured Metal and Alloys, MRS Symposium P: Nanoscale Materials and Modeling Relations Among Processing, Microstructure, and Mechanical Properties, San Francisco, CA, April 12-16, 2004.
20. Invited seminar, Sandia National Laboratories, Albuquerque, NM, June 24, 2004.
21. Second Symposium of Carbon Nanotube Separations, 31st Annual Meeting of the Federation of Analytical Chemistry and Spectroscopy Society, Portland, OR, Oct. 3-7, 2004.
22. International Symposium on Manufacturing, Properties and Applications of Nanocrystalline Materials, ASM International Materials Solutions Conference, Columbus, OH, Oct. 18-21, 2004.
23. Invited seminar, Florida State University, Tallahassee, FL, Nov. 1, 2004.
24. The Eleventh International Symposium on Plasticity (PLASTICITY 2005), Kauai, Hawaii, Jan. 4-8, 2005.
25. Carbon Nanotube Reinforced Composite Workshop-Toward Revolutionary Advances in Carbon Nanotube Reinforced Composite Fibers for Space & Commercial Applications, Center for Applied Energy Research, University of Kentucky, Lexington, KY, Jan. 11-12, 2005.
26. Department of Chemical and Materials Engineering, University of Kentucky, Lexington, KY, Jan. 13, 2005.
27. Center for Integrated Nanotechnologies (CINT) Workshop, Albuquerque, NM, Jan. 19-21, 2005.
28. 2005 TMS Spring Meeting, Micromechanics of Advanced Materials II (Symposium in honor of James C.M. Li's 80th Birthday), San Francisco, CA, Feb. 13-16, 2005.
29. University of California, Davis, CA, Feb. 17, 2005.
30. New Mexico State University, Las Cruces, NM, March 11, 2005.
31. University of California, Irvine, CA, April 26, 2005.
32. Nanomaterials and Nanotechnologies (NN 2005), Crete, Greece, June 14-18, 2005.
33. University of Southern California, Sept. 14, 2005.
34. Ultrafine Grained Materials, JIM-ISIJ, Hiroshima, Japan, Sept. 28, 2005.
35. MRS Fall Meeting, 2005, Symposium Z: Amorphous and Nanocrystalline Metals for Structural Applications, Boston, Massachusetts, Nov. 28-Dec. 2, 2005.
36. Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, Dec. 12, 2005.
37. College of Chemistry and Molecular Engineering, Beijing University, Beijing, China, Dec. 13, 2005.
38. Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China, Dec. 16, 2005

39. School of Materials Science & Engineering, Nanjing University of Science and Technology. Dec. 23, 2005.
40. 2006 Nanomaterials: Materials and Processing for Functional Applications, TMS Annual Meeting, San Antonio, TX, March 12-16, 2006.
41. GM Research & Development Center, Warren, MI, July 31, 2006.
42. California State University, Northridge, Aug. 11, 2006.
43. North Carolina State University, Sept. 8, 2006.
44. Risø National Laboratory, Denmark, Sept. 28, 2006.
45. MS&T'06, Cincinnati, Ohio, Oct. 15-18, 2006.
46. Materials Capability Review, May 15-18, 2007.
47. University of North Carolina, Charlotte, Sept. 13, 2007.
48. Mechanics of Nanomaterials and Micro/Nanodevices-Experimental and Modeling, MS&T'07, Detroit, Michigan, Sept. 16-20, 2007.
49. Nanotailored Carbon Fibers, Air Force Institute of Technology facility, Dayton, OH, Nov. 6-7, 2007.
50. Hohai University, Nanjing, China, Dec. 17, 2007.
51. Suzhou Institute of Nano-Tech and Nano-Bionics, CAS, Suzhou, China, Dec. 18, 2007.
52. Shanghai Jiaotong University, Shanghai, China, Dec. 19, 2007.
53. Donghua University, Shanghai, China, Dec. 20, 2007.
54. Kunming University of Science and Technology, Kunming, China, Dec. 21, 2007.
55. Beijing University, Beijing, China, Dec. 25, 2007.
56. Institute of Physics, CAS, Beijing, China, Dec. 26, 2007.
57. Xi'An Jiaotong University, Xi'An, China, Dec. 28, 2007.
58. Carolinas Central Chapter, ASM International, Feb. 21, 2008.
59. Plasticity, Failure and Fatigue in Structural Materials: from Macro to Nano, TMS Annual Meeting, New Orleans, LA, March 3-13, 2008.
60. Nanotubes, Nanowires, Nanobelts and Nanocoils-Promise, Expectations and Status, MRS Fall Meeting, Boston, MA, Dec. 1-5, 2008.
61. International Workshop on the Plasticity of Nanocrystalline Metals, Lake Bostal, Germany, Sept. 28-Oct. 1, 2008.
62. Plasticity and Fracture of Nano-Materials, Plasticity-2009, Virgin Island, US, Jan. 3-8, 2009
63. 2009 Functional and Structural Nanomaterials: Fabrication, Properties, and Applications, TMS Annual Meeting, San Francisco, CA, Feb. 15-19, 2009.
64. Hehai University, Nanjing, China, May 28, 2009.
65. South China University of Technology, Guangzhou, China, June 8, 2009.
66. Shanghai Jiaotong University, Shanghai, China, June 11, 2009.
67. Donhua University, Shanghai, China, June 12, 2009
68. University of Nevada, Reno, Nevada, Nov. 20, 2009.
69. The 47th Sagamore Army Materials Research Conference, St. Michael, MD, June 14-17, 2010.
70. Tsinghua University, Beijing, China, July 14, 2010.
71. "Shaping and Forming of High Strength Steel, Titanium and Light Metals," MS&T 2010, Houston, TX, Oct. 17-21, 2010.
72. Size Effects in Mechanical Behavior, 2011 TMS Annual Meeting, San Diego, CA, Feb. 27-March 3, 2011.
73. 2011 Functional and Structural Nanomaterials: Fabrication, Properties, Applications and Implications, 2011 TMS Annual Meeting, San Diego, CA, Feb. 27-March 3, 2011.
74. Shanghai Jiaotong University, Shanghai, China, May 30, 2011.
75. Hohai University, Nanjing, China, July 7, 2011.
76. Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China, July 19, 2011.
77. Rensselaer Polytechnic Institute, Troy, New York, Sept. 14, 2011.
78. Mechanical Properties of Nanomaterials-Experiments and Modeling, E-MRS 2011 Fall Meeting, Warsaw, Poland, Sept. 19-22, 2011.

79. Workshop on Complex Dynamics of Dislocations, Defects and Interfaces, Los Alamos National Laboratory, Nov. 14-16, 2011.
80. College of Textile, NC State University, Jan. 18, 2012.
81. Department of Physics and Astronomy, The University of Texas at San Antonio, Texas, Feb. 3, 2012.
82. Deformation, Damage and Fracture of Light Metals and Alloys, TMS Annual Meeting, Disney World, Florida, March 11-15, 2012.
83. Nanotube Assemblages for Structures Workshop, Atlanta, Georgia, April 17-18, 2012.
84. Recent Development in the Processing and Properties of Ultrafine-Grained Materials, E-MRS 2011 Fall Meeting, Warsaw, Poland, Sept. 17-21, 2012.
85. Stuttgart Nanodays 2012 Workshop, Winston-Salem, NC, Oct. 29-30, 2012.
86. The 2012 Nanotechnology Materials and Devices Workshop, Dayton, OH, Nov. 5-6, 2012.
87. Mechanical Behavior of Metallic Nanostructured Materials, MRS Fall meeting, Boston, Nov. 26-30, 2012.
88. School of Materials Science and Engineering, Shanghai Jiaotong University, Dec. 11, 2012.
89. Advanced Materials and Reservoir Engineering for Extreme Oil & Gas Environments, TMS Annual Meeting, San Antonio, TX, March 3-7, 2013.
90. Lanzhou University, Lanzhou, China, June 12, 2013.
91. International Workshop on Advancing Materials Performance from the Nanoscale, Xi'an, China, June 12-14, 2013.
92. Symposium on Rare Earth, Electronic, and Magnetic Materials, The 8th Pacific Rim International Conference on Advanced Materials and Processing, Waikoloa, Hawaii, Aug. 4-9, 2013.
93. Symposium on Light Metals and Alloys, The 8th Pacific Rim International Conference on Advanced Materials and Processing, Waikoloa, Hawaii, Aug. 4-9, 2013.
94. Texas A&M University, College Station, TX, Jan. 22, 2014.
95. Symposium on Mechanical Behavior Related to Interface Physics II, 2014 TMS Annual Meeting, San Diego, CA, USA, Feb. 16-20, 2014.
96. Ultrafine Grained Materials VIII, 2014 TMS Annual Meeting, San Diego, CA, USA, Feb. 16-20, 2014.
97. Workshop on Nanomaterials for Aerospace, National Institute of Aerospace, Hampton, VA, USA, Feb. 21, 2014.
98. Second International Workshop on Materials Physics, Beijing, China, May 30-June 1, 2014.
99. Friedrich-Alexander University Erlangen-Nürnberg, Germany, July 8, 2014.
100. Eric Schmid Institute of Materials Science, Leoben, Austria, July 10, 2014.
101. HGI Colloquium, Herbert Gleiter Institute, Nanjing Univ. Sci. & Techno., Nanjing, China, Nov. 11, 2014.
102. Workshop on Microstructures and Mechanical Properties of Mg Alloys, Beijing, China, Nov. 13, 2014.
103. Advanced Materials and Reservoir Engineering for Extreme Oil & Gas Environments, TMS Annual Meeting, Orlando, Florida, March 15-19, 2015.
104. Advanced Characterization Techniques for Quantifying and Modeling Deformation Mechanisms, TMS Annual Meeting, Orlando, Florida, March 15-19, 2015.
105. Advances in Thin Films for Electronics and Photonics, TMS Annual Meeting, Orlando, Florida, March 15-19, 2015.
106. School of Mechanical and Materials Engineering, Washington State University, Pullman, April 17, 2015.
107. Department of Mater. Sci. Eng., McMaster University, Hamilton, Ontario, Canada, Oct. 26, 2015.
108. Nanostructured Materials for Nuclear Application, TMS Annual Meeting, Nashville, TN, Feb. 14-18, 2016.
109. The 3rd International Symposium on Materials Physics, May 27-29, 2016
110. 1st Workshop on Gradient and Laminated Metallic Materials, Shenyang, China, July 25-26, 2016.
111. 1st International Harmonic Structured Materials, Ritsumeikan University, Kusatsu, Japan, Aug. 6, 2016.
112. Special Symposium on Damage and Failure Mechanics: Multiscale Approach, Experimental Characterization, and Modeling, ASME 2016, Phoenix, Arizona, Nov. 11-17, 2016.
113. Materials under Mechanical Extremes, MRS Fall Meeting, Boston, Nov. 27-Dec. 2, 2016.
114. Shear Transformation Mechanisms and Their Effect on Mechanical Behavior of Crystalline Materials, MRS Fall Meeting, Boston, Nov. 27-Dec. 2, 2016.

115. Hehai University, Dec. 22, 2016.
116. Advanced Materials and Reservoir Engineering for Extreme (AMREE) Oil & Gas, TMS Annual Meeting, San Diego, CA, Feb. 26-March 2, 2017.
117. Frontier in Materials Science, Engineering, and Technology: An FMD Symposium in Honor of Sungho Jin, TMS Annual Meeting, San Diego, CA, Feb. 26-March 2, 2017.
118. North Eastern University, Shenyang, China, April 4, 2017.
119. Yanshan University, Qinhuangdao, China, May 23, 2017.
120. Sichuan University, Chengdu, China, May 30, 2017.
121. IUMRS-ICAM 2017, The 15th International Conference on Advanced Materials, Kyoto, Japan, Aug. 27-Sept. 1, 2017.
122. GSAM Workshop 2017, Fukuoka, Japan, Sept. 3-6, 2017.
123. 2nd International Workshop on Harmonic Structure Materials, Ritsumeikan University, Kusatsu, Japan, Oct. 20, 2017.
124. Frontiers in Advanced Functional Thin Films and Nanostructured Materials, TMS Annual Meeting, Phoenix, Arizona, March 11-15, 2018.
125. East China University of Science and Technology, Shanghai, China, May 11, 2018.
126. City University of Hong Kong, Hong Kong, China, May 17, 2018.
127. John P. Hirth Honorary Symposium, 18th International Conf. on the Strength of Materials (ICSMA 18), Columbus, Ohio, USA, July 15-19, 2018.
128. Hael Mughrabi Honorary Symposium, 18th International Conf. on the Strength of Materials (ICSMA 18), Columbus, Ohio, USA, July 15-19, 2018.
129. Materials and Engineering Initiative Seminar, Oak Ridge National Laboratory, TN, Aug. 9, 2018.
130. 2st Workshop on Gradient and Laminated Metallic Materials, Beijing, China, Nov. 20-22, 2018.
131. Central South University, Changsha, China, Dec. 26, 2018.
132. The 4th International Conf. on Microstructures and Properties of Materials, Hangzhou, China, May 15-18, 2019.
133. Shanghai University, Shanghai, China, June 17, 2019.
134. Hehai University, Nanjing, China, June 18, 2019.
135. Changzhou University, Changzhou, China, July 1, 2019.
136. Kunming University of Science and Technology, Sept. 25, 2019.
137. Southern University of Science and Technology, Shenzhen, China, Oct. 11, 2019.
138. Shandong University, Jinan, China, Oct. 21.
139. The Third International Symposium on Advanced Structural Materials, Chongqing, China, Nov. 2-4, 2019.
140. Northeastern University, Shenyang, China, Nov. 24, 2019.
141. Purveyors of Processing Science and ICME: A SMD Symposium to Honor the Many Contributions of Taylan Altan, Wei Tsu Wu, Soo-Ik Oh, and Lee Semiatin, 2020 TMS Annual Meeting, San Diego, CA, Feb. 23-27, 2020.
142. Indian Institute of Technology Hyderabad, Webinar, Sept. 4, 2020.
143. Dongguan University of Technology, Dongguan, Guangdong, Oct. 23, 2020.
144. Center of Excellence for Advanced Materials, Dongguan, Guangdong, Oct. 23, 2020.
145. Shenzhen University, Shenzhen, Guangdong, Oct. 26, 2020.
146. Shenzhen University of Technology, Shenzhen, Guangdong, Oct. 27, 2020.
147. Symposium on Advanced Materials and IC Technology & Discipline Development, Shenzhen Technical University, China, Nov. 6-7, 2020.
148. Northeast University, Shenyang, China, Nov. 13, 2020.
149. The Gleiter Symposium on Frontiers of Nanoscience, Lanzhou, China, Nov. 23, 2020.
150. Jiangyin Electrical Alloy Ltd, Jiangyin, Jiangsu, China, Nov. 24, 2020.
151. Beijing Research Institutes, Anshan Steel, Beijing, China, Nov. 26, 2020.
152. Kunming University of Science and Technology, Kunming, China, Dec. 2, 2020.

153. Hohai University, Nanjing, China, Dec. 4, 2020.
154. Tau Beta Pi NC-Alpha Chapter, Feb. 12, 2021.
155. MRS Webinar on Recent Developments in Nanostructured Metals and Alloys, March 24, 2021.
156. Mechanical Behavior at Micro/Nano Scale, MRS Spring Meeting, Seattle, WA, April 18-23, 2021.
157. 2022 International Workshop on Materials Behavior at Xia'an, China, May 30-June 2, 2022.
158. International Union of Theoretical and Applied Mechanics Symposium on Multiscale Architecting of Microstructures, Beijing, China, June 26-28, 2022.
159. 6th Symposium on Advanced Structural Materials, Chongqing, China, Nov. 4-6, 2022.
160. Deformation-Induced Manipulation of Defect Structures and Hierarchical Microstructures, TMS Annual Meeting, San Diego, CA, March 19-23, 2023.
161. The 10th International Workshop on Advanced Materials, Huizhou, China, March 30-April 2, 2023.
162. Shanghai Jiaotong University, Shanghai, China, May 19, 2023.
163. Baowu Steel, Shanghai, China, May 20, 2023.
164. Northeastern University, Shenyang, China, May 24, 2023.
166. Hehai University, Nanjing, China, May 25, 2023.
167. North Carolina State University, Raleigh, NC, USA, June 30, 2023.
168. Gordon Research Conference on Physical Metallurgy, Easton, MA, USA, July 9-14, 2023.
169. Department of Metallurgical Engineering, National Autonomous University of Mexico, Mexico City, Mexico, Aug. 10, 2023.
170. Heterostructured Materials: Fundamentals, Processing, Properties and Applications, 31st International Materials Research Conference, 2023, Cancun, Mexico, Aug. 13-18, 2023.
171. Lanzhou University of Technology, Lanzhou, China, Aug. 23, 2023.
172. Korea Atomic Energy Research Institute, Daejeon, South Korea, Nov. 22, 2023.
173. Advances in Multi-Principal Element Alloys III: Mechanical Behavior, TMS Annual Meeting, Orlando, Florida, March 3-7, 2024.
174. Ultrafine Grained and Heterostructured Materials XIII, TMS Annual Meeting, Orlando, Florida, March 3-7, 2024.
175. Advanced Materials Characterization and Analysis Seminar, Shanghai, China, May 30, 2024.
176. Hierarchical Materials: Mechanical Design, Manufacturing, and Applications, 2024 Society of Engineering Science (SES) Annual Meeting, Hangzhou, China, Aug. 20-23, 2024.

Symposiums Organized:

1. Co-Organizer and Co-Chairman: Symposium on Nanocomposites and Multilayered Materials, Third International Conference on Composite Engineering, New Orleans, LA, July 21-27, 1996.
2. Co-Organizer, 1999 Meeting of Society of Engineering Science, Austin, TX, Oct. 25-27, 1999
3. Co-organizer and Session Chair, Novel Ceramics and Composites, The 24th Cocoa Beach Conference, Cocoa Beach, FL, Jan. 23-28, 2000.
4. Co-Organizer, Symposium on Microstructural & Mechanical Property Relationships in Advanced Composites, ASME 2000, Orlando, FL, Nov. 5-10, 2000.
5. Primary Organizer, Second International Symposium on Ultrafine Grained Materials, The 2002 TMS Annual Meeting, Seattle, WA, Feb. 17-21, 2002.
6. Organizer, Workshop on Nanostructured Materials Processed by SPD, Los Alamos National laboratory, Los Alamos, NM 87545, Feb. 22, 2002.
7. Primary Coordinator, Symposium on Severe Plastic Deformation, THERMEC'2003, Madrid, Spain, July 7-11, 2003.
8. Primary Organizer, Third International Symposium on Ultrafine Grained Materials, The 2004 TMS Annual Meeting, Charlotte, NC, March 16-20, 2004.
9. Director, NATO Advanced Research Workshop on Nanostructured Materials by High Pressure, Donetsk, Ukraine, Sept. 22-26, 2004.
10. Primary Organizer, The Langdon Symposium, Flow and Forming of Crystalline Materials (An Symposium

- Honoring Prof. Langdon on the Occasion of His 65th Birthday), The 2005 TMS Annual Meeting, San Francisco, CA, Feb. 13-17, 2005.
11. Primary organizer, Fourth International Symposium on Ultrafine Grained Materials, The 2006 TMS Annual Meeting, San Antonio, TX, March 12-16, 2006.
 12. Co-organizer, Processing and Mechanical Response of Engineering Materials, The 2006 TMS Annual Meeting, San Antonio, TX, March 12-16, 2006.
 13. Co-Coordinator, Symposium on Severe Plastic Deformation, THERMEC'2006, Vancouver, Canada, July 4-8, 2006.
 14. Co-Organizer, High Pressure-2006, Fundamentals and Applied Aspects, Sudak, Crimea, Ukraine, Sept. 17-23, 2006.
 15. Co-organizer, Mechanical Behaviors of Nanostructured Materials, in Honor of Carl Koch, The 2007 TMS Annual Meeting, Orlando, FL, Feb. 26-March 1, 2007.
 16. Co-organizer, Fifth International Symposium on Ultrafine Grained Materials, The 2008 TMS Annual Meeting, New Orleans, LA, March 9-13, 2008.
 17. Co-organizer, Mechanical Behaviors of Nanostructured Materials, The 2009 TMS Annual Meeting, San Francisco, CA, Feb. 15-19, 2009.
 18. Co-organizer, Sixth International Symposium on Ultrafine Grained Materials, The 2010 TMS Annual Meeting, Seattle, WA, Feb 14-18, 2010.
 19. Co-organizer, International Symposium on Advances in Nanostructured Materials and Applications, MS&T 2011, Columbus, Ohio, USA, Oct. 16-20, 2011.
 20. Primary Organizer, Bulk Metallic Glasses, Nanocrystalline Materials, and Ultrafine-Grained Materials, PRICM8, Waikiloa, Hawaii, Aug. 4-9, 2013.
 21. Co-organizer, Eighth International Symposium on Ultrafine Grained Materials, The 2014 TMS Annual Meeting, San Diego, CA, Feb 16-20, 2014.
 22. Co-organizer, 2014 TMS RF Mehl Medal Symposium on Frontiers in Nanostructured Materials and Their Applications, The 2014 TMS Annual Meeting, San Diego, CA, Feb 16-20, 2014.
 23. Primary Organizer, Gradient and Laminate Materials, 2015 MRS Fall Meeting, Boston, MA, Nov. 29-Dec. 4, 2015.
 24. Co-Organizer, Creep, Deformation and Nuclear Materials honoring Prof. K.L. Murty, Plasticity 2016, Big Island, Hawaii, Jan. 3-9, 2016.
 25. Co-Organizer, Mechanical Behavior of Nanostructured Materials honoring Prof. C.C. Koch, TMS Annual Meeting 2016, San Diego, CA, Feb. 26-March 2, 2017.
 26. Co-Organizer, Mechanical and Creep Behavior of Advanced Materials honoring Prof. K.L. Murty, TMS Annual Meeting 2016, San Diego, CA, Feb. 26-March 2, 2017.
 27. Primary Organizer, Multiscale Architected Materials (MAM II): Tailoring Mechanical Incompatibility for Superior Properties, TMS Annual Meeting 2016, San Diego, CA, Feb. 26-March 2, 2017.
 28. Mechanical Properties of Nanocrystalline Materials and High Entropy Alloys in honor of Prof. Carl Koch, Plasticity'18, San Juan, Puerto Rico, USA, Jan. 3-6, 2018.
 29. Heterogeneous and Gradient Materials (HGM III): Tailoring Mechanical Incompatibility for Superior Properties, TMS Annual Meeting 2019, San Antonio, TX, March 10-14, 2019.
 30. Gordon Research Conference-Heterogeneous Materials, Hong Kong, June 23-28, 2019.
 31. Primary Organizer, Heterostructured and Gradient Materials (HGMIV), TMS Annual Meeting 2021, Orlando, FL, March 14-18, 2021.
 32. Primary Organizer, First International Conference on Heterostructure Materials, Hong Kong, July 12-15, 2022.
 33. Heterostructured Materials: Fundamentals, Processing, Properties and Applications, 31st International Materials Research Conference, 2023, Cancun, Mexico, Aug. 13-18, 2023.
 34. Primary Organizer, Heterostructured and Gradient Materials (HGMV), TMS Annual Meeting 2023, San Diego, CA, March 19-23, 2023.
 35. Primary Organizer, Advanced Structural Materials Workshop, Hong Kong, Oct. 20, 2023.

Books Edited/Being Edited:

1. **Y.T. Zhu**, T.G. Langdon, R.S. Mishra, S.L. Semiatin, M.J. Saran, and T.C. Lowe, *Ultrafine Grained Materials II*, TMS, Warrendale, PA, 2002.
2. **Y.T. Zhu**, T.G. Langdon, R.Z. Valiev, S.L. Semiatin, D.H. Shin, and T.C. Lowe, *Ultrafine Grained Materials III*, TMS, Warrendale, PA, 2004.
3. **Y.T. Zhu**, and V. Varyukhin, *Nanostructured Materials by High-Pressure Severe Plastic Deformation*, Springer, Dordrecht, The Netherlands, 2005.
4. M.J. Zehetbauer, **Y.T. Zhu**, *Bulk Nanostructured Materials*, Wiley-VCH, Weinheim, Germany, 2006.
5. **Y.T. Zhu**, T.G. Langdon, Z. Horita, M.J. Zehetbauer, S.L. Semiatin, and T.C. Lowe, *Ultrafine Grained Materials IV*, TMS, Warrendale, PA, 2006.
6. I. Charit, Y.T. Zhu, S.A. Maloy, and P.K. Liaw, *Mechanical and Creep Behavior of Advanced Materials*, TMS/Springer, Warrendale, PA, 2016.

Guest Editors for Special Journal Issues:

1. **Y.T. Zhu**, P.B. Berbon, A.H. Chokshi, Z. Horita, S.V. Raj, K. Xia, The Langdon Symposium: Flow and Forming of Crystalline Materials, *Materials Science and Engineering A*, **410-411**, 2005.
2. J. Schneider, R.S. Mishra, T.R. Bieler, **Y.T. Zhu**, K.B. Morsi, V.L. Acoff, E.M. Taleff, R.Z. Valiev, Processing and Mechanical Response of Engineering Materials in honor of Prof. A.K. Mukherjee on the occasion of his 70th birthday, *Materials Science and Engineering A*, **463**, 2007.
3. **Y.T. Zhu**, Z.L. Wang, T.G. Langdon, and B.C. Carter, Nanostructured Materials – Processing, Structures, Properties and Applications, a special issue of *Journal of Materials Science*, **42 (#5)**, 2007.
4. X.H. Zhang, C.T. Liu, J.M. Rigsbee, C. Suryanarayana, H.Y. Wang, **Y.T. Zhu**, and D.L. Zhang, Mechanical Behavior of Nanostructured Materials, in Honor of Carl Koch, *Materials Science and Engineering A*, **493**, 2008.
5. **Y.T. Zhu**, X.Z. Liao, Z.W. Shan, T.G. Langdon, Y. Estrin, R.Z. Valiev, and T.C. Lowe, *Ultrafine Grained Materials*, a special issue of *Journal of Materials Science*, **43 (#23-24)**, 2008.
6. R.Z. Valiev, T.G. Langdon, I.V. Alexandrov, **Y.T. Zhu**, Y. Estrin, and G. Kostorz, Bulk nanostructured Materials, a special issue of *Materials Science and Engineering A*, **505**, 2009.
7. X.H. Zhang, X.D. Li, N. Mara, **Y.T. Zhu**, A. Minor, and R. Huang, Mechanical Behavior of Nanostructured Materials, a special issue of *Metallurgical and Materials Transactions A*, **41A (#4)**, 2010.
8. **Y.T. Zhu**, S.N. Mathaudhu, M. Göken, T.G. Langdon, T.C. Lowe, S.L. Semiatin, N. Tsuji, Y.H. Zhao, *Ultrafine Grained Materials*, a special issue of *Journal of Materials Science*, **45 (#17)**, 2010.
9. S.N. Mathaudhu, X.X. Huang, Y.S. Kim, T.G. Langdon, T.C. Lowe, R.Z. Vaiev, X.L. Wu, M.J. Zehetbauer, **Y.T. Zhu**, *Ultrafine Grained Materials*, a special issue of *Journal of Materials Science*, **47 (#22)**, 2012.
10. **Y.T. Zhu**, *Ultrafine Grained Materials*, a special issue of *Journal of Materials Science*, **48 (#13)**, 2013.

Books

1. X.L. Wu and Y.T. Zhu, *Heterostructured Materials: Novel Materials with Unprecedented Mechanical Properties*, Jenny Stanford Publishing, Singapore, 2022.
2. Y.T. Zhu and X.L. Wu, *Introduction to Heterostructured Materials*, Elsevier, Amsterdam, Netherland, 2023. ISBN:978-0-323-99326-5. Textbook.

Book Chapters:

1. **Y.T. Zhu** and D.P. Butt, “Nanomaterials by Severe Plastic Deformation,” *Encyclopedia of Nanoscience and Nanotechnology*, American Scientific Publishers, Stevenson Ranch, CA, volume 6, 2004, pp. 843-856.
2. L.L. Shaw and **Y.T. Zhu**, “Surface Deformation,” in *Materials Processing Handbook*, Edited by M.T. Powers, E.J. Lavernia, J.R. Groza, and J.F. Shackelford, CRC Press LLC, Boca Raton, FL, USA, 2007, Chapter 31, pp. 31-1 to 31-16. DOI: 10.1201/9781420004823.ch31
3. **Y.T. Zhu**, B. Han and E.J. Lavernia “Deformation Mechanisms of Nanostructured Materials,” in *Bulk*

Nanostructured Materials, Wiley-VCH, Weinheim, Germany, 2009, pp. 89-108.

4. B. Han, J. Ye, A.P. Newberry, **Y.T. Zhu**, J.M. Schoenung, and E.J. Lavernia, "Bulk Nanostructured Materials from Ball Milling and Consolidation," in *Bulk Nanostructured Materials*, Wiley-VCH, Weinheim, Germany, 2009, pp.273-291.
5. I.J. Beyerlein, P.K. Porwal, **Y.T. Zhu**, X.F. Xu, and S.L. Phoenix, "Probabilistic strength of carbon nanotube yarns," in *Advances in Mathematical Modeling and Experimental Methods for Materials and Structures. The Jacob Aboudi Volume*. 2009.
6. X. Wang, P.D. Bradford, Q.W. Li, and Y.T. Zhu, "Aligned Carbon Nanotube Composite Prepregs," in *Nanotube Superfiber Materials: Changing Engineering Design*, edited by M.J. Schulz, V.N. Shanov, and Z.Z. Yin, Elsevier, 2014, pp. 649-670.
7. X. Wang, J.T. Di, Q.W. Li, P.D. Bradford, and Y.T. Zhu, "High Performance Composite Based on Dry-Processable Multi-walled Carbon nanotubes," in *Porous Lightweight Composites Reinforced with Fbrous Structures*, edited by Y.Q. Jiang, J.Y. YU, H.L. Xu, B.Z. Sun, Springer.
8. X.L. Ma and Y.T. Zhu, "Deformation Twinning in Nanocrystalline Metals," Reference Module in Materials Science and Materials Engineering, edited by Saleem Hashmi, Oxford:Elsevier, 2016, pp.1-19.
9. Y.T. Zhu and R.Z. Valiev, "Mechanical Behavior of Bulk Nanostructured and Heterostructured Metals," in *Comprehensive Structural Integrity*, 2nd Ed., Elsevier, Oxford, UK, (Chapter 0073), 2022, pp.163-195.

Book Review:

1. **Y.T. Zhu**, Book Review on "Plastic Deformation in Nanocrystalline Materials, by . Yu. Gutkin and I. A. Ovid'ko." *Advanced Materials*, **17**, 2513-2514 (2005).

Patents:

1. **Y.T. Zhu**, P.S. Baldonado, J.F. Bingert, T.G. Holesinger, and D.E. Peterson, "Compressive Annealing of BSCCO 2223 Superconductive Tapes." US Patent #: 6,195,870.
2. **Y.T. Zhu**, T.C. Lowe, H. Jiang and J. Huang, "Method for Producing Ultrafine-Grained Materials Using Repetitive Corrugation and Straightening," US Patent #: 6,197,129.
3. **Y.T. Zhu**, T.C. Lowe, R.Z. Valiev, V.V. Stolyarov, V.V. Latysh, G.I. Raab, "Ultrafine-Grained Titanium for Medical Implants," US Patent #: 6,399,215.
4. A. Serquis, **Y.T. Zhu**, X.Z. Liao, D.E. Peterson and F.M. Mueller, "Synthesis of Magnesium Diboride by Magnesium Vapor Infiltration Process (MVIP)," US Patent #: 6,511,943.
5. **Y.T. Zhu**, T.C. Lowe, R.Z. Valiev, and G.J. Raab, "Continuous Equal Channel Angular Extrusion," US Patent #: 7,152,448.
6. Y.H. Zhao and **Y.T. Zhu**, "Preparation of Nanostructured Materials Having Improved Ductility," US Patent #: 7,699,946.
7. H.S. Peng, **Y.T. Zhu** and Q.X. Jia, "Fibrous Composites Comprising Carbon Nanotube and Silica," US Patent #: 8,034,448.
8. Y.T. Zhu, Q. Zhang, N.N. Liang, X.G. Liu, and J.T. Wang, "Surface Nanocrystallization Equipment for Accelerated Ball Peening," Chinese Patent # ZL 2011 1 0458558. 0.
9. **Y.T. Zhu**, P.N. Arendt, X.F. Zhang, Q.W. Li, L. Fu, and L.X. Zheng, "Carbon Nanotube Fiber from Wetted Ribbon," US Patent #: 8,709,372.
10. P.N. Arent, **Y.T. Zhu**, X.F. Zhang, I.O. Usov, "Increasing the specific strengths of CNT fibers," US Patent#: #: 9,180,443.
11. **Y.T. Zhu**, A. Serquis, D.L. Hammon, L. Civale, X.Z. Liao, F.M. Mueller, D.E. Peterson, V.F. Nesterenko, and Y. Gu, "Processing of High Density MgB₂ Wires and Tapes by Hot Isostatic Pressing," in review, Docket No. S-99,947.
12. **Y.T. Zhu**, R.Z. Valiev, V.V. Stolyarov, and Yu.R. Kobolov, "Processing Nanostructured Ti Foil by ECAP and Cold Rolling," in review, Docket No. S-100,547.
13. L.X. Zheng and **Y.T. Zhu**, M.J. O'Connell, J. Liu, "Synthesis of Continuous Carbon Nanotubes via Catalytic Chemical Vapor Deposition," in review, Docket No. S-102.398.

14. **Y.T. Zhu**, "Preparation of Fibers from a Supported Array of Nanotubes," in review, Docket No. S-104.824.
15. L.X. Zheng and **Y.T. Zhu**, "Preparation of Pile of Carbon Nanotubes and Fiber Therefrom," in review, Docket No. S-104,824.
16. Qingwen Li, **Y.T. Zhu**, P.N. Arendt, R. DePaula, R.J. Groves, "Long Carbon Nanotube Arrays for Spinning," in review, Docket No. S-109,040.
17. **Y.T. Zhu**, P.N. Arent, Q.W. Li, X.F. Zhang, "Arrays of Long Carbon Nanotubes for Fiber Spinning," in review.
18. P.N. Arent, **Y.T. Zhu**, I.O. Usov, and R.F. Depaula, "Preparation of Array of Long Carbon Nanotubes and Fibers Therefrom," in review.
19. **Y.T. Zhu** and C. Sheehan, "A Method for High-Speed Fabrication of Aligned Carbon Nanotube Composites," NCSU invention disclosure No. 09-015, in review.
20. H.S. Peng, **Y.T. Zhu** and Q.X. Jia, "Carbon Microtubes," in review.
21. P. Bradford and **Y.T. Zhu**, "Method for Creating Aligned Films/Papers of Ultra-Long Carbon Nanotubes Using Shear Pressing," NCSU disclosure # 10027.
22. H.S. Peng, D.E. Peterson, Y.T. Zhu and Q.X. Jia, "Carbon Nanotube/Polydiacetylene Composites," Application # 61/275,133.
23. W. Liu, X. Wang, P. Bradford and **Y.T. Zhu**, "Carbon Nanotube Composites and Methods for Fabricating Same," NCSU disclosure # 11014. Application # 61482691.
24. **Y.T. Zhu**, X. Wang, C.D. Page, L.W. Zhang, "Low Twist CNT Yarns for High Performance Textile and Composites," NCSU disclosure # 13087.
25. W.W. Jian, S.N. Mathaudhu, **Y.T. Zhu**, "Nano-spaced Stacking Faults: a New Strengthening Mechanism for Metals and Alloys to Achieve Ultrahigh Strength and Good Ductility," NCSU disclosure # 13140.
26. L.W. Zhang, X. Wang, Y.Y. Zhang, Q.W. Li, Y.T. Zhu, "Processing CNT Films and Composites using Micro-combing to Straighten CNTs," NCSU Disclosure # 15169.

Journal Publications: citation# as of July 11, 2024: Google Scholar 62268, H index 128; ISI 47214, H index 114; Scopus 52714, H index 120.

(at 494 total, including 3 in Nature Materials, 3 in PNAS, 1 in Nature Nanotechnology, 3 in Nature Communication, 1 in Science Advance, 3 in Prog. Mater. Sci., 7 in Phys. Rev. Lett., 1 in J. Mech. Phys. Solids, 4 in Materials Today, 21 in Mater. Res. Lett., 10 in Adv. Mater., 2 in J. Am Chem. Soc., 5 in ACS Nano, 3 in Small, 36 in Appl. Phys. Lett., 2 in Phys. Rev. B, 9 in J. Appl. Phys, 29 in Acta Mater., 35 in Scripta Mater., 11 in Metall. Mater. Trans.)

1989-1995

1. **Y.T. Zhu**, B.L. Zhou, G.H. He and Z.G. Zheng, "A Statistical Theory of Composite Materials Strength," *J. Composite Materials*, **23**, 280-87 (1989).
2. **Y.T. Zhu** and J.H. Devletian, "Determination of Equilibrium Solid-phase Transition Temperatures Using DTA," *Metallurgical Transaction*, **22A**, 1993-98 (1991).
3. **Y.T. Zhu** and J.H. Devletian, "Precise Determination of Isomorphous and Eutectoid Transformation Temperature in Binary and Ternary Zr Alloys," *J. Mater. Sci.*, **26**, 6218-22 (1991).
4. **Y.T. Zhu** and J.H. Devletian, "Precise DTA Testing of Highly Reactive Alloys," *Advanced Materials & Processes*, October 1991, p. 51-53.
5. **Y.T. Zhu** and J.H. Devletian, "Thermal Stress and Strain Effects on Phase Transition Temperatures in Differential Thermal Analysis Testing," *Metallurgical Transaction*, **23A**, 451-55 (1992).
6. **Y.T. Zhu** and G. Zong, "On the Application of the Statistical Strength Model of Fiber-Reinforced Composites," *J. Composite Materials*, **27**, 944-59 (1993).
7. A. Manthiram and **Y.T. Zhu**, "Chemistry of Electron Doped $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$ Superconductors," *J. Electronic Materials*, **22**, 1195-98 (1993).
8. **Y.T. Zhu**, J.H. Devletian and A. Manthiram, "Application of Differential Thermal Analysis in Phase Diagram Determination," *J. Phase Equilibria*, **15**, 37-41 (1994).
9. **Y.T. Zhu** and A. Manthiram, "Role of Bond Length Mismatch in $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$," *Physical Review B*, **49**, 6293-98 (1994).

10. **Y.T. Zhu** and A. Manthiram, "A New Route for the Synthesis of Tungsten Oxide Bronzes," *J. Solid State Chemistry*, **110**, 187-89 (1994).
11. **Y.T. Zhu** and A. Manthiram, "Role of Oxygen in $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$ Superconductors," *Physica C*, **224**, 256-62 (1994).
12. A. Manthiram and **Y.T. Zhu**, "On the Absence of Superconductivity in $\text{Gd}_{2-x}\text{Ce}_x\text{CuO}_4$," *Physica C*, **226**, 165-69 (1994).
13. J.P. Zhou, S.M. Savoy, J. Zhao, D.R. Riley, **Y.T. Zhu**, A. Manthiram and J. T. McDevitt, "Chemically Tailored Corrosion Resistant High- T_C Phases," *J. American Chemical Society*, **116**, 9389-90 (1994).
14. **Y.T. Zhu** and A. Manthiram, "A New Route for the Synthesis of WC-Co Nanocomposites," *J. American Ceramic Society* **77**, 2777-78 (1994).
15. **Y.T. Zhu**, G. Zong, A. Manthiram and Z. Eliezer, "Strength Analysis of Random Short Fiber Reinforced Metal Matrix Composite Materials," *J. Mater. Sci.*, **29**, 6281-86 (1994).
16. A. Manthiram, A. Dananjay and **Y.T. Zhu**, "New Route to Reduced Transition Metal Oxides," *Chemistry of Materials*, **6**, 1601-02 (1994).
17. **Y.T. Zhu** and A. Manthiram, "A Thermogravimetric Study of the Influence of Internal Stress on Oxygen Variations in $\text{Ln}_{2-x}\text{Ce}_x\text{CuO}_4$," *J. Solid State Chemistry*, **114**, 491-98 (1995).
18. **Y.T. Zhu**, J.H. Devletian, S.J. Chen and A. Manthiram, "On the Nonuniform Distributions of Temperature and Thermal Stress in DTA Testing," *J. Testing and Evaluation* **23**, 63-66 (1995).
19. J.P. Zhou, S.M. Savoy, R.K. Lo, J. Zhao, M. Arendt, **Y.T. Zhu**, A. Manthiram and J.T. McDevitt, "Improved Corrosion Resistance of Cation Substituted $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$," *Appl. Phys. Lett.*, **66**, 2900-02 (1995).
20. **Y.T. Zhu**, Y.P. Gao, J.H. Devletian and A. Manthiram, "Differential Thermal Analysis of Solid Zirconium," *J. Testing and Evaluation*, **23**, 431-35 (1995).

1996-1998

21. W.R. Blumenthal, **Y.T. Zhu**, T.C. Lowe, and R.J. Asaro, "Deformation State Effects on the J_C of BSCCO Tapes," *Physica C*, **260**, 33-40 (1996).
22. **Y.T. Zhu** and A. Manthiram, "Influence of Processing Parameters on the Formation of WC-Co Nanocomposite Powder Using Polymer as Carbon Source," *Composites Part B*, **27**, 407-413 (1996).
23. **Y.T. Zhu**, W.R. Blumenthal, and T.C. Lowe, "Determination of *Non-Symmetric* 3-D Fiber Orientation and Average Fiber Length in Short-Fiber Composites," *J. Composite Materials*, **31**, 1287-1301 (1997).
24. B.R. Mattes, H.L. Wang, D. Yang, **Y.T. Zhu**, W. R. Blumenthal, and M. Hundley, "Formation of conductive polyaniline fibers derived from highly concentrated emeraldine base solutions," *Synthetic Metals*, **84**, 45-49 (1997).
25. **Y.T. Zhu**, W.R. Blumenthal, S.T. Taylor, T.C. Lowe and B.L. Zhou, "Analysis of Size Dependence of Ceramic Fiber and Whisker Strength," *J. American Ceramic Society*, **80**, 1447-52 (1997).
26. **Y.T. Zhu**, W.R. Blumenthal, and T.C. Lowe, "The Tensile Strength of Short Fiber-Reinforced Composites," *J. Mater. Sci.*, **32**, 2037-43 (1997).
27. **Y.T. Zhu**, S.T. Taylor, M.G. Stout, D.P. Butt, W.R. Blumenthal, and T.C. Lowe, "On the Statistical Strength of Nicalon Fibers and its Characterization," *Ceramic Engineering and Science*, **18**, 119-26 (1997).
28. **Y.T. Zhu**, P.S. Baldonado, E.J. Peterson, D.E. Peterson, and F.M. Mueller, "Powder Diffraction Data of $\text{SmBa}_4\text{Cu}_3\text{O}_{8.5+d}$," *Powder Diffraction*, **12**, 242-44 (1997).
29. **Y.T. Zhu**, T.C. Lowe and R.J. Asaro, "Assessment of the Theoretical Basis of the *Rule of Additivity* for the Nucleation Incubation Time during Continuous Cooling," *J. Applied Physics*, **82**, 1129-37 (1997).
30. **Y.T. Zhu**, S.T. Taylor, M.G. Stout, D.P. Butt, and T.C. Lowe, "Kinetics of Thermal, Passive Oxidation of Nicalon Fibers," *J. American Ceramic Society*, **81**, 655-60 (1998).
31. **Y.T. Zhu**, D.P. Butt, S.T. Taylor and T.C. Lowe, "Evaluation of a Modified Weibull Distribution in Characterizing the Strength of Ceramic Fibers and Whiskers with Varying Diameters," *J. Testing and Evaluation*, **26**, 144-150 (1998).
32. S.T. Taylor, **Y.T. Zhu**, W.R. Blumenthal, M.G. Stout, D.P. Butt, and T.C. Lowe, "Characterization of Nicalon Fibers with Varying Diameters. Part I: Strength and Fracture Studies," *J. Mater. Sci.*, **33**, 1465-73 (1998).
33. **Y.T. Zhu**, S.T. Taylor, M.G. Stout, D.P. Butt, W.R. Blumenthal, and T.C. Lowe, "Characterization of Nicalon Fibers with Varying Diameters. Part II: Modified Weibull Distribution," *J. Mater. Sci.*, **33**, 1475-80 (1998).

34. **Y.T. Zhu**, P.S. Baldonado, E.J. Peterson, Y.S. Park, A. Manthiram, D.P. Butt, D.E. Peterson, F.M. Mueller, "Variation of Oxygen Content and Crystal Chemistry of $\text{YBa}_4\text{Cu}_3\text{O}_{8.5+d}$," *Physica C*, **298**, 29-36 (1998).
35. I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, and R.Z. Valiev, "Severe plastic deformation: A new technique for powder consolidation and grain size refinement," *Powder Metallurgy*, **41**, 11-13 (1998). **Invited contribution.**
36. I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, R.K. Islamgaliev, and R.Z. Valiev, "Consolidation of Nanometer Sized Powders Using Severe Plastic Torsional Straining," *NanoStructured Materials*, **10**, 45-54 (1998).
37. I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, R.K. Islamgaliev, and R.Z. Valiev, "Microstructure and Properties of Nanocomposites Obtained through SPTS-Consolidation of Powders," *Metallurgical and Materials Transactions*, **29A**, 2253-60 (1998).
38. **Y.T. Zhu**, E.J. Peterson, P.S. Baldonado, J.Y. Coulter, D.E. Peterson, and F.M. Mueller, "Synthesis and Characterization of the New Compound $\text{EuBa}_4\text{Cu}_3\text{O}_{8.5+d}$," *J. Physics and Chemistry of Solids*, **59**, 1331-36 (1998).
39. **Y.T. Zhu**, E.J. Peterson, P.S. Baldonado, J.Y. Coulter, D.E. Peterson, and F.M. Mueller, "Crystal Structure and Chemistry of Four New $\text{RBa}_4\text{Cu}_3\text{O}_{8.5+d}$ Compounds," *J. Alloys and Compounds*, **281**, 137-45 (1998).
40. **Y.T. Zhu**, J.A. Valdez, N. Shi, M.L. Lovato, M.G. Stout, S. Zhou, B.R. Blumenthal, and T.C. Lowe, "A Composite Reinforced with Bone-Shaped Short Fibers," *Scripta Mater.*, **38**, 1321-25 (1998).

1999-2000

41. S.T. Taylor, **Y.T. Zhu**, D.P. Butt, M.G. Stout, W.R. Blumenthal, and T.C. Lowe, "New Perspectives on the Fracture of Nicalon Fibers," *Special Technical Publication (STP) 1332*, ASTM, 393-403 (1999).
42. **Y.T. Zhu**, E.J. Peterson, P.S. Baldonado, J.Y. Coulter, D.E. Peterson, and F.M. Mueller, "Synthesis and Crystal Chemistry of the New Compounds $\text{GdBa}_4\text{Cu}_3\text{O}_{8.5+d}$, and $\text{DyBa}_4\text{Cu}_3\text{O}_{8.5+d}$," *J. Materials Research*, **14**, 334-39 (1999).
43. **Y.T. Zhu**, J.A. Valdez, I.J. Beyerlein, S. Zhou, C. Liu, M.G. Stout, D.P. Butt, and T.C. Lowe, "Mechanical Properties of Bone-Shaped-Short-Fiber Reinforced Composites," *Acta Mater.*, **47**, 1767-81 (1999).
44. V.V. Stolyarov, L.O. Shestakova, **Y.T. Zhu** and R.Z. Valiev, "Formation of Metastable States in Nanostructured Commercial Al- and Ti-Based Alloys by SPTS Technique," *NanoStructured Materials*, **12**, 923-26 (1999).
45. **Y.T. Zhu**, P.S. Baldonado, J.F. Bingert, T.G. Holesinger, J.O. Willis, and D.E. Peterson, "Compressive Anneal Processing (CAP) of $\text{Bi}2223$ Superconducting Tapes," *Superconductor Sci. & Tech.* **12**, 640-44 (1999).
46. H. Jiang, **Y.T. Zhu**, and D.P. Butt, "Oxidation Kinetics of Hexagonal-shaped Single Crystal Si Whiskers," *J. American Ceramic Society*, **82**, 2791-95 (1999).
47. **Y.T. Zhu**, M. Stan, S.D. Conzone, and D.P. Butt, "Thermal Oxidation Kinetics of MoSi_2 -Based powders," *J. American Ceramic Society*, **82**, 2785-90 (1999).
48. V.V. Stolyarov, **Y.T. Zhu**, T.C. Lowe, and R.Z. Valiev, "A Two-Step SPD Processing of Ultrafine-Grained Titanium," *NanoStructured Materials*, **11**, 947-54 (1999).
49. H.L. Wang, R.J. Romero, B.R. Mattes, **Y.T. Zhu**, and M.J. Winokur, "Effect of Processing Conditions on the Properties of High Molecular Weight Conductive Polyaniline Fibers," *J. Polymer Science Part B: Polymer Physics*, **38**, 194-204 (2000).
50. V.V. Stolyarov, **Y.T. Zhu**, T.C. Lowe, and R.Z. Valiev, "Processing Nanocrystalline Ti and its Nanocomposites from Micrometer-Sized Ti Powder Using High Pressure Torsion," *Mater. Sci. Eng.*, **A282**, 78-85(2000).
51. H.G. Jiang, J.A. Valdez, **Y.T. Zhu**, I.J. Beyerlein and T.C. Lowe, "The Strength and Toughness of Cement Reinforced with Bone-Shaped Steel Wires," *Composite Sci. and Tech.*, **60**, 1753-61(2000).
52. H. Jiang, **Y.T. Zhu**, D.P. Butt, I.V. Alexandrov, and T.C. Lowe, "Microstructural Evolution, Microhardness and Thermal Stability of HPT-Processed Cu," *Mater. Sci. Eng.*, **A290**, 128-38 (2000).
53. **Y.T. Zhu** and T.C. Lowe, "Application of, and precautions for use of, the rule of additivity in phase transformation," *Metallurgical and Materials Transactions B*, **31**, 675-82 (2000).
54. **Y.T. Zhu** and T.C. Lowe, "Observations and Issues on Mechanism of Grain Refinement During ECAP Process," *Mater. Sci. Eng.*, **A291**, 46-53 (2000).
55. J. Huang and **Y.T. Zhu**, "Advances in the Synthesis and Characterization of Boron Nitride," *Defects and Diffusions Forum, Defects and Diffusion in Ceramics*, Scitech Pub. Inc., pp 1-32 (2000).

2001-2002

56. V.V. Stolyarov, **Y.T. Zhu**, I.V. Alexandrov, T.C. Lowe and R.Z. Valiev, "Influence of ECAP Routes on the Microstructure and Properties of Pure Ti," *Mater. Sci. Eng.*, **A299**, 59-67 (2001).

57. V.V. Stolyarov, **Y.T. Zhu**, T.C. Lowe and R.Z. Valiev, "Microstructure and Properties of Pure Ti Processed by ECAP and Cold Extrusion," *Mater. Sci. Eng.*, **A303**, 82-89 (2001).
 58. J.Y. Huang, **Y.T. Zhu** and H. Mori, "Structure and Phase Characteristics of Amorphous Boron-Carbon-Nitrogen under High Pressure and High Temperature," *J. Materials Research*, **16**, 1178-84 (2001).
 59. J.Y. Huang, **Y.T. Zhu**, H.G. Jiang and T.C. Lowe, "Microstructures and Dislocation Configurations in Bulk Nanostructured Cu Processed by Repetitive Corrugation and Straightening," *Acta Mater.*, **49**, 1497-1505 (2001).
 60. **Y.T. Zhu**, H. Jiang, J. Huang and T.C. Lowe, "A New Route To Bulk Nanostructured Metals," *Metallurgical and Materials Transactions*, **32A**, 1559-62 (2001).
 61. **Y.T. Zhu**, I.J. Beyerlein, J.A. Valdez, and T.C. Lowe, "Fracture Toughness of a Composite Reinforced with Bone-Shaped Short Fibers," *Mater. Sci. Eng.*, **A317**, 93-100 (2001).
 62. D. Jia, Y.M. Wang, K.T. Ramesh E. Ma, **Y.T. Zhu**, and R.Z. Valiev, "Deformation behavior of ultrafine-grained titanium," *Appl. Phys. Lett.*, **79**, 611-13 (2001).
 63. I.J. Beyerlein, **Y.T. Zhu**, and S. Mahesh, "On the Influence of Fiber Shape in Bone-Shaped Short Fiber Composites," *Composite Sci. and Tech.*, **61**, 1341-57 (2001).
 64. V.V. Stolyarov, **Y.T. Zhu**, T.C. Lowe and R.Z. Valiev, "Microstructures and Properties of Ultrafine-Grained Pure Ti Processed by ECAP and Cold Deformation," *J. Nanoscience and Nanotechnology*, **1**, 237-42 (2001).
 65. A. Serquis, **Y.T. Zhu**, J.Y. Coulter, D.E. Peterson, and F.M. Mueller, "Effect of Lattice Strain and Defects on the Superconductivity of MgB₂," *Appl. Phys. Lett.*, **79**, 4399-4401 (2001).
 66. **Y.T. Zhu**, L. Shu, E.J. Peterson, D.E. Peterson, and F.M. Mueller, "Rietveld Refinement of Crystal Chemistry of RBa₄Cu₃O_{8.5+δ} R = Rare Earth)," *J. Physics and Chemistry of Solids*, **63**, 23-29 (2002).
 67. R.Z. Valiev, I.V. Alexandrov, **Y.T. Zhu**, T.C. Lowe, "Paradox of strength and ductility in metals processed by severe plastic deformation," *J. of Materials Research*, **17**, 5-8 (2002).
 68. **Y.T. Zhu** and I.J. Beyerlein, "Bone-Shaped Short Fiber Composites-An Overview," *Mater. Sci. Eng. A*, **A326**, 208-227 (2002).
 69. J. Huang, B. Park, D. Jan, **Y.T. Zhu** and Q. Jia, "High-Resolution Transmission Electron Microscopy Study of Defects and Interfaces in Epitaxial TiO₂ films on Sapphire and LaAlO₃ Substrate" *Philosophical Magazine A*, **82**, 735-749 (2002).
 70. **Y.T. Zhu**, L. Shu and D.P. Butt, "Kinetics and Products of MoSi₂ Powder Oxidation," *J. American Ceramic Society*, **85**, 507-509 (2002).
 71. J.Y. Huang and **Y.T. Zhu**, "Atomic-Scale Structural Investigation on the Nucleation of Cubic Boron Nitride from Amorphous Boron Nitride under High Pressures and Temperatures," *Chemistry of Materials*, **14**, 1873-1878 (2002).
 72. R.F. Klie, J.C. Idrobo, N.D. Browning, A.C. Serquis, **Y.T. Zhu**, X.Z. Liao and F.M. Mueller, "Observation of Coherent Oxide Precipitates in Polycrystalline MgB₂," *Appl. Phys. Lett.*, **80**, 3970-72 (2002).
 73. X.Z. Liao, A.C. Serquis, **Y.T. Zhu**, J.Y. Huang, D.E. Peterson, and F.M. Mueller, "Controlling flux pinning precipitates during MgB₂ synthesis," *Appl. Phys. Lett.*, **80**, 4398-4400 (2002).
 74. A. Serquis, R.K. Schulze, **Y.T. Zhu**, S.S. Indrakanti, Vitali F. Nesterenko, D.E. Peterson and F.M. Mueller, "Degradation of MgB₂ under Ambient Environment," *Appl. Phys. Lett.* **80**, 4401-4403 (2002).
 75. A. Serquis, X.Z. Liao, **Y.T. Zhu**, J.Y. Coulter, J.Y. Huang, J.O. Willis, D.E. Peterson, S.S. Indrakanti, and F. M. Mueller, "Influence of microstructures and Crystalline defects on the superconductivity of MgB₂," *J. Applied Physics*, **92**, 351-356 (2002).
 76. Y. Zhao, D. He, L. Daemen, J.Y. Huang, T. Shen, R. Schwarts, **Y.T. Zhu**, D. Bish, J. Zhang, B. Li, G. Shen, J. Qian, W. Zerda, "Superhard BC₂N Material Bulks Synthesized at High Pressure-Temperature Conditions," *J. of Materials Research*, **17**, 3139-45 (2002).
 77. D.H. Shin, I. Kim, J. Kim and **Y.T. Zhu**, "Shear Strain Accommodation during Severe Plastic Deformation of Titanium Using Equal Channel Angular Pressing," *Mater. Sci. Eng.* **A334**, 239-245 (2002).
- 2003**
78. J.Y. Huang, **Y.T. Zhu**, X.Z. Liao, I.J. Beyerlein, M.A. Bourke and T.E. Mitchell, "Microstructure of cryogenic treated M₂ Tool Steel," *Mater. Sci. Eng. A*, **A339**, 241-244 (2003).
 79. V.V. Stolyarov, **Y.T. Zhu**, I.V. Alexandrov, T.C. Lowe and R.Z. Valiev, "Grain Refinement and Properties of Pure Ti Processed by Warm ECAP and Cold Rolling" *Mater. Sci. Eng. A*, **A343**, 43-50 (2003).

80. I. Kim, J. Kim, D.H. Shin, X.Z. Liao and **Y.T. Zhu**, "Deformation Twins in Pure Titanium Processed by Equal Channel Angular Pressing," *Scripta Mater.*, **48**, 813-17 (2003).
81. **Y.T. Zhu** and I.J. Beyerlein, "Issues on Bone-shaped Short Fiber Composites and Future R&D Directions," *J. Advanced Materials*, **35**, 51-60 (2003). **Invited contribution.**
82. X.Z. Liao, A. Serquis, Q.X. Jia, D.E. Peterson, **Y.T. Zhu**, and H.F. Xu, "Effect of catalyst composition on carbon nanotube growth," *Appl. Phys. Lett.* **82**, 2694-96 (2003).
83. J. He, K.H. Chung, X.Z. Liao, **Y.T. Zhu**, and E.J. Lavernia. "Mechanical Milling Induced Deformation Twinning in FCC Materials with High Stacking Fault Energy," *Metallurgical and Materials Transactions* **34A**, 707-712 (2003).
84. A.C. Serquis, L. Civale, D.L. Hamonn, J.Y. Coulter, X.Z. Liao, **Y.T. Zhu**, D.E. Peterson, and F.M. Mueller, "Microstructure and high critical current of powder in tube MgB₂" *Appl. Phys. Lett.* **82**, 1754-1756 (2003).
85. A. Serquis, L. Civale, D.L. Hammon, J.Y. Coulter, X.Z. Liao, **Y.T. Zhu**, M. Jaime, D.E. Peterson, and F.M. Mueller, V.F. Nesterenko and Y. Gu, "Hot isostatic pressing of powder in tube MgB₂ wires," *Appl. Phys. Lett.* **82**, 2847-2849 (2003).
86. J. Gubicza, I.C. Dragomir, G. Ribárik, **Y.T. Zhu**, R.Z. Valiev and T. Ungár, "Characterization of Microstructure of severely deformed titanium by X-ray diffraction profile analysis," *Mater. Sci. Forum* **414-415**, 229-234 (2003).
87. **Y.T. Zhu**, Yu.R. Kobolov, G.P. Grabovetskaya, V.V. Stolyarov, N.V. Girsova, and R.Z. Valiev, "Microstructures and Properties of Ultrafine-grained Ti Foil processed by ECAP and Cold Rolling," *J. Mater. Research* **18**, 1011-1016 (2003).
88. J.Y. Huang, X.Z. Liao, **Y.T. Zhu**, F. Zhou, and E.J. Lavernia, "Grain Boundary Structures of Nanostructured Cu Processed by Cryomilling," *Phil. Mag.* **83**, 1407-1419 (2003).
89. F. Zhou, X.Z. Liao, **Y.T. Zhu**, S. Dallek, and E.J. Lavernia, "Microstructural Evolution during Recovery and Recrystallization of a Nanocrystalline Al-Mg Alloy Prepared by Cryogenic Ball Milling," *Acta Mater.* **51**, 2777-2791 (2003).
90. X.Z. Liao, A.C. Serquis, **Y.T. Zhu**, J.Y. Huang, D.E. Peterson, F.M. Mueller, and H.F. Xu, "Mg(B,O) precipitation in MgB₂," *J. Applied Physics* **93**, 6208-6215 (2003).
91. T.C. Lowe and **Y.T. Zhu**, "Commercialization of Nanostructured Metals Produced by Severe Plastic Deformation Processing," *Advanced Engineering Materials*, **5**, 373-378 (2003) (**Invited contribution**).
92. A.T. Findikoglu, A. Serquis, L. Civale, X.Z. Liao, **Y.T. Zhu**, M. Hawley, F.M. Mueller, V.F. Nesterenko, "Microwave Performance of Fully-Dense Bulk MgB₂" *Appl. Phys. Lett.* **83**, 108-110 (2003).
93. X.Z. Liao, A. Serquis, **Y.T. Zhu**, L. Civale, D.L. Hammon, D.E. Peterson, F.M. Mueller, V.F. Nesterenko, and Y. Gu, "Defect Structures in MgB₂ Wires Introduced by Hot Isostatic Pressing," *Superconductor Science and Technology* **16**, 799-803 (2003).
94. X.Z. Liao, F. Zhou, E.J. Lavernia, S.G. Srinivasan, M.I. Baskes, D.W. He, and **Y.T. Zhu**, "Deformation Mechanism in Nanocrystalline Al: Partial Dislocation Slip," *Appl. Phys. Lett.* **83**, 632-634 (2003).
95. **Y.T. Zhu**, J.Y. Huang, J. Gubicza, T. Ungár, Y.M. Wang, E. Ma, R.Z. Valiev, "Nanostructures in Ti Processed by Severe Plastic Deformation," *J. of Materials Research* **18**, 1908-1917 (2003).
96. X.Z. Liao, J.Y. Huang, **Y.T. Zhu**, F. Zhou and E.J. Lavernia, "Nanostructures and deformation mechanisms in a cryogenically ball-milled Al-Mg alloy," *Phil. Mag.* **83**, 3065-3075 (2003).
97. A. Serquis, L. Civale, D.L. Hammon, X.Z. Liao, J.Y. Coulter, **Y.T. Zhu**, D.E. Peterson, and F.M. Mueller, "The Role of Excess Mg and Heat Treatments on Microstructure and Critical Current of PIT MgB₂ Wires," *J. Appl. Phys.* **94**, 4024-4031 (2003).
98. A.C. Serquis, X.Z. Liao, **Y.T. Zhu**, S.S. Indrakanti, V.F. Nesterenko, J.Y. Coulter, L. Civale, D.L. Hamonn, J.D. Thompson, D.E. Peterson, and F.M. Mueller, "The Influence of Structural Defects on Critical Currents of Bulk MgB₂," *IEEE Transactions On Applied Superconductivity* **13**, 3068-3071 (2003).
99. L. Civale, A. Serquis, D.L. Hammon, X.Z. Liao, J.Y. Coulter, **Y.T. Zhu**, T. Holesinger, D.E. Peterson, and F. M. Mueller, "High critical currents in powder in tube MgB₂ wires: influence of microstructure and heat treatments," *IEEE Transactions On Applied Superconductivity* **13**, 3347-3350 (2003).
100. A. Serquis, X.Z. Liao, J.Y. Huang, Q.X. Jia, D.E. Peterson, and **Y.T. Zhu**, "Co-Mo Catalyzed Growth of Multi-wall Carbon Nanotubes from CO Decomposition," *Carbon* **41**, 2635-2641 (2003).
101. X.Z. Liao, F. Zhou, E.J. Lavernia, D.W. He, and **Y.T. Zhu**, "Deformation Twins in Nanocrystalline Al," *Appl. Phys. Lett.* **83**, 5062-5064 (2003).

102. J. Gubicza, I.C. Dragomir, G. Ribárik, R.J. Hellmig, **Y.T. Zhu**, R.Z. Valiev, and T. Ungár, “Dislocation structure and crystallite size-distribution in plastically deformed Ti determined by X-ray peak profile analysis,” *Zeitschrift fuer Metallkunde* **94**, 1185-1188 (2003).

2004

103. **Y.T. Zhu**, G.W. Egeland, Y. Li, Q.X. Jia, J. Gallegos, A. Serquis, X.Z. Liao, D.E. Peterson, R.C. Dye, B.J. Roop, “Formation of Pile Networks by Long Carbon Nanotubes from Decomposition of CO on Co-Mo Film,” *J. Nanoscience and Nanotechnology* **4**, 189-191 (2004).
104. X.Z. Liao, Y.H. Zhao, S.G. Srinivasan, **Y.T. Zhu**, R.Z. Valiev, and D.V. Gunderov, “Deformation Twinning in Nanocrystalline Copper at Room Temperature and Low Strain Rate” *Appl. Phys. Lett.* **84**, 592-594 (2004).
105. X.Z. Liao, **Y.T. Zhu**, Y.M. Qiu, R. Leon, D. Uhl, and H.F. Xu, “Quantum Dot/Substrate Interaction in InAs/In_{0.53}Ga_{0.47}As/InP(001),” *Appl. Phys. Lett.* **84**, 511-513 (2004).
106. Y.M. Wang, E. Ma, R.Z. Valiev, and **Y.T. Zhu**, “Tough Nanostructured Metals at Cryogenic Temperatures,” *Advanced Materials* **16**, 328-331 (2004).
107. J.Y. Huang, **Y.T. Zhu**, X.Z. Liao and R.Z. Valiev, “Amorphization of TiNi by High Pressure Torsion,” *Phil. Mag. Lett.* **84**, 183-190 (2004).
108. J.Y. Huang, **Y.T. Zhu**, D.J. Alexander, X.Z. Liao, T.C. Lowe, R.J. Asaro, “Development of Repetitive Corrugation and Straightening,” *Mater. Sc. Eng. A* **371**, 35-39 (2004).
109. V.V. Stolyarov, L. Sh. Shuster, M.Sh. Migranov, **Y.T. Zhu**, R.Z. Valiev, “Reduction of Friction Coefficient of Ultrafine-Grained CP Titanium,” *Mater. Sci. Eng. A* **371**, 313-317 (2004)..
110. X.Z. Liao, S.G. Srinivasan, Y.H. Zhao, M.I. Baskes, **Y.T. Zhu**, F. Zhou, E.J. Lavernia, and H. Xu “Formation Mechanism of Wide Stacking Faults in Nanocrystalline Al,” *Appl. Phys. Lett.* **84**, 3564-3566 (2004).
111. M. Stan, **Y.T. Zhu**, H. Jiang, and D.P. Butt, “Kinetics of Oxygen Removal from Ceria Powder in a Reducing Atmosphere,” *J. Appl. Phys.* **95**, 3358-3361 (2004).
112. A. Balyanov, J. Kutnyakova, N.A. Amirkhanova, V.V. Stolyarov, R.Z. Valiev, X.Z. Liao, Y.H. Zhao, Y.B. Jiang, H.F. Xu, T.C. Lowe, and **Y.T. Zhu**, “Corrosion Resistance of Ultrafine-Grained Ti Titanium,” *Scripta Mater.* **51**, 225-229 (2004).
113. **Y.T. Zhu** and X.Z. Liao, “Nanostructured Metals: Retaining Ductility,” *Nature Materials* **3**, 351-352 (2004).
114. X.Z. Liao, A.C. Serquis, **Y.T. Zhu**, J.Y. Huang, L. Civale, D.E. Peterson, and F.M. Mueller, “Strain Effect on the Critical Temperature of MgB₂,” *Superconductor Science and Technology*, **17**, 1026-1030 (2004).
115. Y.H. Zhao, **Y.Y. Zhu**, and T. Liu, “Mechanism of Solid-State Amorphization of Se Induced by Mechanical Milling,” *J. Appl. Phys.* **95**, 7674-7680 (2004).
116. X.Z. Liao, Y.H. Zhao, **Y.T. Zhu**, R.Z. Valiev, and D.V. Gunderov, “Grain Size Effect on the Deformation Mechanisms of Nanostructured Copper Processed by High-Pressure Torsion,” *J. Appl. Phys.* **96**, 636-640 (2004).
117. **Y.T. Zhu**, T.C. Lowe and T.G. Langdon, “Performance and Applications of Nanostructured Materials,” a Viewpoint paper for *Scripta Mater.* **51**, 825-830 (2004).
118. Y.H. Zhao, X.Z. Liao, Z. Jin, R.Z. Valiev, and **Y.T. Zhu**, “Microstructure and Mechanical Properties of 7075 Al Alloy Processed by ECAP and Their Evolution during Annealing,” *Acta Mater.* **52**, 4589-4599 (2004).
119. **Y.T. Zhu** and T.G. Langdon, “Fundamentals of Nanostructured Materials by Severe Plastic Deformation” *JOM*, 58-63 (Oct. 2004).
120. G.J. Raab, R.Z. Valiev, T.C. Lowe, and **Y.T. Zhu**, “Continuous Processing of Ultrafine Grained Al by ECAP-Conform,” *Mater. Sci. Eng.* **A382**, 30-34 (2004).
121. Z.W. Wang, Y.S. Zhao, K. Tait, X.Z. Liao, D. Schifer, C.S. Zha, R.T. Downs, J. Qian, **Y.T. Zhu**, and T.D. Shen, “A Quenchable Superhard Carbon Phase Synthesized by Cold-Compression of Carbon Nanotubes,” *Proceedings of the National Academy of Sciences of the USA (PNAS)*, **101**, 13699-13702 (2004).
122. V.V. Stolyarov, **Y.T. Zhu**, G.I. Raab, A.I. Zharikov, R.Z. Valiev, “Effect of Initial Microstructure on the Microstructural Evolution and Mechanical Properties of Ti during Cold Rolling,” *Mater. Sci. Eng.* **A385**, 309-313 (2004).
123. L.X. Zheng, M.J. O’Connel, X.Z. Liao, Y.H. Zhao, E.A. Akhadov, S.K. Doorn, B.J. Roop, Q.X. Jia, M.A. Hoffbauer, R.C. Dye, D.E. Peterson, Y.M. Huang, J. Liu, **Y.T. Zhu**, “Ultralong Single-Wall Carbon Nanotubes” *Nature Materials* **3**, 673-676 (2004).
124. A. Serquis, L. Civale, J.Y. Coulter, D.L. Hammon, X.Z. Liao, **Y.T. Zhu**, D.E. Peterson, F.M. Mueller, V.F.

- Nesterenko, and S.S. Indrakanti, "Large Field Generation with Powder-in-Tube MgB₂ coil at 25K," *Superconductor Science and Technology*, **17**, L35-L37 (2004).
125. A. Berenov, A. Serquis, X. Liao, **Y.T. Zhu**, D.E. Peterson, Y. Bugoslavsky, K.A. Yates, M.G. Blamire, L.F. Cohen, and J.J. MacManus-Driscoll, "Enhancement of Critical Current Density in Low Al-Doped MgB₂," *Superconductor Science and Technology*, **17**, 1093-1096 (2004).
126. **Y.T. Zhu**, X.Z. Liao, Y.H. Zhao, S.G. Srinivasan, F. Zhou, E.J. Lavernia, "Nucleation and Growth of Deformation Twins in Nanocrystalline Aluminum," *Appl. Phys. Lett.* **85**, 5049-5051 (2004).
127. X.Z. Liao, J.L. MacManus-Driscoll, **Y.T. Zhu**, D.E. Peterson, Y.B. Jiang, H.F. Xu, "Highly Disordered Intergrowth in Sr₂FeMoO₆," *J. Appl. Phys.* **96**, 7747-1149 (2004).

2005

128. S.K. Doorn, M.J. O'Connell, L.X. Zheng, **Y.T. Zhu**, S. Huang, and J. Liu, "Raman Spectral Imaging of a Carbon Nanotube Intramolecular Junction," *Phys. Rev. Lett.* **94**, 016802 (2005).
129. Y.H. Zhao, X.Z. Liao, R.Z. Valiev, and **Y.T. Zhu**, "Enhanced Mechanical Properties in Ultrafine Grained 7075 Al Alloy," *J. Mater. Res.* **20**, 288-291 (2005).
130. **Y.T. Zhu**, X.Z. Liao and R.Z. Valiev, "Formation Mechanism of Fivefold Deformation Twins in Nanocrystalline face-centered-cubic Metals," *Appl. Phys. Lett.* **86**, 103112 (2005).
131. H. Wang, X.Z. Liao, H.F. Xu, X. Zhang, Y. Lin, S.R. Foltyn, P.N. Arendt, J.L. MacManus-Driscoll, **Y.T. Zhu**, and Q.X. Jia, "Effects of Eu Interfacial Mobility on the Growth of Epitaxial EuBa₂Cu₃O₇ Films," *Appl. Phys. Lett.* **86**, 101912 (2005).
132. S.G. Srinivasan, X.Z. Liao, M.I. Baskes, R.J. McCabe, Y.H. Zhao, and **Y.T. Zhu**, "Compact and Dissociated Dislocations in Al: Implications for Deformation in fcc Metals," *Phys. Rev. Lett.* **94**, 125502 (2005).
133. S.K. Doorn, L.X. Zheng, M.J. O'Connell, **Y.T. Zhu**, S.M. Huang, J. Liu, "Raman Spectroscopy and Imaging of Ultralong Carbon Nanotubes," *J. Phys. Chem. B.* **109**, 3751-3758 (2005).
134. **Y.T. Zhu**, "Deformation Twinning in Nanocrystalline Metals," *J. Mater. Eng. & Performance*, **14**, 467-472 (2005) (**invited paper**).
135. **Y.T. Zhu**, X.Z. Liao, S.G. Srinivasan, and E.J. Lavernia, "Nucleation of Deformation Twins in Nanocrystalline fcc Metals Processed by Severe Plastic Deformation," *J. Appl. Phys.* **98**, 034319 (2005).
136. **Y.T. Zhu** and T.G. Langdon, "Influence of Grain Size on Deformation Mechanisms in Polycrystalline Materials," *Mater. Sci. Eng. A*, **409**, 234-242 (2005). (**invited paper**)
137. R.Z. Valiev and **Y.T. Zhu**, "Contribution of Early Works by Terence Langdon to Modern Materials Science," *Mater. Sci. Eng. A*. **410-411**, 5-7 (2005).
138. Y.H. Zhao, X.Z. Liao, **Y.T. Zhu**, Z. Horita, and T.G. Langdon, "Influence of Stacking Fault Energy on Nanostructure Formation under High-Pressure Torsion," *Mater. Sci. Eng. A*, **410-411**, 188-193 (2005).
139. Q. Xue, X.Z. Liao, **Y.T. Zhu**, and G.T. Gray III, "Formation Mechanisms of Nanostructures in Stainless Steel during High-Strain-Rate Severe Plastic Deformation," *Mater. Sci. Eng. A*, **410-411**, 252-256 (2005).
140. V.G. Pushin, V.V. Stolyarov, R.Z. Valiev, T.C. Lowe, and **Y.T. Zhu**, "Nanostructured TiNi-Based Shape Memory Alloys Processed by Severe Plastic Deformation," *Mater. Sci. Eng. A* **410-411**, 386-389 (2005).
141. P.Q. La, J.Q. Ma, **Y.T. Zhu**, J. Yang, W.M. Liu, Q.J. Xue, R.Z. Valiev, "Dry Sliding Tribological Properties of UFG Ti Prepared by SPD," *Acta Mater.* **53**, 5167-5173 (2005).

2006

142. **Y.T. Zhu**, "Deformation Twins Formed in Nanocrystalline Materials," *Mater. Sci. Forum*, **503-504**, 125-132 (2006) (**Kenote paper**).
143. I.P. Semenova, L.R. Saitova, G.I. Raab, A.I. Korshunov, **Y.T. Zhu**, T. C Lowe, R.Z Valiev, "Microstructural Features and Mechanical Properties of the Ti-6Al-4V ELI Alloy Processed by Severe Plastic Deformation," *Mater. Sci. Forum*, **503-504**, 757-762 (2006).
144. V.V. Latysh, I.P. Semenova, G.H. Salimgareeva, I.V. Kandarov, **Y.T. Zhu**, T.C. Lowe, R.Z. Valiev, "Microstructure and properties of Ti rods produced by multi-step SPD," *Mater. Sci. Forum*, **503-504**, 763-768 (2006).
145. V.G. Pushin, R.Z. Valiev, **Y.T. Zhu**, S.D. Prokoshkin, D.V. Gunderov, L.I. Yurchenko, "Effect of Equal Channel Angular Processing and Repeated Rolling on Structure, Phase Transformations, and Properties of TiNi Shape Memory Alloys," *Mater. Sci. Forum*, **503-504**, 539-544 (2006).

146. B.Q. Han, J.Y. Huang, **Y.T. Zhu**, and E.J. Lavernia, "Effect of Strain Rates on Ductility in a Nanostructured Aluminum Alloy," *Scripta Mater.* **54**, 1175-1180 (2006).
 147. X.Z. Liao, R.Z. Valiev, H.S. Gao, X.D. Li, A.K. Mukherjee, J.F. Bingert, **Y.T. Zhu**, "High-Pressure Torsion Induced Grain Growth in Electrodeposited Nanocrystalline Ni," *Appl. Phys. Lett.* **88**, 021909 (2006).
 148. V.V. Stolyarov, R.Z. Valiev, and **Y.T. Zhu**, "Enhanced Low Temperature Impact Toughness of Nanostructured Ti," *Appl. Phys. Lett.* **88**, 041905 (2006).
 149. R.Z. Valiev, Y. Estrin, Z. Horita, T.G. Langdon, M.J. Zehetbauer, and **Y.T. Zhu**, "Producing Bulk Ultrafine-Grained Materials by Severe Plastic Deformation," *JOM.* **58** (4), 33-39 (2006).
 150. X.L. Wu, **Y.T. Zhu**, and E. Ma, "Prediction for Partial-Dislocation-Mediated Processes in Nanocrystalline Ni by Generalized Planar Fault Energy: An Experimental Evaluation," *Appl. Phys. Lett.* **88**, 121905 (2006).
 151. X.L. Wu, **Y.T. Zhu**, M.W. Chen, and E. Ma, "Twinning and Stacking Fault Formation during Tensile Deformation of Nanocrystalline Ni," *Scripta Mater.* **54**, 1685-1690 (2006).
 152. L.X. Zheng, X.Z. Liao, and **Y.T. Zhu**, "Parametric Study of CNT Growth via Cobalt-Catalyzed Ethanol Decomposition," *Mater. Lett.* **60**, 1968-1972 (2006).
 153. B.Q. Han, J.Y. Huang, **Y.T. Zhu**, and E.J. Lavernia, "Strain Rate Dependence of Properties of Cryomilled Bimodal 5083 Al Alloys," *Acta Mater.* **54**, 3015-3024 (2006).
 154. M. Morehead, Y. Huang, **Y.T. Zhu**, T.C. Lowe, R.Z. Valiev, "Experimental Investigation of the Machinability of ECAP Processed Pure Titanium," *Transactions of NAMRI/SME* **34**, 539-546 (2006).
 155. X. Wu and **Y.T. Zhu**, "Partial-Dislocation-Mediated Processes in Nanocrystalline Ni with Non-Equilibrium Grain Boundaries," *Appl. Phys. Lett.* **89**, 031922 (2006).
 156. V.G. Pushin, R.Z. Valiev, **Y.T. Zhu**, D.V. Gunderov, A.V. Korolev, N.I. Kourov, T.E. Kuntsevich, E.Z. Valiev, and L.I. Yurchenko, "Severe plastic deformation of melt-spun shape memory Ti₂NiCu and Ni₂MnGa alloys," *Mater. Trans.* **47**, 546-549 (2006).
 157. V.G. Pushin, R.Z. Valiev, **Y.T. Zhu**, D.V. Gunderov, N.I. Kourov, T.E. Kuntsevich, A.N. Uksusnikov, and L.I. Yurchenko, "Effect of severe plastic deformation on the behavior of Ti-Ni shape memory alloys," *Mater. Trans.* **47**, 694-697 (2006).
 158. Y.H. Zhao, X.Z. Liao, S. Cheng, E. Ma and **Y.T. Zhu**, "Simultaneously Increasing the Ductility and Strength of Nanostructured Alloys," *Advanced Mater.* **18**, 2280-2283 (2006).
 159. Q.W. Li, R.J. Groves, X.F. Zhang, L.X. Zheng, P.N. Arendt, F.M. Mueller, **Y.T. Zhu**, and Y. Tu, "Drying-Induced Upright Sliding and Reorganization of Carbon Nanotube Arrays," *Nanotechnology* **17**, 4533-4536 (2006).
 160. Q.W. Li, **Y.T. Zhu**, I.A. Kinloch, and A.H. Windle, "Self-organization of Carbon Nanotubes in Evaporating Droplets," *J. Phys. Chem. B* **110**, 13926-13930 (2006).
 161. Y.H. Zhao, **Y.T. Zhu**, X.Z. Liao, Z. Horita, and T.G. Langdon, "Tailoring Stacking Fault Energy for High Ductility and High Strength in Ultrafine Grained Cu and its Alloy," *Appl. Phys. Lett.* **89**, 121906 (2006).
 162. Y.H. Zhao, J.E. Bingert, X.Z. Liao, B.Z. Cui, K. Han, A.V. Sergueeva, A.K. Mukherjee, R.Z. Valiev, T.G. Langdon, and **Y.T. Zhu**, "Simultaneously Increasing the Ductility and Strength of Ultra-fine-Grained Pure Copper," *Adv. Mater.* **18**, 2949-2953 (2006).
 163. Q.W. Li, X.F. Zhang, R.F. Depaula, L.X. Zheng, Y.H. Zhao, L. Stan, T.G. Holesinger, P.N. Arendt, D.E. Peterson, **Y.T. Zhu**, "Sustained Growth of Ultralong Carbon Nanotube Arrays for Fiber Spinning," *Advanced Mater.* **18**, 3160-3163 (2006).
 164. **Y.T. Zhu**, "Deformation Mechanisms of Nanocrystalline Materials," *Mater. Sci. Forum*, **539-543**, 270-277 (2006). (**Kenote paper**).
 165. B.Q. Han, J.Y. Huang, **Y.T. Zhu**, and E.J. Lavernia, "Negative Strain-rate Sensitivity in a Nanostructured Aluminum Alloy," *Advanced Eng. Mater.* **8**, 945-947 (2006).
- 2007**
166. X.F. Zhang, Q.W. Li, Y. Tu, Y. Li, Y.H. Zhao, L.X. Zheng, Q.X. Jia, D.E. Peterson and **Y.T. Zhu**, "Strong Carbon Nanotube Fibers from Long Carbon Nanotube Arrays," *Small*, **3**, 244-248 (2007).
 167. X.L. Wu, E. Ma and **Y.T. Zhu**, "Deformation Defects in Nanocrystalline Nickel," *J. Mater. Sci.* **42**, 1427-1432 (2007).
 168. Y.M. Wang, J.Y. Huang, T. Jiao, **Y.T. Zhu**, and A.V. Hamza, "Abnormal Strain Hardening in Nanostructured Titanium at Large Strains," *J. Mater. Sci.* **42**, 1751-1756 (2007).

169. T. Ungár, L. Balogh, **Y.T. Zhu**, Z. Horita, C. Xu, T.G. Langdon, "Using X-ray Microdiffraction to Determine Grain Sizes at Selected Positions in Disks Processed by High-Pressure Torsion," *Mater. Sci. Eng. A*, **444**, 153-156 (2007).
170. Y.G. Yao, Q.W. Li, J. Zhang, L.Y. Jiao, **Y.T. Zhu**, Z.F. Liu, "Temperature Mediated Growth of Single-Wall Carbon Nanotube Intramolecular Junctions," *Nature Mater.* **6**, 283-286 (2007).
171. X.L. Wu, Y. Qi, and **Y.T. Zhu**, "Partial-Mediated Slips in Nanocrystalline Ni at High Strain rate," *Appl. Phys. Lett.* **90**, 221911 (2007).
172. Y.H. Zhao, **Y.T. Zhu**, Z. Horita, and T.G. Langdon, "Influence of stacking fault energy on the minimum grain size achieved in severe plastic deformation," *Mater. Sci. Eng. A*, **463**, 22-26 (2007).
173. R. Kelkar, P. Nash, and **Y.T. Zhu**, "Understanding the Effect of Cryogenic Treatment on M2 Tool Steel Properties," *Heat Treating Progress*, 57-60 (Aug.) 2007.
174. Z.L. Wang, D.W. Tang, W.G. Zhang, X.H. Zheng, L.X. Zheng, **Y.T. Zhu**, A.Z. Jin, H.F. Yang, and C.Z. Gu, "Length-Dependent Thermal Conductivity of an Individual Single-Wall Carbon Nanotube on Substrate," *Appl. Phys. Lett.* **91**, 123119 (2007).
175. Z.L. Wang, D.W. Tang, W.G. Zhang, X.H. Zheng, L.X. Zheng, **Y.T. Zhu**, "Length-dependent Thermal Conductivity of Single-wall Carbon Nanotube: Prediction and Measurements," *Nanotechnology*, **18**, 475714 (2007).
176. L.X. Zheng, X.F. Zhang, Q.W. Li, Y. Li, Y.H. Zhao, Q.X. Jia, B.C. Satishkumar, S.K. Doorn, and **Y.T. Zhu**, "Carbon-Nanotube Cotton for Large-Scale Fibres," *Advanced Mater.* **19**, 2567-2570 (2007).
177. S. Cheng, Y.H. Zhao, **Y.T. Zhu**, and E. Ma, "Optimizing the Strength and Ductility of Ultrafine-grained 2024 Al Alloy by Nano Precipitation," *Acta Mater.* **55**, 5822-5832 (2007).
178. Q.W. Li, Y. Li, S. Chikkannavar, Y.H. Zhao, A. Dangelewicz, X.F. Zhang, L.X. Zheng, S.K. Doorn, Q.X. Jia, D.E. Peterson, P.A. Arendt, **Y.T. Zhu**, "Structure-Dependent Electronic Properties of Carbon Nanotube Fibers," *Advanced Mater.* **19**, 3358-3363 (2007).
179. I.O. Usov, Y.Q. Wang, Q.W. Li, **Y.T. Zhu**, R.F. DePaula, P.N. Arent, "Impurity Elements Study of Carbon Nanotubes Fabricated by Chemical Vapor Deposition," *Nuclear Inst. And Methods in Physics Research, B*, **261**, 574-577 (2007).
180. X.F. Zhang, Q.W. Li, T.G. Holesinger, P.A. Arendt, J.Y. Huang, T.G. Clapp, R.F. Depaula, X.Z. Liao, Y.H. Zhao, L.X. Zheng, D.E. Peterson, and **Y.T. Zhu**, "Ultrastrong, Stiff, and Lightweight Carbon Nanotube Fibers," *Advanced Mater.* **19**, 4198-4201 (2007).

2008

181. Y.H. Zhao, Z. Horita, T.G. Langdon, and **Y.T. Zhu**, "Evolution of Defect Structures during Cold Rolling of Ultrafine-Grained Cu and Cu-Zn Alloys: Stacking Fault Energy Effect," *Mater. Sci. Eng. A*, **474**, 342-347 (2008).
182. L. Balogh, T. Ungár, Y.H. Zhao, **Y.T. Zhu**, Z. Horita, C. Xu, and T.G. Langdon, "Influence of Stacking-Fault Energy on the Microstructural Characteristics of Ultrafine-Grained Copper and Copper-Zinc Alloys," *Acta Mater.* **56**, 809-820 (2008).
183. Y.H. Zhao, J.F. Bingert, **Y.T. Zhu**, X.Z. Liao, R.Z. Valiev, Z. Horita, T.G. Langdon, Y.Z. Zhou, and E.J. Lavernia, "Tougher Ultrafine-Grain Cu via High-Angle Grain Boundaries and Low Dislocation Density," *Appl. Phys. Lett.* **92**, 081903 (2008).
184. X.L. Wu, X.Z. Liao, S.G. Srinivasan, F. Zhou, E.J. Lavernia, R.Z. Valiev, and **Y.T. Zhu**, "New Deformation Twinning Mechanism Generates Zero Macro-strain in Nanocrystalline Metals," *Phys. Review Lett.* **100**, 095701 (2008).
185. R.Z. Valiev, D. Gunderov, E. Prokofiev, V. Pushin, **Y.T. Zhu**, "Nanostructuring of a TiNi alloy by SPD processing for advanced properties," *Mater. Trans.* **49**, 97 (2008).
186. J. Narayan, **Y.T. Zhu**, "Self-Thickening, Cross-Slip Deformation Twinning Model," *Appl. Phys. Lett.* **92**, 151908 (2008).
187. H.S. Peng, **Y.T. Zhu**, D.E. Peterson and Y. Liu, "Nanolayered Carbon-Silica Superstructures via Organosilane Assembly," *Advanced Mater.* **20**, 1199-1204 (2008).
188. H.S. Peng, M. Jain, Q.W. Li, D.E. Peterson, **Y.T. Zhu**, and Q.X. Jia, "Vertically Aligned Pearl-Like Carbon Nanotube Arrays," *J. Am. Chem. Soc.* **130**, 1130-1131 (2008).
189. S. Cheng, H. Choo, Y.H. Zhao, K.X. Tao, X.L. Wang, **Y.T. Zhu**, P.K. Liaw, and Y.K. Lee "High Ductility of Ultrafine-Grained Steel via Phase Transformation," *J Mater. Res.* **23**, 1578-1586 (2008).

190. X.L. Wu and **Y.T. Zhu**, "Inverse Grain-Size Effect on Twinning in Nanocrystalline Ni," *Phys. Rev. Lett.* **101**, 025503 (2008).
 191. G.I. Raab, R.Z. Valiev, D.V. Gunderov, T.C. Lowe, A. Misra, and Y.T. Zhu, "Long-Length Ultrafine-grained Titanium Rods Produced by ECAP-Conform," *Mater. Sci. Forum* (Nanomaterials by Severe Plastic Deformation IV, PTS 1&2) **584-586**, 80-85 (2008).
 192. Y.H. Zhao, Y.Z. Guo, Q. Wei, A.M. Dangelewicz, C. Xu, **Y.T. Zhu**, T.G. Langdon, Y.Z. Zhou, E.J. Lavernia, "Influence of Specimen Dimensions on the Tensile Behavior of Ultrafine-Grained Cu," *Scripta Mat.* **59**, 627-630 (2008).
 193. X.L. Wu, J. Narayan, **Y.T. Zhu**, "Deformation Twin formed by Self-Thickening, Cross-Slip Mechanism in Nanocrystalline Ni," *Appl. Phys. Lett.* **93**, 031910 (2008).
 194. **Y.T. Zhu**, X.Z. Liao, X.L. Wu "Deformation Twinning in Bulk Nanocrystalline Metals: Experimental Observations." *JOM* **60** (September), 60-64 (2008).
 195. Y.H. Zhao, T. Topping, J.F. Bingert, A.M. Dangelewicz, Y. Li, **Y.T. Zhu**, Y.Z. Zhou, and E.J. Lavernia, "High Tensile Ductility and Strength in Bulk Nanostructured Nickel," *Advanced Mater.* **20**, 3028-3033 (2008).
 196. Y.H. Zhao, X.Z. Liao, Z. Horita, T.G. Langdon, and **Y.T. Zhu**, "Determining the Optimal Stacking Fault Energy for Achieving High Ductility in Ultrafine-Grained Cu-Zn alloys," *Mater. Sci. Eng. A* **493**, 123-129 (2008).
 197. H.S. Peng, D.Y. Chen, J.Y. Huang, S.B. Chikkannanavar, J. Hännisch, D.E. Peterson, S.K. Doorn, Y.F. Lu, **Y.T. Zhu**, and Q.X. Jia, "Strong and Ductile Colossal Carbon Tubes with Wall of Rectangular Macropores," *Phys. Rev. Lett.* **101**, 145501 (2008).
 198. H.S. Peng, M. Jain, D.E. Peterson, **Y.T. Zhu**, and Q.X. Jia, "Composite Carbon Nanotube/Silica Fibers with Improved Mechanical and Electrical Properties," *Small.* **4**, 1964-1967 (2008).
- 2009**
199. Z.W. Wang, Y.B. Wang, X.Z. Liao, Y.H. Zhao, E.J. Lavernia, **Y.T. Zhu**, Z. Horita, T.G. Langdon "Influence of Stacking Fault Energy on Deformation Mechanism and Dislocation Storage Capacity in Ultrafine-Grained Materials," *Scripta Mat.* **60**, 52-55 (2009).
 200. Y.B. Wang, J.C. Ho, X.Z. Liao, H.Q. Li, S.P. Ringer, and **Y.T. Zhu**, "Mechanism of grain growth during severe plastic deformation of a nanocrystalline Ni-Fe alloy," *Appl. Phys. Lett.* **94**, 011908 (2009).
 201. Y.B. Wang, J.C. Ho, Y. Cao, X.Z. Liao, H.Q. Li, Y.H. Zhao, E.J. Lavernia, S.P. Ringer, and Y.T. Zhu, "Dislocation Density Evolution during High Pressure Torsion of a Nanocrystalline Ni-Fe Alloy," *Appl. Phys. Lett.* **94**, 091911 (2009).
 202. **Y.T. Zhu**, J. Narayan, J.P. Hirth, S. Mahajan, X.L. Wu and X.Z. Liao, "Formation Mechanisms of Single and Multiple Deformation Twins in FCC Materials," *Acta Mater.* **57**, 3763-3770 (2009).
 203. **Y.T. Zhu**, X.L. Wu, X.Z. Liao, J. Narayan, S. N. Mathaudhu, and L. J. Kecskés, "Twinning Partial Multiplication at Grain Boundary in Nanocrystalline fcc Metals," *Appl. Phys. Lett.* **95**, 031909 (2009).
 204. P.L. Sun, Y.H. Zhao, M.E. Kassner, Z. Horita, T.G. Langdon, E.J. Lavernia, and **Y.T. Zhu**, "Stacking Fault Energy Effect on Strength and Ductility of Nanostructured Alloys: an Evaluation with Minimum Solution Hardening," *Mater. Sci. Eng. A.* **525**, 83-86 (2009).
 205. H.Q. Li, A. Misra, Z. Horita, C.C. Koch, N.A. Mara, P.O. Dickerson, **Y.T. Zhu**, "Strong and Ductile Nanostructured Cu-Carbon Composite," *Appl. Phys. Lett.* **95**, 071907 (2009).
 206. Y.H. Zhao, Y.Z. Guo, Q.M. Wei, T. Troy, A.M. Dangelewicz, **Y.T. Zhu**, T.G. Langdon, and E.J. Lavernia, "Influence of Specimen Dimension and Strain Measurement Methods on Tensile Stress-Strain Curves," *Mater. Sci. Eng. A.* **525**, 68-77 (2009).
 207. Y.Y. Zhang, G.F. Zou, S.K. Doorn, H. Htoon, L. Stan, M.E. Hawley, C.J. Sheehan, **Y.T. Zhu**, Q.X. Jia, "Controlling the Morphology of Carbon Nanotube Array: From Spinnable Forest to Undulating Foam," *ACS Nano* **3**, 2157-2162 (2009).
 208. H.Q. Li, A. Misra, **Y.T. Zhu**, Z. Horita, C.C. Koch, and T.G. Holesinger, "Processing and Characterization of Nanostructured Cu-Carbon Nanotube Composites," *Mater. Sci. Eng. A* **523**, 60-64 (2009).
 209. Y.Y. Zhang, L. Stan, P. Xu, H.L. Wang, S.K. Doorn, H. Htoon, **Y.T. Zhu**, Q.X. Jia, "A Double-Layered Carbon Nanotube Array with Super-Hydrophobicity," *Carbon* **47**, 3332-3336 (2009).
 210. H.S. Peng, X.M. Sun, F.J. Cai, X.L. Chen, Y.C. Zhu, G.P. Liao, D.Y. Chen, Q.W. Li, Y.F. Lu, **Y.T. Zhu**, and Q.X. Jia, "Electrochromatic Carbon Nanotube/Polydiacetylene Nanocomposite Fibers," *Nature NanoTech.* **4**, 738-741 (2009).

211. X.L. Wu, **Y.T. Zhu**, Y.G. Wei, and Q. Wei, "Strong Strain Hardening in Nanocrystalline Nickel," *Phys. Rev. Lett.* **103**, 205504 (2009).
212. I.J. Beyerlein, P.K. Porwal, **Y.T. Zhu**, K. Hu and X.F. Xu, "Modeling the Statistical Failure Process in Twisted Carbon Nanotube Structures," *Nanotechnology* **20**, 485702 (2009).
213. Y.H. Zhao, Y. Li, T. Topping, X.Z. Liao, **Y.T. Zhu**, R.Z. Valiev, and E.J. Lavernia, "Ductility of Ultrafine-Grained Cu Processed by Equal-Channel Angular Pressing," *International J. Mater. Sci.* **100**, 1647-1652 (2009).
214. Y.B. Wang, X.Z. Liao and **Y.T. Zhu**, "Grain Refinement and Growth Induced by Severe Plastic Deformation," *International J. Mater. Sci.* **100**, 1632-1637 (2009).

2010

215. Y.B. Wang, M. Louie, Y. Cao, X.Z. Liao, H.J. Li, S.P. Ringer, and **Y.T. Zhu**, "High-Pressure Torsion Induced Microstructural Evolution in a Hexagonal Close-Packed Zr Alloy," *Scripta Mat.* **62**, 214-217 (2010).
216. Y. Cao, Y.B. Wang, S.N. Alhajeri, X.Z. Liao, W.L. Zheng, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, "A visualization of Shear Strain in Processing by High-Pressure Torsion," *J. Mater. Sci.* **45**, 765-770 (2010).
217. Y.B. Wang, X.Z. Liao, Y.H. Zhao, E.J. Lavernia, S.P. Ringer, Z. Horita, T.G. Langdon, and **Y.T. Zhu**, "The Role of Stacking fault and twin boundary in grain refinement in a Cu-Zn alloy processed by high-pressure torsion," *Mater. Sci. Eng. A* **527**, 4959-4966 (2010).
218. Y. Li, Y.H. Zhao, W. Liu, C. Xu, Z. Horita, X.Z. Liao, **Y.T. Zhu**, T.G. Langdon, E.J. Lavernia, "Influence of Grain Size on the Density of Deformation Twins in Cu-30%Zn Alloy," *Mater. Sci. Eng. A*, **527**, 3942-3948 (2010).
219. J.Y. Hwang, A.R.P. Singh, M. Chaudhari, J. Tiley, **Y.T. Zhu**, J. Du, and R. Banerjee, "Templated Growth of Hexagonal Nickel Carbide Nanocrystals on Vertically Aligned Carbon Nanotubes," *J. Phys. Chem. C* **114**, 10424-10429 (2010).
220. Y.B. Wang, Y.H. Zhao, Q. Lian, X.Z. Liao, R.Z. Valiev, S.P. Ringer, **Y.T. Zhu**, and E.J. Lavernia, "Grain Size and Reversible beta-to-omega Phase Transformation in a Ti Alloy," *Scripta Mat.* **63**, 613-616 (2010).
221. Y. Cao, M. Kawasaki, Y.B. Wang, S.N. Alhajeri, X.Z. Liao, W.L. Zheng, S.P. Ringer, **Y.T. Zhu**, and T.G. Langdon, "Unusual Macroscopic Patterns Observed in Metals Processed by High-Pressure Torsion," *J. Mater. Sci.* **45**, 4545-4553 (2010).
222. V.S. Sarma, W.W. Jian, J. Wang, H. Conrad, and **Y.T. Zhu**, "Effect of Rolling Temperature on the Evolution of Defects and Properties of an Al-Cu Alloy," *J. Mater. Sci.*, **45**, 4846-4850 (2010).
223. C.C. Koch, R.O. Scattergood, K.M. Youssef, E. Chan, **Y.T. Zhu**, "Nanostructured Materials by Mechanical Alloying: New Results on Property Enhancement," *J. Mater. Sci.* **45**, 4725-4732 (2010).
224. H.B. Zhao, Y.Y. Zhang, P.D. Bradford, Q. Zhou, F.G. Yuan, Q.X. Jia, and **Y.T. Zhu**, "Carbon Nanotube Yarn Strain Sensor," *Nanotechnology*, **21**, 305502 (2010).
225. P. Liddicoat, X.Z. Liao, Y.H. Zhao, **Y.T. Zhu**, E.J. Lavernia, M.Y. Murashkin, R.Z. Valiev, and S.P. Ringer, "Nanostructural Hierarchy increases the Strength of Aluminum Alloys," *Nature Communication*, **1**, 63 (2010). (doi: 10.1038/ncomms1062).
226. Y.Y. Zhang, C.J. Sheehan, J.Y. Zhai, G.F. Zou, H.M. Luo, J. Xiong, **Y.T. Zhu**, Q.X. Jia, "Polymer-Embedded Carbon Nanotube Ribbons for Stretchable Conductors," *Adv. Mater.* **22**, 3027-3031 (2010).
227. P.D. Bradford, X. Wang, H.B. Zhao, J.P. Maria, Q.X. Jia, and **Y.T. Zhu**, "A Novel Approach to Fabricate High Volume Fraction, Aligned, Long Carbon Nanotube Composites," *Composite Sci. Tech.* **70**, 1980-1985 (2010).
228. V.S. Sarma, J. Wang, W.W. Jian, A. Kauffmann, H. Conrad, J. Freudenberger, and **Y.T. Zhu**, "Role of Stacking Fault Energy in Strengthening due to Cryo-Deformation of fcc metals," *Mater. Sci. Eng. A*, **527**, 7624-7630 (2010).
229. H.B. Zhao, P. D. Bradford, X. Wang, T. M. Luo, J. P. Maria, Q. X. Jia, **Y. T. Zhu**, and F. G. Yuan, "An Intermetallic Fe-Zr Catalyst Used for Growing Long Carbon Nanotube Arrays," *Mater. Lett.* **64**, 1947-1950 (2010).
230. Y.H. Zhao, **Y.T. Zhu**, and E.J. Lavernia, "Strategies for Improving Tensile Ductility of Bulk Nanostructured Materials," *Adv. Eng. Mater.* **12**, 769-778 (2010).
231. **Y.T. Zhu**, R.Z. Valiev, T.G. Langdon, N. Tsuji, and K. Lu, "Processing of Nanostructured Metals and Alloys via Plastic Deformation," *MRS Bulletin*, **35**, 977-981 (2010).

2011

232. X.L. Wu, K.M. Youssef, C.C. Koch, S.N. Mathaudhu, L.J. Keckés, and **Y.T. Zhu**, "Deformation Twinning in a Nanocrystalline HCP Mg Alloy," *Scripta Mat.*, **64**, 213-216 (2011).
233. S. Ni, Y.B. Wang, X.Z. Liao, S.N. Alhajeri, H.Q. Li, Y.H. Zhao, E.J. Lavernia, S.P. Ringer, T.G. Langdon, and

- Y.T. Zhu**, “Grain Growth and Dislocation Density Evolution in a Nanocrystalline Ni-Fe Alloys Induced by High-Pressure Torsion,” *Scripta Mat.* **64**, 327-330 (2011).
234. **Y.T. Zhu**, X.L. Wu, X.Z. Liao, J. Narayan, L. J. Kecskés, and S. N. Mathaudhu, “Dislocation-Twin Interactions in Nanocrystalline fcc Metals,” *Acta Mater.* **59**, 812-821 (2011).
235. S. Ni, Y.B. Wang, X.Z. Liao, S.N. Alhajeri, H.Q. Li, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “Grain Size Effect on Deformation Twinning and Detwinning in a Nanocrystalline Ni-Fe Alloy,” *Mater. Sci. Forum*, **667-669**, 2011, pp. 181-186.
236. G.I. Raab, R.Z. Valiev, D.V. Gunderov, T.C. Lowe, A. Misra, and **Y.T. Zhu**, “Long-length Ultrafine-grained Titanium Rods Produced by ECAP-Conform,” *Mater. Sci. Forum*, **584-586**, 2011, pp.80-85.
237. S. Ni, Y.B. Wang, X.Z. Liao, S.N. Alhajeri, H.Q. Li, Y.H. Zhao, E.J. Lavernia, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “Strain Hardening and Softening in a Nanocrystalline Ni-Fe Alloys Induced by Severe Plastic Deformation,” *Mater. Sci. Eng. A.* **528**, 3398-3403 (2011).
238. F. Deng, W.B. Lu, H.B. Zhao, **Y.T. Zhu**, T.W. Chou, and B.S. Kim, “The Properties of Dry-Spun Carbon Nanotube Fibers and Interfacial Shear Strength in an Epoxy Composite,” *Carbon* **49**, 1752-1757 (2011).
239. J. Han, X.M. Su, Z-H. Jin, and **Y.T. Zhu**, “Basal-Plane Stacking Fault Energies of Mg: A first Principle Study of Li and Al-Alloying Effects,” *Scripta Mat.* **64**, 693-396 (2011).
240. S. Ni, Y.B. Wang, X.Z. Liao, H.Q. Li, Y.H. Zhao, E.J. Lavernia, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “Strain Softening in Nanocrystalline Ni-Fe Alloys Induced by Large HPT Revolutions,” *Mater. Sci. Eng. A.* **528**, 4807-4811 (2011).
241. F.C. Meng, X.H. Zhang, G. Xu, Z.Z. Yong, M.H. Chen, M.H. Chen, Q.W. Li, and **Y.T. Zhu**, “Carbon Nanotube Composite Film with Switchable Transparency,” *ACS Appl. Mater. Interfaces*, **3**, 658-661 (2011).
242. Y. Cao, Y.B. Wang, F. Roberto, L. Chang, X.Z. Liao, M. Kawasaki, W.L. Zheng, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “Three-Dimensional Shear Strain Patterns Induced by High-Pressure Torsion and Their Impact on Hardness Evolution,” *Acta Mater.* **59**, 3903-3914 (2011).
243. P.D. Bradford, X. Wang, H.B. Zhao, and **Y.T. Zhu**, “Tuning the Compressive Mechanical Properties of Carbon Nanotube Foam,” *Carbon*, **49**, 2834-2841 (2011).
244. K.M. Youssef, Y.B. Wang, X.Z. Liao, S. Mathaudhu, L.J. Kecskés, **Y.T. Zhu**, and C.C. Koch, “High Hardness in a Nanocrystalline Mg₉₇Y₂Zn₁ Alloy,” *Mater. Sci. Eng. A*, **528**, 7494-7499 (2011).
245. S. Ni, G. Sha, Y.B. Wang, X.Z. Liao, S.N. Alhajeri, H.Q. Li, **Y.T. Zhu**, T.G. Langdon and S.P. Ringer, “Elemental Redistribution in a Nanocrystalline Ni-Fe Alloy Induced by High-Pressure Torsion,” *Mater. Sci. Eng. A*, **528**, 7500-7505 (2011).
246. W. Liu, P.D. Bradford, X. Wang, H.B. Zhao, Q.W. Li, Y.Y. Zhang, Q.X. Jia, F.G. Yuan, and **Y.T. Zhu**, “Producing Superior Composites by Winding Carbon Nanotubes onto a Mandrel under a Poly(vinyl alcohol) Spray,” *Carbon* **49**, 4786-4791 (2011).
247. G. Zou, H. Luo, S. Baily, Y. Zhang, J. Xiong, E. Bauer, T. McCleskey, A. Burrell, L. Vivale, **Y.T. Zhu**, J.L. MacManus-Driscoll, Q.X. Jia, “Highly Aligned Carbon Nanotube Forests Coated by Superconducting NbC,” *Nature Comm.* **2**:248, Aug. 16, 2011.
248. X. Wang, P.D. Bradford, W. Liu, H.B. Zhao, Y. Inoue, J.P. Maria, Q.W. Li, F.G. Yuan, and **Y.T. Zhu**, “Mechanical and Electrical Property Improvement in CNT/Nylon Composites Through Drawing and Stretching,” *Composite Sci. Tech.* **71**, 1677-1683 (2011).
249. C.J. Shute, B.D. Myers, Y. Liao, S.-Y. Li, A.M. Hodge, T.W. Barbee Jr., **Y.T. Zhu**, J.R. Weertman, “High Pressure Torsion of Copper Samples Containing Columns of Highly Aligned Nanotwins,” *Scripta Mat.* **65**, 899-902 (2011).
250. S. Ni, Y.B. Wang, X.Z. Liao, H.Q. Li, R.B. Figueiredo, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “Effect of Grain Size on the competition between Twinning and Detwinning in Nanocrystalline Metal,” *Phys. Rev. B.* **84**, 235401 (2011).
251. X. Wang, P. Krommenhoek, P.D. Bradford, B. Gong, J. Tracy, G.N. Parsons, T.J.M. Luo, and **Y.T. Zhu**, “Coating Alumina on Catalytic Iron Nanoparticles for Synthesizing Vertically Aligned Carbon Nanotube Arrays,” *ACS Applied Mater. Interfaces*, **3**, 4180-4184 (2011).
- 2012**
252. **Y.T. Zhu**, X.Z. Liao, and X.L. Wu, “Deformation Twinning in Nanocrystalline Materials,” *Prog. Mater. Sci.*, **57**, 1-62 (2012).
253. M. Zu, Q.W. Li, **Y.T. Zhu**, M. Dey, G.J. Wang, W.B. Lu, J.M. Deitzel, J.W. Gillespie Jr., J.H. Byun, T.W. Chou,

- “The Effective Interfacial Shear Strength of Carbon Nanotube Fibers in an Epoxy Matrix Characterized by Microdroplet Test,” *Carbon* **50**, 1271-1279 (2012).
254. Y.Y. Zhang, F. Ronning, K. Gofryk, N.A. Mara, N. Haberkorn, G.F. Zou, H.Y. Wang, J.H. Lee, E. Bauer, T.M. McCleskey, A.K. Burrell, L. Civale, **Y.T. Zhu**, Q.X. Jia, “Aligned Carbon Nanotube Sandwiched in Epitaxial NbC for Enhanced Superconductivity,” *Nanoscale*, **4**, 2268-2271 (2012). (DOI: 10.1039/c2nr11906d).
 255. S. Ni, Y.B. Wang, X.Z. Liao, R.B. Figueiredo, H.Q. Li, S.P. Ringer, T.G. Langdon and **Y.T. Zhu**, “The Effect of Dislocation Density on the Interaction between Dislocations and Twin Boundaries in Nanocrystalline Materials,” *Acta Mater.* **60**, 3181-3189 (2012).
 256. W. Liu, H.B. Zhao, Y. Inoue, X. Wang, P.D. Philip, H.S. Kim, Y.P. Qiu, **Y.T. Zhu**, “Poly(vinyl alcohol) Reinforced with Large-Diameter Carbon Nanotubes via Spray Winding,” *Composite A*, **43**, 587-592 (2012).
 257. A.M. Hodge, T.A. Furnish, C.J. Shute, Y. Liao, X. Huang, C.S. Hong, **Y.T. Zhu**, T.W. Barbee Jr., J.R. Weertman, “Twin Stability in Highly Nanotwinned Cu under Compression, Torsion and Tension,” *Scripta Mat.* **66**, 872-877 (2012).
 258. Y. Zhu, F. Xu, X. Wang, and **Y.T. Zhu**, “Wavy Ribbons of Carbon Nanotubes for Stretchable Conductors,” *Adv. Func. Mater.* **22**, 1279-1283 (2012).
 259. M. Zu, W.B. Lu, Q.W. Li, **Y.T. Zhu**, G.J. Wang, and T.W. Chou, “Characterization of Carbon Nanotube Fiber Compressive Properties Using Tensile Recoil Measurement,” *ACS Nano* **6**, 4288-4297 (2012).
 260. J.T. Di, D.M. Hu, H.Y. Chen, Z.Z. Yong, M.H. Chen, Z.H. Feng, **Y.T. Zhu**, Q.W. Li, “Ultrastrong, Foldable, and Highly Conductive Carbon Nanotube Film,” *ACS Nano* **6**, 5457-5464 (2012).
 261. Y. Cao, Y.B. Wang, X.Z. Liao, M. Kawasaki, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “Applied Stress Controls the Production of Nano-twins in Coarse-grained Metals,” *Appl. Phys. Letts.* **101**, 231903 (2012).
- 2013**
262. M. Zu, Q.W. Li, **Y.T. Zhu**, Y. Zhu, G.J. Wang, J.H. Byun, and T.W. Chou, “Stress Relaxation in Carbon Nanotube-Based Fibers for Load-Bearing Applications,” *Carbon* **52**, 347-355 (2013).
 263. M.H. Tsai, H. Yuan, G.M. Cheng, W.Z. Xu, K.Y. Tsai, C.W. Tsai, W.W. Jian, C.C. Juan, W.J. Shen, M.H. Chuang, J.W. Yeh, and **Y.T. Zhu**, “Morphology, Structure and Composition of Precipitates in Al_{0.3}CoCrCu_{0.5}FeNi High-Entropy Alloy,” *Intermetallics*, **32**, 329-336 (2013).
 264. G.M. Cheng, H. Yuan, W.W. Jian, W.Z. Xu, P.C. Millet, and **Y.T. Zhu**, “Deformation-Induced Omega Phase in Nanocrystalline Mo,” *Scripta Mater.* **68**, 130-133 (2013).
 265. M.H. Tsai, H. Yuan, G.M. Cheng, W.Z. Xu, W.W. Jian, M.H. Chuang, C.C. Juan, A.C. Yeh, S.J. Lin, **Y.T. Zhu**, “Significant Hardening due to the Formation of a Sigma Phase Matrix in a High Entropy Alloy,” *Intermetallics*, **33**, 81-86 (2013).
 266. X. Wang, Q. Jiang, W.Z. Xu, W. Cai, Y. Inoue, and **Y.T. Zhu**, “Effect of Carbon Nanotube Length on Thermal, Electrical and Mechanical Properties of CNT/Bismaleimide Composites,” *Carbon* **53**, 145-152 (2013).
 267. X. Wang, Z.Z. Yong, Q.W. Li, P.D. Bradford, Q. Jiang, W. Liu, D.S. Tucker, H. Wang, F.G. Yuan, and **Y.T. Zhu**, “Ultrastrong, Stiff and Multifunctional Carbon Nanotube Composites,” *Mater. Res. Lett.* **1** (1), 19-25 (2013). DOI:10.1080/21663831.2012.686586
 268. G.M. Cheng, W.W. Jian, W.Z. Xu, H. Yuan, P.C. Millet, and **Y.T. Zhu**, “Grain Size Effect on Deformation Mechanisms of Nanocrystalline bcc Metal,” *Mater. Res. Lett.* **1** (1), 26-31 (2013).
 269. **Y.T. Zhu**, X.Z. Liao, X.L. Wu, and J. Narayan, “Grain Size Effect on Deformation Twinning and Detwinning,” *J. Mater. Sci.*, **48**, 4467-4475 (2013).
 270. W.W. Jian, G.M. Cheng, W.Z. Xu, H. Yuan, M.H. Tsai, Q.D. Wang, C.C. Koch, **Y.T. Zhu**, and S.N. Mathaudhu, “Ultrastrong Mg Alloy via Nano-Spaced Stacking Faults,” *Mater. Res. Lett.* **1** (2), 61-66 (2013).
 271. Y.B. Wang, X.Z. Liao, Y.H. Zhao, J.C. Cooley, Z. Horita, and **Y.T. Zhu**, “Elemental Separation in Nanocrystalline Cu-Al Alloys,” *Appl. Phys. Lett.* **102**, 231912 (2013).
 272. W.Z. Xu, Y.F. Zhang, G.M. Cheng, W.W. Jian, P.C. Millet, C.C. Koch, S.N. Mathaudhu, and **Y.T. Zhu**, “In-Situ Atomic-Scale Observation of Void Formation Induced by Electron Radiation,” *Nature Comm.* **4** (Aug.), 2288 (2013). DOI: 10.1038/ncomms3288.
 273. G.M. Cheng, W.W. Jian, W.Z. Xu, Y.F. Zhang, P.C. Millet, and **Y.T. Zhu**, “Dislocations with Edge Components in Nanocrystalline bcc Mo,” *J. Mater. Res.* **28**, 1820-1826 (2013).
 274. Y. Cao, Y.B. Wang, Z.B. Chen, X.Z. Liao, M. Kawasaki, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “De-twinning via Secondary Twinning in Face-Centered Cubic Alloys,” *Mater. Sci. Eng. A* **578**, 110-114 (2013).

275. B.L. Zheng, Y. Li, W.Z. Xu, Y.Z. Zhou, S.V. Mathaudhu, **Y.T. Zhu**, and E.J. Lavernia, "Twinning in Cryomilled Nanocrystalline Mg Powder," *Phil. Mater. Lett.* **93** (8), 457-464 (2013).
276. W.W. Jian, G.M. Cheng, W.Z. Xu, C.C. Koch, Q.D. Wang, **Y.T. Zhu**, S.N. Mathaudhu, "Physics and Modeling of Strengthening of Metals by Parallel Stacking Faults," *App. Phys. Lett.*, **103**, 133108 (2013).
277. F. Wu, H. M. Wen, E. J. Lavernia, J. Narayan, and **Y.T. Zhu**, "Twin Intersection Mechanisms in Nanocrystalline fcc Metals," *Mater. Sci. Eng. A* **585**, 292-296 (2013).
278. Y.C. Yuan, A.B. Ma, J.H. Jiang, F.M. Lu, W.W. Jian, D. Song, and **Y.T. Zhu**, "Optimizing the Strength and Ductility of AZ91 Mg Alloy by ECAP and Subsequent Aging," *Mater. Sci. Eng. A*. **588**, 329-334 (2013).
279. A.C. Schmidt, X. Wang, **Y.T. Zhu**, L.A. Sombers, "Carbon Nanotube Yarn Electrodes for Enhanced Detection of Neurotransmitter Dynamics in Live Brain Tissue," *ACS Nano*, **7**(9), 7864-7873 (2013).
280. F. Wu, **Y.T. Zhu**, and J. Narayan, "Grain Size Effect on Twin Density in As-Deposited Nanocrystalline Cu Film," *Phil. Mag.* **93**, 4355-4363 (2013).

2014

281. Q. Jiang, X. Wang, **Y.T. Zhu**, and Y.P. Qiu, "Mechanical, Electrical and Thermal Properties of Aligned Carbon Nanotube/Polyimide Composites," *Composites B*, **56**, 408-412 (2014).
282. Y. Cao, Y.B. Wang, X.H. An, X.Z. Liao, M. Kawasaki, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, "Concurrent Microstructural Evolution of Ferrite and Austenite in Duplex Stainless Steel Processed by High-Pressure Torsion," *Acta Mater.* **63**, 16-29 (2014).
283. V. Thiagarajan, X. Wang, P.D. Bradford, **Y.T. Zhu**, and F.G. Yuan, "Stabilizing Carbon Nanotube Yarn Using Chemical Vapor Infiltration," *Composite Sci. Tech.* **90**, 82-87 (2014).
284. X.H. An, M. Song, Y. Huang, X.Z. Liao, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, "Twinning via the Motion of Incoherent Twin Boundaries Nucleated at Grain Boundaries in a Nanocrystalline Cu Alloy," *Scripta Mat.* **72-73**, 35-38 (2014).
285. F. Wu, **Y.T. Zhu**, and J. Narayan, "Macroscopic Strain by Twinning Nanocrystalline Cu," *Mater. Res. Lett.* **2**, 63-69 (2014).
286. S. Ni, X.Z. Liao, and **Y.T. Zhu**, "Effect of Severe Plastic Deformation on the Structure and Mechanical Properties of Bulk Nanocrystalline Metals," *Acta Metallurgica Sinica*, **50**(2), 156-168 (2014).
287. Z. Zhou, X. Wang, S. Faraji, P.D. Bradford, Q.W. Li, and **Y.T. Zhu**, "Mechanical and Electrical Properties of Aligned Carbon Nanotube/Carbon Matrix Composites," *Carbon*, **75**, 307-313 (2014).
288. X.L. Wu, P. Jiang, L. Chen, F.P. Yuan, and **Y.T. Zhu**, "Extra Strain Hardening Induced by Gradient Structure," *PNAS*, **111**(20), 7197-7201 (2014).
289. P. Gu, M. Dao, and **Y.T. Zhu**, "Strengthening at Nanoscaled Coherent Twin Boundary in f.c.c. Metals," *Phil. Mag.*, **94**(11), 1249-1262 (2014).
290. W. Piyawit, W.Z. Xu, S. Mathaudhu, J. Freudenberger, V.S. Sarma, M. Rigsbee, and **Y.T. Zhu**, "Nucleation and Growth Mechanism of Ag Precipitates in a CuAgZr Alloy," *Mater. Sci. Eng. A*. **610**, 85-90 (2014).
291. W.Z. Xu, C.C. Koch, **Y.T. Zhu** and R.G. Scattergood, "Nano-size ZrO₂ particles in Nanocrystalline Fe-14Cr-1.5Zr Alloy Powders," *J. Nuclear Mater.*, **452**, 434-439 (2014).
292. H. Zhou, W.Z. Xu, W.W. Jian, G.M. Cheng, X.L. Ma, W. Guo, S.N. Mathaudhu, Q.D. Wang, and **Y.T. Zhu**, "A New Metastable Precipitate Phase in Mg-Gd-Y-Zr Alloy," *Phil. Mag.* **94**, 2403-2409 (2014).
293. W.Z. Xu, Y.F. Zhang, G.M. Cheng, W.W. Jian, P.C. Millet, C.C. Koch, S.N. Mathaudhu, and **Y.T. Zhu**, "Dynamic Void Growth and Shrinkage in Mg under Electron Irradiation," *Mater. Res. Lett.*, **2**, 176-183 (2014).
294. M. Saber, W.Z. Xu, L.L. Li, **Y.T. Zhu**, C.C. Koch, and R. O. Scattergood, "Size Effect of Primary Y₂O₃ Additions on the Characteristics of the Nanostructured Ferritic ODS Alloys: Comparing As-Milled and As-Milled/Annealed Alloys Using S/TEM," *J. Nuclear Mater.*, **452**, 223-229 (2014).
295. S. Faraji, K. Stano, C. Rost, J.P. Maria, **Y.T. Zhu** and P.D. Bradford, "Structural Annealing of Carbon Coated Aligned Multi-Walled Carbon Nanotube Sheets," *Carbon*, **79**, 113-122 (2014).
296. X.L. Wu, P. Jiang, L. Chen, and **Y.T. Zhu**, "Synergetic Strengthening by Gradient Structure," *Mater. Res. Lett.* **2**, 185 -191 (2014).
297. F. Wu, S.S. Rao, J.T. Prater, **Y.T. Zhu**, and J. Narayan, "Tuning Exchange Bias in Epitaxial Ni/MgO/TiN heterostructures integrated on Si(100)," *Current Opinion in Solid State & Mater. Sci.* **18**, 263-268 (2014).
298. J.T. Di, X. Wang, Y.J. Xing, Q.W. Li, and **Y.T. Zhu**, "Dry-Processable Carbon Nanotubes for Functional Devices

and Composites,” *Small*, **10**, 4606-4625 (2014).

299. D.S. Tucker, X. Wang, Z. Zhou, M. Allen, M. Sanghadasa, and **Y.T. Zhu**, “Robust Aligned Carbon Nanotube Tape with Excellent Piezoelectric Properties,” *Recent Progress in Space Technology*, 4 (2) 2014.
 300. L.L. Li, M. Saber, W.Z. Xu, **Y.T. Zhu**, C.C. Koch, R.O. Scattergood, “High-Temperature Grain Size Stabilization of Nanocrystalline Fe-Cr Alloys with Hf Additions,” *Mater. Sci. Eng. A*, **613**, 289-295 (2014).
- 2015**
301. Y. Cao, Y.B. Wang, X.Z. Liao, M. Kawasaki, S.P. Ringer, T.G. Langdon, and **Y.T. Zhu**, “Grain Boundary Formation by Remnant Dislocations from Detwinning of thin Nano-Twins,” *Scripta Mater.* **100**, 98-101 (2015).
 302. Y.C. Yuan, A.B. Ma, J.H. Jiang, F.M. Lu, D.H. Yang, W.W. Jian, **Y.T. Zhu**, “Superior Mechanical Properties of ZK60 Mg Alloy Processed by Equal Channel Angular Pressing and Rolling,” *Mater. Sci. Eng. A*, **630**, 45-50 (2015).
 303. J.M. Tao, G.M. Cheng, W.W. Jian, J. Wang, **Y.T. Zhu**, X.K. Zhu and T.G. Langdon, “Annealing hardening of a Nanostructured Cu-Al Alloy Processed by High-Pressure Torsion and Rolling,” *Mater. Sci. Eng. A*. **628**, 207-215 (2015).
 304. P. Gu, **Y.T. Zhu** and S.N. Mathaudhu, “A Model for $\langle c+a \rangle$ Dislocation Transmission Cross Nano-Spaced Parallel Basal Stacking Faults in a HCP Alloy,” *Phil. Mag. Lett.* **95**, 58-66 (2015).
 305. X.L. Ma, W.Z. Xu, H. Zhou, J. Narayan, and **Y.T. Zhu**, “Alloying Effect on Grain-Size Effect Dependent Deformation Twinning in Nanocrystalline Cu-Zn Alloys,” *Phil. Mag.* **95**, 301-310 (2015).
 306. C.X. Huang, Q.Y. Wang, W. Hu, C. Wang, G. Yang, and **Y.T. Zhu**, “Ideal Ultrafine-Grained for High Strength and High Ductility,” *Mater. Res. Lett.*, **3**, 88-94 (2015).
 307. X.L. Ma, C.X. Huang, W.Z. Xu, H. Zhou, X.L. Wu, J. Narayan, and **Y.T. Zhu**, “Strain Hardening and Ductility in a Coarse-Grained/Nanostructure Laminated Material,” *Scripta Mater.*, **103**, 57-60 (2015).
 308. L.L. Li, W.Z. Xu, M. Saber, **Y.T. Zhu**, C.C. Koch, R.O. Scattergood, “Influence of Scandium Addition on the High-Temperature Grain Size Stabilization of Oxide-Dispersion-Strengthened Ferritic Alloy,” *Mater. Sci. Eng. A*. **636**, 565-571 (2015).
 309. F. Wu, J.K. Zhang, J. Narayan, and **Y.T. Zhu**, “Fabrication of Epitaxial Cu₃Ge Films on Sapphire with Controlled Crystallinity and Planar Defects,” *J. Alloys and Compounds*, **641**, 238-243 (2015).
 310. X.H. An, S.M. Zhu, Y. Cao, M. Kawasaki, X.Z. Liao, S.P. Ringer, J.F. Nie, T.G. Langdon, and **Y.T. Zhu**, “Atomic-scale Investigation of Interface-facilitated Deformation Twinning in Severely Deformed Cu-Ag Nanolamellar Composites,” *Appl. Phys. Lett.* **107**, 11901 (2015).
 311. H. Zhou, G.M. Cheng, X.L. Ma, W.Z. Xu, S.N. Mathaudhu, Q.D. Wang, and **Y.T. Zhu**, “Effect of Ag on Interfacial Segregation in Mg-Gd-Y0(Ag)-Zr Alloy,” *Acta Mater.* **95**, 20-29 (2015).
 312. W.Z. Xu, L.L. Li, M. Saber, C.C. Koch, **Y.T. Zhu**, and R.O. Scattergood, “Microstructures and Stabilization Mechanisms of Nanocrystalline Stability of Iron-Chromium Alloys with Hafnium Addition,” *Metall. Mater. Trans.*, **46A**, 4394-4404 (2015).
 313. X.C. Yang, X.L. Ma, J. Moering, H. Zhou, W. Wang, Y.L. Gong, J.M. Tao, **Y.T. Zhu**, and X.K. Zhu, “Influence of Gradient Structure Volume Fraction on the Mechanical Properties of Pure Copper,” *Mater. Sci. Eng. A*, **645**, 280-285 (2015).
 314. J. Moering, G.Z. Chen, X.L. Ma, P.F. Miao, G.Z. LI, G. Qian, S. Mathaudhu, **Y.T. Zhu**, “The Role of Shear Strain on Texture and Microstructural Gradients in Low Carbon Steel Processed by SMAT,” *Scripta Mat.* **108**, 100-103 (2015).
 315. L.W. Zhang, X. Wang, W.Z. Xu, Y.Y. Zhang, Q.W. Li, P.D. Bradford, and **Y.T. Zhu**, “Strong and Conductive Dry CNT Films by Micro-Combing,” *Small*, **11**, 3830-3836 (2015).
 316. L.L. Li, W.Z. Xu, M. Saber, **Y.T. Zhu**, C.C. Koch, R.O. Scattergood, “Long-Term Stability of 14YT-4Sc Alloy at High Temperature,” *Mater. Sci. Eng. A*, **647**, 222-228 (2015).
 317. X.L. Ma, H. Zhou, J. Narayan, and **Y.T. Zhu**, “Stacking-Fault Energy Effect on Zero-Strain Deformation Twinning in Nanocrystalline Cu-Zn Alloys,” *Scripta Mat.*, **109**, 89-93 (2015).
 318. S. Faraji, K. Stano, O. Yildiz, A. Li, **Y.T. Zhu**, and P.D. Bradford, “Ultralight Anisotropic Foams from Layered Aligned Carbon Nanotube sheets,” *Nanoscale*, **7** (40), 17038-17047 (2015).
 319. X.L. Wu, M.X. Yang, F.P. Yuan, G.L. Wu, C.X. Zhang, P. Jiang, X. X. Huang, and **Y.T. Zhu**, “Lamella Structure Unites Ultrafine-Grain Strength with Coarse-Grain Ductility,” *PNAS*, **112**, 14501-14505 (2015).
 320. R.Z. Valiev, **Y.T. Zhu**, “Recent Findings in Superior Strength and Ductility of Ultrafine-Grained Materials,”

Trans. Mater. Res. Soc. Jpn, 40(4), 309-318 (2015) (invited).

2016

321. L.W. Zhang, X. Wang, R. Li, Q.W. Li, P.D. Bradford, and **Y.T. Zhu**, "Microcombing Enables High Performance Carbon Nanotube Composites," *Comp. Sci. Tech.*, **123**, 92-98 (2016).
322. J.L. Wu, Y. Pan, H.B. Cao, **Y.T. Zhu**, S.W. Tao, and T. Lu, "Ultraviolet Light Irradiation on Pitting Corrosion of Cu-Based Metallic Glasses," *J. Alloys and Compounds*, **661**, 345-348 (2016).
323. R.Z. Valiev, Y. Estrin, Z. Horita, T.G. Langdon, M.J. Zehetbauer, and **Y.T. Zhu**, "Fundamentals of Superior Properties in Bulk nanoSPD Materials," *Mater. Res. Lett.*, **4**, 1-21 (2016).
324. W.Z. Xu, L.L. Li, J.A. Valdez, M. Saber, **Y.T. Zhu**, C.C. Koch, and R.O. Scattergood, "Effect of Nano-Oxide Particle Size on Radiation Resistance of Iron-Chromium Alloys," *J. Nucl. Mater.* **469**, 72-81 (2016).
325. L.L. Tang, W. Liu, Z.G. Ding, S. Li, Y.H. Zhao, and **Y.T. Zhu**, "Alloying Mg with Gd and Y: Increasing both Plasticity and Strength," *Computational Mater. Sci.* **115**, 85-91 (2016).
326. Z.G. Ding, W. Liu, S. Li, D.L. Zhang, Y.H. Zhao, E.J. Lavernia, and **Y.T. Zhu**, "Contribution of van der Waals Forces to the Plasticity of Magnesium," *Acta Mater.*, **107**, 127-132 (2016).
327. L. Qiu, G.P. Su, X.H. Zheng, J. Zhu, Z.G. Wang, D.W. Tang, P.M. Norris, P.D. Philip, and **Y.T. Zhu**, "Remarkably Enhanced Thermal Transport Based on a Flexible Horizontally-Aligned Carbon Nanotube Array Film," *Scientific Report*, **6**, 21014 (2016).
328. X.H. An, Q.Y. Lin, S. Gang, M.X. Huang, S.P. Ringer, **Y.T. Zhu** and X.Z. Liao, "Microstructural Evolution and Phase Transformation in TWIP Steel Processed by High-Pressure Torsion," *Acta Mater.*, **109**, 300-313 (2016).
329. S.J. Dai, **Y.T. Zhu**, and Z.W. Huang, "Microstructure Evolution and Strengthening Mechanisms of Pure Titanium with Nano-structured Surface Obtained by High Energy Shot Peening," *Vacuum*, **125**, 215-221 (2016).
330. R.Z. Valiev, Y. Estrin, Z. Horita, T.G. Langdon, M.J. Zehetbauer, and **Y.T. Zhu**, "Producing Bulk Ultrafine-Grained Materials by Severe Plastic Deformation: Ten Years Later," *JOM*, **68**, 1216-1226 (2016).
331. X.L. Wu, M.X. Yang, F.P. Yuan, L. Chen, E. Ma, and **Y.T. Zhu**, "Combining Gradient Structure and TRIP Effect to Produce Austenite Stainless Steel with High Strength and Ductility," *Acta Mater.* **112**, 337-346 (2016).
332. J. Moering, X.L. Ma, S. Mathaudhu, J. Malkin, X.L. Wu and **Y.T. Zhu**, "Synergetic Strengthening Far beyond Rule of Mixture in Gradient Structured Aluminum Rod," *Scripta Mater.* **122**, 106-109 (2016).
333. X.L. Ma, C.X. Huang, J. Moering, H.W. Höppel, M. Göken, J. Narayan, and **Y.T. Zhu**, "Mechanical Properties of Copper/Bronze Laminates: Role of Interfaces," *Acta Mater.* **116**, 43-52 (2016).
334. Y.F. Wu, S. Li, Z.G. Ding, W. Liu, Y.H. Zhao, and **Y.T. Zhu**, "Effect of Charge Redistribution Factor on Stacking Fault Energy of Mg-Based Binary Alloys," *Scripta Mater.* **112**, 101-105 (2016).
335. G.M. Cheng, W.Z. Xu, Y.Q. Wang, A. Misra, and **Y.T. Zhu**, "Grain Size Effect on Radiation Tolerance of Nanocrystalline bcc Metals," *Scripta Mat.* **123**, 90-94 (2016).
336. L.L. Tang, Y.H. Zhao, R. Islamgaliev, J.Y. Cao, R.Z. Valiev, E.J. Lavernia, and **Y.T. Zhu**, "Enhanced Strength and Ductility of AZ80 Mg Alloys by Spray Forming and ECAP," *Mater. Sci. Eng. A.*, **670**, 280-291 (2016).
337. Z. Yin, X.C. Yang, X.L. Ma, J. Moering, J. Yang, Y.L. Gong, **Y.T. Zhu** and X.K. Zhu, "Strength and Ductility of Gradient Structured Copper by Surface Mechanical Attrition Treatment," *Mater. Design*, **105**, 89-95 (2016).
338. M.X. Yang, Y.Pan, F.P. Yuan, Y.T. Zhu and X.L. Wu, "Back Stress Strengthening and Strain Hardening in Gradient Structure," *Mater. Res. Lett.* **4** (3), 145-151 (2016).
339. L.L. Tang, Y.H. Zhao, N.N. Liang, R.K. Islamgaliev, R.Z. Valiev, and **Y.T. Zhu**, "Localized Shear Deformation via Multiple Twinning in a Mg-Gd-Y-Zr Alloy Processed by High-Pressure Torsion," *Mat. Sci. Eng. A*, **677**, 68-75 (2016).
340. C. Page, V. Thiagarajan, X. Wang, Y.T. Zhu, F.G. Yuan, "A New Perspective on Hierarchical Structure to Analyze Strength Limiting Factors of CNT Yarns," *Int. J. Sustainable Materials and Structural Systems*, **2** (3-4), 308-334 (2016).
341. H. Yuan, M.H. Tsai, G. Sha, F. Liu, Z. Horita, **Y.T. Zhu**, J.T. Wang, "Atomic-scale Homogenization of Elemental Distribution in an fcc-based High-Entropy Alloy via Severe Plastic Deformation," *J. Alloy and Compound*. **686**, 15-23 (2016).
342. J.Y. Zou, X.H. Zhang, J.N. Zhao, C.S. Lei, Y.H. Zhao, Y.T. Zhu, and Q.W. Li, "Strengthening and Toughening Effects by Strapping Carbon Nanotube Cross-links with Polymer Molecules," *Comp. Sci. Tech*, **135**, 123-127 (2016).

343. J.F. Nie, M.X. Liu, Y.H. Zhao, Y.T. Zhu, "Fabrication of Al/Mg/Al Composites by Accumulative Roll Bonding and its Mechanical Properties," *Materials*, **9** (11), 951 (2016).
344. X.T. Fang, X.L. Ma, L.W. Zhang, and Y.T. Zhu, "Nucleation of Deformation Twins in Nanocrystalline fcc Alloys," *Philos. Mag.* **96** (36), 3790-3802 (2016).
345. S.L. Liu, X.L. Ma, L.Z. Li, P.W. Trimby, X.Z. Liao, Y.S. Li, Y.H. Zhao, **Y.T. Zhu**, "Effect of Triple Junction on Deformation Twinning in Nanostructured Cu-Zn Alloy: A Statistical Study Using Transmission Kikuchi Diffraction," *The Beilstein J. Nanotechnology*, **7**, 1501-1506 (2016).

2017

346. S. Faraji, O. Yildiz, C. Rost, K. Stano, N. Farahbakhsh, Y.T. Zhu and P.D. Bradford, "Radial Growth of Multi-walled Carbon Nanotubes in Aligned Sheets through Cyclic Carbon Deposition and Graphitization," *Carbon*, **111**, 411-418 (2017).
347. S-Y Huang, Q.W. Li, Y.T. Zhu, and P.S. Fedkiw, "Carbon Buckypaper as an Electrocatalyst Support for Oxygen Reduction," *J. Appl. Electrochemistry*, **47** (1), 105-115 (2017).
348. J.F. Nie, F. Wang, Y.S. Li, Y. Cao, X.F. Liu, Y.H. Zhao, Y.T. Zhu, "Microstructural Evolution and Mechanical Properties of Al-TiB₂/TiC in-situ Aluminum Based Composites during Accumulative Roll Bonding (ARB) Process," *Materials*, **10** (2), 109 (2017).
349. Y.H. Zhao and Y.T. Zhu, "Lattice Expansion and Excess Grain Boundary Volume of Nanocrystalline Se Prepared by Mechanical Milling," *Rev. Adv. Mater. Sci.*, **48**, 52-61 (2017).
350. N.N. Liang, Y.H. Zhao, J.T. Wang, and **Y.T. Zhu**, "Effect of Grain Structure on the Charpy Impact Behavior of Copper," *Sci. Report*, **7**, 44783 (2017).
351. W.Z. Xu, Y.F. Zhang, G.M. Cheng, S.N. Mathaudhu, R.O. Scattergood, C.C. Koch, E.J. Lavernia, and Y.T. Zhu, "On the Origin and Behavior of Irradiation-Induced C-Component Loops in Mg," *Acta Mat.* **131**, 457-466 (2017).
352. S.L. Liu, Z.L. Pan, Y.H. Zhao, T. Topping, R.Z. Valiev, X.Z. Liao, E.J. Lavernia, Y.T. Zhu, and Q. Wei, "Effect of Strain Rate on the Mechanical Properties of a Gum Metal with Various Microstructures," *Acta Mater.* **132**, 193-208 (2017).
353. L.L. Tang, Y.H. Zhao, R.K. Islamgaliev, R.Z. Valiev, and Y.T. Zhu, "Microstructure and Thermal Stability of Nanocrystalline Mg-Gd-Y-Zr Alloy Processed by High-Pressure Torsion," *J. Alloy and Comp.* **721**, 577-585 (2017).
354. J.Y. Zou, X.H. Zhang, C. Cu, Y.T. Zhu, and Q.W. Li, "Soldering Carbon Nanotube Fibers by Targeted Local Electrothermal-Induced Carbon Deposition," *Carbon*, **121**, 242-247 (2017).
355. X.D. Bian, F.P. Yuan, X.L. Wu, and Y.T. Zhu, "Evolution of Strain Gradient and Anisotropy in Gradient Structured Metal," *Metall. Mater. Trans.* **48A**, 3951-3960 (2017).
356. X.Z. Hu, S.B. Jin, H. Zhou, Z. Yin, J. Yang, Y.L. Gong, Y.T. Zhu, G. Sha, and X.K. Zhu, "Bauschinger Effect and Back Stress in Gradient Cu-Ge Alloy," *Metall. Mater. Trans. A.* **48A**, 3943-3950 (2017).
357. J.J. Sun, Y.N. Liu, Y.T. Zhu, F.L. Lian, H.J. Liu, T. Jiang, S.W. Guo, W.Q. Liu, and X.B. Ren, "Super-strong Dislocation-Structured High-Carbon martensite Steel," *Scientific Report*, **7**, 6596 (2017).
358. X. Wang, Y.S. Li, Q. Zhang, Y.H. Zhao, and Y.T. Zhu, "Gradient-Structured Copper by Rotationally Accelerated Shot Peening," *J. Mater. Sci. Tech.*, **33**, 758-761 (2017).
359. X.D. Bian, F.P. Yuan, X.L. Wu, and Y.T. Zhu, "Gradient Structure Produces Superior Dynamic Shear Properties," *Mat. Res. Lett.* **7**, 501-507 (2017).
360. Y.Y. Yu, L.W. Zhang, O. Yildiz, H.T. Deng, C.H. Zhao, P.D. Bradford, J.Y. Li, and Y.T. Zhu, "Investigation of Microcombing Parameters in Enhancing the Properties of Carbon Nanotube Yarns," *Mater. Design*, **134**, 181-187 (2017).
361. X.L. Wu and Y.T. Zhu, "Heterogeneous Materials: A New Class of Materials with Unprecedented Mechanical Properties," *Mater. Res. Lett.*, **5**, 527-542 (2017).
362. Y.S. Li, L.Z. LI, Y. Cao, J.F. Nie, Y.H. Zhao, Y.T. Zhu, "Microstructure Evolution and Mechanical Properties of 5052 Alloy with Gradient Structures," *J. Mater. Res.*, **32**, 4443-4451 (2017).

2018

363. N.N. Liang, J.Z. Liu, S.C. Lin, Y. Wang, J.T. Wang, Y.H. Zhao, and Y.T. Zhu, "A Multiscale Architected Cu-Cr-Zr Alloy with High Strength, Electrical Conductivity and Thermal Stability," *J. Alloy Compounds.*, **736**, 1389-1394 (2018).
364. Z.G. Ding, W. Liu, A. Sun, S. Li, D.L. Zhang, Y.H. Zhao, E.J. Lavernia, and Y.T. Zhu, "Origins and Dissociation

- of Pyramidal II <c+a> dislocations in Magnesium and its Alloys,” *Acta Mater.*, **146**, 265-272 (2018).
365. D.N. Ho, O. Yildiz, P. Bradford, Y.T. Zhu, P.S. Fedkiw, “A Silicon-Impregnated Carbon Nanotube Mat as a Lithium-Ion Cell Anode,” *J. Appl. Electrochem.* **48**, 127-133 (2018).
 366. I.A. Ovid’ko, R.Z. Valiev, and Y.T. Zhu, “Review on Superior Strength and Enhanced Ductility of Metallic Nanomaterials,” *Prog. Mater. Sci.* **94**, 462-540 (2018).
 367. J.Y. Zou, D.D. Liu, J.N. Zhao, L.G. Hou, T. Liu, X.H. Zhang, Y.H. Zhao, Y.T. Zhu, and Q.W. Li, “Ni Nano Buffer Layer Produces Robust, Light-Weight CNT/Cu Fibers with Superior Conductivity and Amperity,” *ACS Applied Materials & Interfaces*, **10**, 8197-8204 (2018).
 368. Y.F. Wang, C.X. Huang, M.S. Wang, Y.S. Li, and Y.T. Zhu, “Quantifying the Synergetic Strengthening in Gradient Materials,” *Scripta Mat.*, **150**, 22-25 (2018).
 369. J.N. Zhao, X.H. Zhang, Y.Y. Huang, J.Y. Zou, N.N. Liang, F.P. Yu, Z.J. Pan, Y.T. Zhu, M.H. Miao, and Q.W. Li, “A Comparison of the Twisted and Untwisted Structures for One-Dimensional Carbon Nanotube Assemblies,” *Mater. Design*, **146**, 20-27 (2018).
 370. T.Z. Han, G.S. Huang, Q.Y. Deng, G.G. Wang, B. Jiang, A.T. Tang, Y.T. Zhu, and F.S. Pan, “Grain Refining and Mechanical Properties of AZ31 Alloy Processed by Accumulated Extrusion Bonding,” *J. Alloys and Compounds*, **745**, 599-608 (2018).
 371. X.L. Liu, M.X. Yang, F.P. Yuan, Y.T. Zhu, and X.L. Wu, “Extraordinary Bauschinger Effect in Gradient Structured Copper,” *Scripta Mat.* **150**, 57-60 (2018).
 372. Z.G. Fu, Z. Zhang, L.F. Meng, B.P. Shu, Y.T. Zhu, and X.K. Zhu, “Effect of Strain Rate on Mechanical Properties of Cu/Ni Multilayered Composites Processed by Electrodeposition,” *Mater. Sci. Eng. A*, **726**, 154-159 (2018).
 373. D.A. Colledge and Y.T. Zhu, “Alleviating Surface Tensile Stress in E-beam Treated Tool Steels by Cryogenic Treatment,” *Mater. Sci. Eng. A*, **722**, 167-172 (2018).
 374. J.S. Li, B. Gao, Y. Cao, Y.S. Li, and Y.T. Zhu, “Superior Strength and Ductility of 316L Stainless Steel with Heterogeneous Lamella Structure,” *J. Mater. Sci.* **53**, 10442-10456 (2018).
 375. Y.Y. Yu, C.H. Zhao, Q.W. Li, J.Y. Li, and Y.T. Zhu, “A Novel Approach to Align Carbon Nanotubes via Water-Assisted Shear Stretching,” *Comp. Sci. Tech.* **164**, 1-7 (2018).
 376. N.N. Liang, Y.H. Zhao, Y. Li, T. Topping, J.T. Wang, Y.T. Zhu, R.Z. Valiev, and E.J. Lavernia, “Influence of Microstructure on Thermal Stability of Ultrafine Grained Cu Processed by Equal Channel Angular Pressing,” *J. Mater. Sci.*, **53**, 13173-13185 (2018).
 377. Y. Cao, S. Ni, X.Z. Liao, N. Song, and Y.T. Zhu, “Structural Evolutions of Materials Processed by Severe Plastic Deformation,” *Mater. Sci. Eng. R.*, **133**, 1-59 (2018).
 378. C.X. Huang, Y.F. Wang, X.L. Ma, S. Yin, H.W. Höppel, M. Göken, X.L. Wu, H.J. Gao, and Y.T. Zhu, “Interface Affected Zone for High Strength and Ductility in Heterogeneous Laminate,” *Mater. Today*, **21**, 713-719 (2018).
 379. Y.T. Zhu and X.L. Wu, “Ductility and Plasticity of Nanostructured Metals: Differences and Issues,” *Mater. Today Nano*, **2**, 15-20 (2018).
- 2019**
380. Z.W. Huang, S.B. Jin, Y.S. Li, Y. Cao, H. Zhou, Y.H. Zhao, Y.T. Zhu, “Evolution of Twinning Systems and Variants during Sequential Twinning in Cryo-Rolled Titanium,” *Intl J. Plasticity*, **112**, 52-67 (2019).
 381. L.R. Xiao, X.L. Ma, L. Mao, X.C. Sha, L.H. Wang, Q.D. Wang, Y.T. Zhu, H. Zhou, and X.D. Han, “The Formation Mechanism of a Novel Interfacial Phase with High Thermal Stability in a Mg-Gd-Y-Ag Alloy,” *Acta Mat.* **162**, 214-225 (2019).
 382. F.P. Yuan, D.S. Yan, J.D. Sun, Y.H. Zhao, Y.T. Zhu, and X.L. Wu, “Ductility by Strain Delocalization in the Nano-Layer of Gradient Structure,” *Mater. Res. Lett.*, **7**, 12-17 (2019).
 383. Y.F. Liu, F. Wang, Y. Cao, J.F. Nie, H. Zhou, H.B. Yang, X.F. Liu, X.H. An, X.Z. Liao, Y.H. Zhao, Y.T. Zhu, “Unique Defect Evolution during the Plastic Deformation of a Metal Matrix Composite,” *Scripta Mat.* **162**, 316-320 (2019).
 384. A.H. Huang, Y.F. Wang, M.S. Wang, L.Y. Song, Y.S. Li, L. Gao, C.X. Huang, and Y.T. Zhu, “Optimizing the Strength, Ductility and Electrical Conductivity of a Cu-Cr-Zr Alloy by Rotary Swaging and Aging Treatment,” *Mater. Sci. Eng. A.*, **746**, 211-216 (2019).
 385. X.D. Chen, Y.T. Zhu, Y.S. Li, and B. Yang, “Enhanced Radiation and Corrosion Resistance of 316L Stainless Steel with High Densities of Dislocations and Twins,” *J. Nucl. Mater.*, **517**, 234-240 (2019).
 386. X.D. Chen, Y.S. Li, Y.T. Zhu, Y.K. Bai, and B. Yang, “Improved Corrosion Resistance of 316LN Stainless Steel

- Performed by Rotationally Accelerated Shot Peening,” *Appl. Surface Sci.*, **481**, 1305-1312 (2019).
387. H. Zhou, C.X. Huang, X.C. Sha, X.L. Ma, H.W. Höppel, M. Göken, X.L. Wu, X.D. Han, and Y.T. Zhu, “In-situ observation of dislocation dynamics near heterostructured interfaces,” *Mater. Res. Lett.*, **7**, 376-382 (2019).
 388. H. Sun, Z.G. Ding, D.L. Zhang, H. Zhou, S. LI, E.J. Lavernia, Y.T. Zhu, and W. Liu, “Predicting the Formation of $\langle c+a \rangle$ Dislocations in Magnesium Alloys from multiple Stacking Fault Energies,” *Mater.* **7**, 100352 (2019).
 389. Y.T. Zhu and X.L. Wu, “Perspective on Hetero-deformation Induced (HDI) Hardening and Back Stress,” *Mater. Res. Lett.* **7**, 393-398 (2019).
 390. Y.F. Wang, C.X. Huang, Q. He, F.J. Guo, M.S. Wang, L.Y. Song, and Y.T. Zhu, “Heterostructure Induced Dispersive Shear Bands in Heterostructured Cu,” *Scripta Mat.* **170**, 76-80 (2019).
 391. M.X. Yang, R.G. Li, P. Jiang, F.P. Yuan, Y.D. Wang, Y.T. Zhu, X.L. Wu, “Residual Stress Provides Significant Strengthening and Ductility in Gradient Structured Materials,” *Mater. Res. Lett.*, **7**, 433-438 (2019).
 392. X.K. Ma, F.G. Li, J. Cao, Z.K. Sun, X.T. Fang, C.C. Koch, and Y.T. Zhu, “Achieving Gradient Martensite Structure and Enhanced Mechanical Properties in a Metastable β Titanium Alloy,” *Metall. Mater. Trans. A*, **50**, 2126-2138 (2019).
 393. Y.S. Li, L.J. Dai, Y. Cao, Y.H. Zhao, and Y.T. Zhu, “Grain Size Effect on Deformation Twin Thickness in a Nanocrystalline Metal with Low Stacking Fault Energy,” *J. Mater. Res.* **34** (13) 2398-2405 (2019).
 394. M.N. Hasan, Y.F. Liu, X.H. An, J. Gu, M. Song, Y. Cao, Y.S. Li, Y.T. Zhu, and X.Z. Liao, “Simultaneously Enhancing Strength and Ductility of High-Entropy Alloys via Gradient Hierarchical Microstructures,” *Intl. J. Plasticity*, **123**, 178-195 (2019).
 395. Y.F. Wang, M.S. Wang, X.T. Fang, Q. He, F.J. Guo, R.O. Scattergood, C.X. Huang, Y.T. Zhu, “Extra Strengthening in a Coarse/Ultrafine grained laminate: Role of Gradient Interfaces,” *Intl. J. Plasticity*, **123**, 196-207 (2019).
 396. X.T. Fang, G.Z. He, M. Ruiz, C. Zheng, Y.F. Wang, Z.K. LI, and Y.T. Zhu, “Influence of Annealing Parameters on the Mechanical Properties of Heterogeneous Lamella Structured 5083 Al Alloy,” *Lett. Mater.*, **9**, 556-560 (2019).
- 2020**
397. W. Jiang, H. Zhou, J.F. Nie, Y. Cao, Y.S. Li, Y.H. Zhao, M. Kawasaki, T.G. Langdon, and Y.T. Zhu, “On the Heterogeneity of Local Shear Strain Induced by High-Pressure Torsion,” *Adv. Eng. Mater.*, 1900477 (2020).
 398. Y.F. Wang, C.X. Huang, X.T. Fang, H.W. Höppel, M. Göken, and Y.T. Zhu, “Hetero-Deformation Induced (HDI) Hardening Does not Increase Linearly with Strain Gradient,” *Scripta Mater.* **174**, 19-23 (2020).
 399. X.F. Chen, L.R. Xiao, Z.G. Ding, W. Liu, Y.T. Zhu, and X.L. Wu, “Atomic Segregation at Twin Boundaries in a Mg-Ag Alloy,” *Scripta Mat.* **178**, 193-197 (2020).
 400. J.Z. Liu, J.L. Zheng, R. Hu, Y.D. Zhang, G. Sha, and Y.T. Zhu, “Formation of Solute nanostructures in an Al-Zn-Mg Alloy during Natural Aging,” *J. Alloy Compounds*. 821, 153572 (2020).
 401. Y.F. Wang, C.X. Huang, Y.S. Li, F.J. Guo, Q. He, L.Y. Song, X.L. Wu, R.O. Scattergood, Y.T. Zhu, “Dense Dispersed Shear Bands in Gradient-Structured Ni,” *Intl. J. Plasticity*. **124**, 186-198 (2020).
 402. L.R. Xiao, X.F. Chen, Y. Cao, H. Zhou, X.L. Ma, B. Ye, Q.D. Wang, X.D. Han, and Y.T. Zhu, “Solute segregation Assisted Nanocrystallization of a cold-rolled Mg-Ag Alloy during annealing,” *Scripta Mat.* **177**, 69-73 (2020).
 403. Z.G. Ding, G.X. Zhao, H. Sun, S. Li, F. Ma, E.J. Lavernia, Y.T. Zhu, W. Liu, “Alloying Effect on the Plasticity of Magnesium: Comprehensive Analysis of Influences of All Five Slip Systems,” *J. Phys: Condensed Matter*. **32**, 015401 (2020).
 404. J.F. Nie, F.H. Lu, X. Ma, Z.W. Huang, X.F. Liu, Y.H. Zhao, and Y.T. Zhu, “Improving the High-Temperature Ductility of Al Composites by Tailoring Nanoparticle Network,” *Materialia*, **9**, 100523 (2020).
 405. Y.H. Zhao, J.F. Bingert, T. Topping, P.L. Sun, X.Z. Liao, Y.T. Zhu, E.J. Lavernia, “Mechanical Behavior, Deformation Mechanism and Microstructure Evolutions of Ultrafine-Grained Al during Recovery via Annealing,” *Mater. Sci. Eng. A*, **772**, 138706 (2020).
 406. Z.K. Li, X.T. Fang, Y.F. Wang, X.K. Ma, P. Jaing, X.L. Wu, J.J. Wang, C.M. Liu, Y.T. Zhu, and C.C. Koch, “Tuning Heterostructure with Powder Metallurgy for High Synergistic Strengthening and Hetero-Deformation Induced Hardening,” *Mat. Sci. Eng. A*, **777**, 139074 (2020).
 407. X.T. Fang, G.Z. He, C. Zheng, X.L. Ma, D. Kaoumi, and Y.T. Zhu, “Effect of Heterostructure and Hetero-deformation induced hardening on the Strength and Ductility of Brass,” *Acta Mater.* **186**, 644-655 (2020).
 408. Y.F. Liu, Y. Cao, H. Zhou, Y.H. Zhao, Q.Z. Mao, W. Jiang, Y. Liu, J.T. Wang, Z.S. You, and Y.T. Zhu, “Critical

- Microstructures and Defects in Heterostructured Materials and Their Effects on Mechanical Properties,” *Acta Mater.* **189**, 129-144 (2020).
409. Y.F. Wang, C.X. Huang, and Y.T. Zhu, “Shear Band Instability and Uniform Elongation of Gradient Structured Materials: Role of Lateral Constraint,” *Extreme Mechanics Lett.*, **37**, 100686 (2020).
 410. J.X. Zhang, Y. Cao, H.J. Pan, H.L. Gao, X. Yang, X.F. Li, X.M. Liu, B.P. Shu, Y.T. Zhu, K. Ameyama, X.K. Zhu, “Influence of Strain Rate on Mechanical Behaviors of Gradient-Structured Copper,” *Mater. Trans.* **61**(4), 708-717 (2020).
 411. Z.C. Zhou, S.Z. Wang, J.S. Li, Y.S. Li, X.L. Wu, and Y.T. Zhu, “Hardening after Annealing in Nanostructured 316 Stainless Steel,” *Nano Mater. Sci.* **2**, 80-82 (2020).
 412. S.S. Liu, J.L. Zhang, X. Chen, G.S. Huang, D.B. Xia, A.T. Tang, Y.T. Zhu, B. Jiang, and F.S. Pan, “Improving Mechanical Properties of Heterogeneous Mg-Gd Alloy Laminate via Accumulative Extrusion Bonding,” *Mater. Sci. Eng. A*, **785**, 139324 (2020).
 413. X.L. Wu, Y.T. Zhu and K. Lu, “Ductility and Strain Hardening in Gradient and Lamellar Structured Materials,” *Scripta Mat.* (invited viewpoint), **186**, 321-325 (2020). [NCSU](#)
 414. Y.F. Liu, Y. Cao, H. Zhou, X.F. Chen, Y. Liu, L.R. Xiao, X.W. Xuan, Y.H. Zhao, and Y.T. Zhu, “Mechanical Properties and Microstructures of Commercial Purity Aluminum Processed by Rotational Accelerated Shot Peening,” *Adv. Eng. Mater.* **22**, 1900478 (2020). [NCSU](#)
 415. S.L. Liu, Y.Z. Guo, Z.L. Pan, X.Z. Liao, E.J. Lavernia, Y.T. Zhu, Q.M. Wei, and Y.H. Zhao, “Microstructural Softening Induced Adiabatic Shear Banding in Ti-23Nb-0.7Ta-2Zr-O Gum Metal,” *J. Mater. Sci. Tech.*, **54**, 31-39 (2020). [NCSU](#)
 416. F.J. Guo, Y.F. Wang, M.S. Wang, Q. He, H. Ran, C.X. Huang, and Y.T. Zhu, “Hetero-deformation Induced Strengthening and Toughening of Pure Iron with Reverse and Multi-gradient Structures,” *Mater. Sci. Eng. A*, **782**, 139256 (2020). [NCSU](#)
 417. X.D. Chen, Y.S. Li, Y.T. Zhu, Y.F. Chen, B. Wang, “Layer-by-Layer Corrosion Behavior of 316LN Stainless Steel with a Gradient Nanostructured Surface,” *Electrochem. Comm.*, **110**, 106642 (2020). [NCSU](#)
 418. B. Gao, Q.Q. Lai, Y. Cao, R. Hu, L.R. Xiao, Z.Y. Pan, N.N. Liang, Y.S. Li, G. Sha, M.P. Liu, H. Zhou, and Y.T. Zhu, “Ultra-strong Low-Carbon Nano-steel Produced by Heterostructure and Interstitial Mediated Warm Rolling,” *Science Advance*, **6**, eaba8169 (2020). [NCSU](#)
 419. P.J. Shi, Y.B. Zhang, Y. Li, W.L. Ren, T.X. Zheng, S. Zhe, B. Yang, J.C. Peng, P.F. Hu, Y. Zhang, P.K. Liaw, and Y.T. Zhu, “Multistage Work Hardening Assisted by Multi-type Twinning in Ultrafine-Grained Heterostructural Eutectic High-Entropy Alloys,” *Mater. Today*, **41**, 62-71 (2020). [NCSU](#)
 420. J.F. Nie, Y.Y. Chen, X. Chen, Y.S. Li, X.F. Liu, Y.H. Zhao, Y.T. Zhu, “Stiff, Strong, and Ductile Heterostructured Aluminum Composites Reinforced with Oriented Nanoplatelets,” *Scripta Mat.* **189**, 140-144 (2020). [CityU](#)
 421. N.N. Liang, X. Wang, Y. Cao, Y.S. Li, Y.T. Zhu and Y.H. Zhao, “Effective Surface Nanocrystallization of Ni₂FeCoMo_{0.5}V_{0.2} Medium Entropy Alloy by Rotationally Accelerated Shot Peening (RASP),” *Entropy*, **22**, 1074 (2020).
- 2021**
422. Y.T. Zhu, K. Ameyama, P.M. Anderson, I.J. Beyerlein, H.J. Gao, H.S. Kim, E.J. Lavernia, S.N. Mathaudhu, H. Maghrabi, R.O. Ritchie, N. Tsuji, X.Y. Zhang, and X.L. Wu, “Heterostructured Materials: Superior Properties from Hetero-Zone Interaction,” *Mater. Res. Lett.*, **9**, 1-30 (2021). [CityU](#)
 423. L.R. Xiao, X.F. Chen, K. Wei, Y. Liu, D.D. Yin, Z.H. Hu, H. Zhou, Y.T. Zhu, “Effect of Dislocation Configuration on Ag Segregation in Subgrain Boundary of a Mg-Ag Alloy,” *Scripta Mat.* **191**, 219-224 (2021). [NCSU](#)
 424. J.F. Nie, Y.F. Liu, F. Wang, H. Zhou, Y. Cao, X.F. Liu, Y.T. Zhu, Y.H. Zhao, “Key Roles of Particles in Grain Refinement and Materials Strengthening for an Aluminum Matrix Composite,” *Mater. Sci. Eng. A*. **801**, 140414 (2021). [CityU](#)
 425. K. Wei, R. Hu, L.R. Xiao, Z.H. Hu, Y. Cao, D.D. Yin, H. Zhou, Y.H. Zhao, and Y.T. Zhu, “Grain Size Effect on Tensile Properties and Slip Systems of Pure Magnesium,” *Acta Mat.* **206**, 116604 (2021). [CityU](#)
 426. Z.F. He, N. Jia, H.L. Yan, Y.F. Shen, M.W. Zhu, X.J. Guan, S.B. Jin, G. Sha, Y.T. Zhu, and C.T. Liu, “Multi-Heterostructure and Mechanical Properties of N-Doped FeMnCoCr High Entropy Alloy,” *Intl J. Plasticity*, **139**, 102965 (2021).
 427. X.L. Wu and Y.T. Zhu, “Gradient and Lamellar Heterostructures for Superior Mechanical Properties,” *MRS Bulletin*, **46**, 244-249 (2021). [CityU](#)

428. X.L. Wu, M.X. Yang, R.G. Li, P. Jiang, F.P. Yuan, Y.D. Wang, Y.T. Zhu, Y.G. Wei, "Plastic Accommodation during Tensile Deformation Gradient Structure," *Sci. China Materials*, **64**(6), 1534-1544 (2021). [CityU](#)
429. M.J. Perry, H.A. Rauch, R.J. Griffiths, D. Garcia, J.M. Sietins, Y.H. Zhu, Y.T. Zhu, and H. Yu, "Tracing Plastic Deformation and Concurrent Grain Refinement during Additive Friction Stir Deposition," *Materialia*, **18**, 101159 (2021).
430. Y.F. Liu, Y. Zhang, Y. Cao, W. Liu, Q.Z. Mao, H. Zhou, W. Jiang, Y.H. Zhao, Y.T. Zhu, "Significance of Surface Layer Integrity for Sustaining the Ductility of Gradient-Structured Nickel," *Mater. Lett.* **303**, 130491 (2021).
431. Y. Estrin, Yan Beygelzimer, R. Kulagin, P. Gumbsch, P. Fratzl, Y.T. Zhu, and Horst Hahn, "Architecturing Materials at Mesoscale: Some Current Trends," *Mater. Res. Lett.*, **9**, 399-421 (2021). [CityU](#)
432. M. Naeem, H. Zhou S. Harjo, T. Kawasaki, S. Lan, Z.D. Wu, Y.T. Zhu, and X.L. Wang, "Martensitic Transformation in CrCoNi Medium Entropy Alloy at Cryogenic Temperature," *Appl. Phys. Lett.* **119**, 131901 (2021).
433. Y.F. Wang, C.X. Huang, Y.S. Li, X.L. Wu, and Y.T. Zhu, "Inter-zone Constraint Modifies the Stress-Strain Response of Constituent Layers in Gradient Structure," *Sci. China Mater.* **64**, 3114-3123 (2021). [CityU](#)
434. L.W. Zhang, X.L. Ma, Y.Y. Zhang, P.D. Bradford, and Y.T. Zhu, "Length-Dependent Carbon Nanotube Film Structure and Mechanical Properties," *Nanotechnology* **32**, 265702 (2021).
435. J.R. Yang, L. Xu, H.L. Gao, X.F. Li, H.J. Pan, B.P. Shu, T. Itoh, Y.T. Zhu, X.K. Zhu, "Effect of Global Constraint on the Mechanical Behavior of Gradient Materials," *Mater. Sci. Eng. A*. **826**, 141963 (2021). [CityU](#)
436. Y.T. Zhu, "Heterostructured Materials: A Fast Emerging Field," *Metroll. Mater. Trans. A* **52**(11), 4715-4726 (2021). (2020 Institute of Metals/Robert Franklin Mehl Award Lecture).

2022

437. X.T. Fang, Z.K. Li, Y.F. Wang, M. Ruiz, X.L. Ma, H.Y. Wang, Y. Zhu, R. Schoell, C. Zheng, D. Kaoumi, and Y.T. Zhu, "Achieving High Hetero-deformation Induced (HDI) Strengthening and Hardening in Brass by Dual Heterostructures," *J. Mater. Sci. Tech.*, **98**, 244-247 (2022). [NCSU](#)
438. Y.F. Wang, Y.G. Wei, Z.F. Zhao, Z.Y. Lin, F.J. Guo, Q. Cheng, C.X. Huang, and Y.T. Zhu, "Mechanical Response of the Constrained Nanostructured Layer in Heterogeneous Laminate," *Scripta Mat.* **207**, 114310 (2022).
439. Y.F. Wang, Y.G. Wei, Z.F. Zhao, H. Long, Z.Y. Lin, F.J. Guo, Q. He, C.X. Huang, Y.T. Zhu, "Activating Dispersed Strain Bands in Tensioned Nanostructure Layer for High Ductility: The Effect of Microstructure Inhomogeneity," *Intl. J. Plasticity*, **149**, 103159 (2022).
440. X.X. Dong, Y.F. Shen, N. Jia, and Y.T. Zhu, "Improving Mechanical Properties and Retained Austenite Stability of a Medium Carbon Q&P Steel by Adjusting Phase Ratio," *Mater. Sci. Eng. A.*, **833**, 142580 (2022).
441. W. Jiang, Y.T. Zhu, and Y.H. Zhao, "Mechanical Properties and Deformation Mechanisms of Heterostructured High-Entropy and Medium-Entropy Alloys," *Frontiers in Materials*, **8**, 792359 (2022).
442. J.X. Huang, Y. Liu, T. Xu, X.F. Chen, Q.Q. Lai, L.R. Xiao, Z.Y. Pan, B. Gao, H. Zhou, Y.T. Zhu, "Dual-Phase Heterostructured Strategy to Improve Ductility of Low Carbon Martensitic Steel," *Mater. Sci. Eng. A*. **834**, 142584 (2022).
443. S.S. Liu, H. Liu, X. Chen, G.S. Huang, Q. Zou, A.T. Tang, B. Jiang, Y.T. Zhu, F.S. Pan, "Effect of Texture on Deformation Behavior of Heterogeneous Mg-13Gd with Strength-Ductility Synergy," *J. Mater. Sci. Tech.*, **113**, 271-286 (2022).
444. H. Liu, B. Gao, Y. Yang, M.N. Xu, X.F. Li, C. Li, J.R. Yang, H.J. Pan, H. Zhou, X.K. Zhu, and Y.T. Zhu, "Strain Hardening Behavior and Microstructure Evolution of Gradient-Structured Cu-Al Alloys with Low Stacking Fault Energy," *J. Mater. Res. Tech.*, **19**, 220-229 (2022).
445. Y.Z. Guo, Z.X. Wang, B. Zhang, J. Teng, W.X. Song, L.L. Liu, Z. Zhang, L.H. Wang, Y.T. Zhu, X.D. Han, "Twin Thickness and Dislocation Interactions affect the Incoherent Twin Boundary Phase in Face-Centered Cubic Metals," *Cell Reports Physical Science*, **3**, 100736 (2022).
446. Y. Li, P.J. Shi, M.Y. Wang, Y.P. Yang, Y. Wang, Y.Q. Li, Y.B. Wen, W.L. Ren, N. Min, Y. Chen, Y.F. Guo, Z. Shen, T.X. Zheng, N.N. Liang, W.J. Lu, P.K. Liaw, Y.B. Zhong, and Y.T. Zhu, "Unveiling Microstructural Origins of the Balanced Strength-Ductility Combination in Eutectic High-Entropy Alloys at Cryogenic Temperatures," *Mater. Res. Lett.* **10**, 602-610 (2022).
447. G.S. Sun, J.Z. Liu, and Y.T. Zhu, "Heterostructure Alleviates Lüders Deformation of Ultrafine-Grained Stainless Steels," *Mat. Sci. Eng. A*, **848**, 143393 (2022).
448. L. Romero-Resendiz, M. El-Tahawy, T. Zhang, M. C. Rossi, D.M. Marulanda-Cardona, T. Yang, V. Amigó-

- Borrás, Y. Huang, H. Mirzadeh, I.J. Beyerlein, J.C. Huang, T.G. Langdon, and Y.T. Zhu, “Heterostructured stainless steel: properties, current trends and Future perspectives,” *Mater. Sci. Eng. R*, **150**, 100691 (2022).
449. X.L. Xing, Y.W. Li, S. Meng, Z.J. Shi, Y.F. Zhou, Q.X. Yang, J.W. Xiao, Y.T. Zhu, C. Deng, “Electronically Engineering Microstructural Design for Developing Advanced Steels: An Exploration of High Si Bainitic Steels,” *Materials & Design*, **221**, 11101 (2022).
450. Y.F. Wang, Y.T. Zhu, X.L. Wu, and Y.G. Wei, “Hetero-zone boundary affected region: a primary microstructural factor controlling extra work hardening in heterostructure,” *Acta Mater.* **241**, 118395 (2022).
451. X.L. Wu and Y.T. Zhu, “Heterostructured Metallic Materials: Plastic Deformation and Strain Hardening,” *Acta Metall. Sinica*, **58** (11), 1349-1359 (2022).
452. L.R. Xiao, X.F. Chen, H.Y. Ning, J. Ping, Y. Liu, B. Chen, D.D. Yin, H. Zhou, and Y.T. Zhu, “Unexpected High-Temperature Brittleness of a Mg-Gd-Y-Ag Alloy,” *J. Magnesium and Alloys*, **10**, 2510-2515 (2022).
453. T.H. Chou, W.P. Li, H.W. Chang, X.H. Du, W.S. Chuang, T. Yang, Y.T. Zhu, and J.C. Huang, “Quantitative Analysis of Hetero-deformation Induced Strengthening in Heterogeneous Grain Structure,” *Intl J. Plasticity*, **159**, 103482 (2022).
454. Z.W. Huang, D.H. Wen, X.H. Jiang, A.D. Wang, Y.S. Li, Y. Cao, X.D. Hou, B. Wang, Y.T. Zhu, “Additional Dislocation Slip Determined Excess Yield Stress in Titanium,” *Mater. Sci. Eng. A*. **861**, 144387 (2022).
- 2023**
455. Y.T. Zhu and X.L. Wu, “Heterostructured Materials,” *Prog. Mater. Sci.* **131**, 101019 (2023).
456. X.X. Dong, Y.F. Shen, and Y.T. Zhu, “Moderating Strain Hardening Rate to Produce High Ductility and High Strength in Medium Carbon TRIP Steel,” *Mater. Res. Lett.* **11**, 69-75 (2023).
457. J.B. Li, K.J. Lu, Y. Wang, Y.Q. Zhang, X.K. Ma, J.M. Chen, and Y.T. Zhu, “Exceptional Cryogenic Strength-Ductility Combination of a Nanotwinned High-Entropy Alloy with Multiple Deformation Mechanisms Fabricated by Cryogenic Multi-directional Compression,” *J. Alloy and Compound*, **931**, 167533 (2023).
458. Z.R. Fu, B. Gao, X.F. Li, C. Li, H.J. Pan, H.D. Niu, Y.T. Zhu, H. Zhou, X.K. Zhu, H.J. Wu, and C. Liu, “Improved Strength-Ductility Combination of Pure Zr by Multi-scale Heterostructured Effects via Rotary Swaging and Annealing,” *Mater. Sci. Eng. A*, **864**, 144584 (2023).
459. Y.F. Wang, X.L. Ma, F.J. Guo, Z.F. Zhao, C.H. Huang, Y.T. Zhu, and Y.G. Wei, “Strong and Ductile CrCoNi Medium-Entropy Alloy via Dispersed Heterostructure,” *Mater. Design*, **225**, 111593 (2023).
460. W.Y. Chen, R. Zhou, W.P. Li, Y.H. Chen, T.S. Chou, X. Wang, Y. Liu, Y.T. Zhu, “Effect of Interstitial Carbon and Nitrogen on Corrosion of FeCoCrNi Multi-Principal Element Alloys made by Selective Laser Melting,” *J. Mater. Sci. Tech.*, **148**, 52-63 (2023).
461. Y.F. Liu, Y. Cao, W. Liu, Q.Z. Mao, H. Zhou, Y.H. Zhao, and Y.T. Zhu, “Adiabatic Shear Localization Induced by Rotationally Accelerated Shot Peening,” *J. Mater. Sci.*, **58**, 1670-1679 (2023).
462. W.Y. Chen, R. Zhou, W.P. Li, T.S. Chou, Y.H. Chen, X.P. Liang, J.H. Luan, Y.T. Zhu, J.C. Huang, Y. Liu, “3D Printing More Than Doubles Corrosion Resistance of FeCoCrNi multi-principal element alloys made by selective laser melting,” *npj Mater. Degradation*, DOI 10.1038/s41529-023-00320-1, (2023).
463. Y.F. Wang, Y.T. Zhu, Y.G. Wei, “Optimum Grain Size for the Best Strength-Ductility Combination,” *Intl. J. Plasticity*, **164**, 103574 (2023).
464. F. Liang, A. Meng, Y.X. Sun, Z.S. Chen, Z.W. Zhou, Y.P. Zhang, Y. Zhang, Y.T. Zhu, X. Chen, “A Novel Wear-Resistant Ni-Based Super Alloy via High Cr-Induced Subsurface Nanotwin and Heterogeneous Glaze Layer at Elevated Temperatures,” *Tribological International*, **183**, 108383 (2023).
465. Y.F. Liu, J. Ren, S. Guan, C.Y. Li, Y. Zhang, S. Muskeri, Z.Y. Liu, D.J. Yu, Y. Chen, K. An, Y. Cao, W. Liu, Y.T. Zhu, W. Chen, S. Mukherjee, T. Zhu, and W. Chen, “Microstructure and Mechanical Behavior of Additively Manufactured CoCrFeMnNi High-Entropy Alloys: Laser Directed Energy Deposition versus Powder Bed Fusion,” *Acta Mat.*, **250**, 118884 (2023).
466. Z.W. Huang, X.W. LI, D.H. Wen, A.D. Wang, J.S. Dong, F.Y. Kong, X.D. Hou, Y.S. Li, B. Wang, G. Liu, Y.T. Zhu, “Crack Initiation and Propagation Dominated by Strain Localization in a Quasi-Single Crystal and Polycrystalline Ni-based Complex Concentrated Alloy,” *Mater. Characterization*, **201**, 112973 (2023).
467. Y. Liu, M.N. Xu, L.R. Xiao, X.F. Chen, Z.H. Hu, B. Gao, N.N. Liang, Y. Cao, H. Zhou, Y.T. Zhu, “Dislocation Array Reflection Enhances Strain Hardening of a Dual-Phase Heterostructured High-Entropy Alloy,” *Mater. Res. Lett.*, **11**, 638-647 (2023).
468. Z.K. Li, Y.J. Liu, J. Hu, J.J. Wang, C.M. Liu and Y.T. Zhu, “Hierarchical Strain Band Formation and Mechanical

- Behavior of a Heterostructured Dual-Phase Material,” *J. Mater. Sci. Tech.*, **162**, 25-37 (2023).
469. J.W. Xiao, L.Y. Zhu, R. Wang, C. Deng, Z.X. Wu and Y.T. Zhu, “Unveiling Deformation Twin Nucleation and Growth Mechanisms in BCC Transition Metals and Alloys,” *Mater. Today*, **65**, 90-99 (2023).
 470. Y. Liu, B. Gao, M. Yang, L.R. Xiao, J.X. Wang, J.X. Ma, X.J. Chen, H. Zhou and Y.T. Zhu, “Significant Hetero-deformation Induced Strain Hardening in a Dual-phase Low-carbon Steel,” *JOM*, **75**, 1383-1392 (2023).
 471. J. Yan, W.X. Dong, P.J. Shi, W.J. Liu, Y.D. Wang, X.L. Wang, Y.T. Zhu, and Y. Ren, “Synchrotron X-ray Study of Heterostructured Materials,” *JOM*, **75** 1423-1434 (2023).
 472. Y.H. Chen, W.Y. Chen, Y.S. Lin, C.H. Chen, R. Zhou, T.H. Chou, W.P. Li, X. Wang, S.C. Chen, C.Y. Chen, Y.T. Zhu, C.C. Huang, “In-vitro and In-vivo Bio-corrosion and Biocompatibility Responses of Bioactive TiTaNb Films with Various Ta Contents on Ti6Al4V Implants,” *J. Mater. Res. Tech.*, **25**, 3803-3818 (2023).
 473. Y.F. Liu, J. Ren, J. Liu, Y. Cao, W. Liu, T.Y. Li, Y.T. Zhu and W. Chen, “Exceptional Thermal Stability of Additively Manufactured CoCrFeMnNi High Entropy Alloy with Cellular Dislocation Structures,” *Mater. Sci. Eng. A*, **885**, 145650 (2023).
 474. L. Romero-Resendiz, H.J. Kong, T. Zhang, H. Ni, S. Chen, M. Naeem, and Y.T. Zhu, “Achieving Antimicrobial and Super Mechanical Properties in a Scalable and Cost-effective Heterostructured Stainless Steel,” *Mater. Sci. Eng. A*, **886**, 145676 (2023).
 475. J.W. Xiao, S.W. Li, X.X. Ma, J.J. Gao, C. Deng, Z.X. Wu, and Y.T. Zhu, “Origin of Deformation Twinning in BCC Tungsten and Molybdenum,” *Phys. Rev. Lett.*, **131**, 136101 (2023).
 476. L.W. Fan, J. Zhou, X.T. Fang, Y.F. Wang, X.L. Ma, M.H. Tsai, and Y.T. Zhu, “Probing the Respective Strengthening Mechanisms of High-Entropy and Single-Principle Element Alloys,” *J. Alloys Compounds*, **969**, 172185 (2023).
 477. H.W. Ma, Y.C. Zhao, Z. Lyu, X. Wang, Y.T. Zhu, and Y.F. Gao, “What Are the “Dispersive Shear Bands” on the Surface of Layered Heterostructured Materials?” *J. Mech. Phys. Solids*, **181**, 105467 (2023).
 478. L.W. Zhang, M. Kowalik, Q. Mao, B. Damirch, Y. Zhang, P.D. Bradford, Q.W. Li, A. C.T. van Duin, and Y.T. Zhu, “Joint Theoretical and Experimental Study of Stress Graphitization in Aligned Carbon Nanotube/Carbon Matrix Composites,” *ACS Applied Materials & Interfaces*, **15**, 32656-32666 (2023).
 479. J.F. Nie, Y.Y. Chen, L. Song, Y. Fan, Y. Cao, K.W. Xie, S.D. Liu, X. F. Liu, Y.H. Zhao, Y.T. Zhu, “Enhancing Strength and Ductility of an Al Matrix Composites via Dual Heterostructure Strategy,” *Intl J. Plasticity*, **171**, 103825 (2023).
 480. P.J. Shi, Z. Shen, H.G. Wang, Z. LI, Y.J. Gu, Y. Li, Z.Z. Lin, M.Y. Wang, Y.P. Yang, C.Y. Lin, B. Ding, N. Min, J.C. Peng, J.H. Luan, T.S. Liu, W.L. Ren, Z.S. Lei, Y.T. Zhou, Y. Liu, N.N. Liang, Y. Chen, Q. Liu, T.S. Liu, P.A. van Aken, Y. Ren, Y.B. Zhong, C.T. Liu, H.J. Gao, and Y.T. Zhu, “Bioinspired, Heredity-Derived Hierarchical Bulk Multifunctional Copper Alloys,” *Mater. Today*, **71**, 22-37 (2023).
 481. L. Romero-Resendiz, M. Naeem, and Y.T. Zhu, “Heterostructured Materials by Severe Plastic Deformation: Overview and Perspective,” *Mater. Transactions*, **64**, 2346-2360 (2023).

2024

482. H. Ran, P.H. Ye, F.J. Guo, M.S. Wang, W.L. Su, X. Chen, S. Gao, N. Tsuiji, Y.T. Zhu, X.C. Lu, and C.X. Huang, “Superior Strength-Ductility Combination Resulted from Hetero-zone Boundary Affected Region in Cu-Fe Layered Material,” *J. Mater. Sci. Tech.*, **181**, 209-219 (2024).
483. X.F. Li, J.X. Zhang, C. Li, Z.R. Fu, Y.L. Gong, H.J. Pan, Z.L. Tan, Y.T. Zhu, and X.K. Zhu, “Elucidating the Mechanical Response and Microstructure Evolution of the Constituent Layers in Gradient-Structured Cu Alloys,” *J. Mater. Res. Tech.*, **28**, 316-326 (2024).
484. Q.C. Zhang, Y. Li, F. Liang, Z.C. Zhou, Y.S. Li, J. Rau, C. Greiner, Y.H. Zhao, Y.T. Zhu, and X. Chen, “Friction Anisotropy and Associated Surface Deformation Mechanisms in Heterogeneous Copper/Bronze Laminates,” *Mater. Characterization*, **208**, 113644 (2024).
485. Z.H. Zhang, Y. Ma, M.X. Yang, P. Jiang, H.Q. Feng, Y.T. Zhu, X.L. Wu, and F.P. Yuan, “Improving Ductility by Coherent Nanoprecipitates in Medium Entropy Alloy,” *Intl J. Plasticity*, **172**, 103821 (2024).
486. S.Z. Wang, Z.H. HU, Z.W. Huang, B. Gao, X.F. Chen, J.J. HU, Y.T. Zhu, Y.S. Li, and H. Zhou, “New Deformation Mechanism and Strength-Ductility Synergy in Pure Titanium with High Density of Twin,” *Intl. J. Plasticity*, **174**, 103908 (2024).
487. J.A. Muñoz, L. Huvelle, A. Komissarov, M. Avalos, R.E. Bolmaro, Y.T. Zhu, J.M. Cabrera, “Overcoming the

- Strength-Ductility Tradeoff of a 3D-Printed Al-Si Alloy by Equal Channel Angular Pressing,” *J. Alloys and Compounds*, **987**, 174153 (2024).
488. S.L. Li, S.F. Li, L. Liu, H.Y. Liu, C.Y. Wang, P.J. Withers, Y.T. Zhu, L. Gao, S.D. Wang, B. Chen, W.T. Huo, J.B. Gao, X. Zhang, “High-Temperature “Inverse” Hall-Petch Relationship and Fracture of TA15 Alloy,” *Int. J. Plasticity*, **176**, 103951 (2004).
489. Y. Li, Q.C. Zhang, F. Liang, Y.P. Zhang, Y.H. Zhao, Y.T. Zhu, P. Gembsch, X. Chen, “Macroscopic Low Friction via Twinning Assisted Lattice Reconstruction,” *Acta Mat.*, **271**, 119888 (2024).
490. J.A. Muñoz, A. Komissarov, M. Avalos, R.E. Bolmaro, Y.T. Zhu, J.M. Cabrera, “Improving Density and Strength-Ductility Ratio of a 3D-Printed Al-Si Alloy by High Pressure Torsion,” *J. Mater. Sci.* **59**, 6024-6047 (2024).
491. S.Y. Tung, T.E. Hsu, Y.T. Zhu, and M.H. Tsai, “Recrystallized Hard Zone and Resultant Tri-modal Heterostructure Produces Superior Mechanical Properties in a Single-Phase High-Entropy Alloy,” *Acta Mater.* **273**, 119957 (2024).
492. W.L. Su, M.S. Wang, F.J. Guo, H. Ran, Q. Cheng, Q.Y. Wang, Y.T. Zhu, X.L. Ma, C.X. Huang, “Heterostructure Enables Anomalous Improvement of Cryogenic Mechanical Properties in Titanium,” *Acta Mater.* **273**, 119982 (2024).
493. Y.P. Zhang, F. Liang, Y. Lin, X. Chen, Y.T. Zhu, “Mitigating Friction and Wear by Pre-designed or Friction-Induced Heterostructures: An Overview,” *Mater. Res. Lett.* **12**, 535-550 (2024).
494. K. Edalati, A.Q. Ahmed, S. Akrami, K. Ameyama, V. Aptukov, R.N. Asfandiyarov, M. Ashida, V. Astanin, A. Bachmaier, V. Beloshenko, E.V. Bobruk, K. Bryla, J.M. Cabrera, A.P. Carvalho, N.G. Chinh, I.C. Choi, R. Chulist, J.M. Cubero-Sesin, G. Davdian, M. Demirtas, S. Divinski, K. Durst, J. Dvorak, P. Edalati, S. Emura, N.A. Enikeev, G. Faraji, R.B. Figueiredo, R. Floriano, M. Fouladvind, D. Fruchart, M. Fuji, H. Fujiwara, M. Gajdics, D. Gheorghie, L. Gondek, J.E. Gonzalez-Hernandez, A. Gornakova, T. Grosdidier, J. Gubicza, D. Gunderov, L. He, O.F. Higuera, S. Hirose, A. Hohenwarter, Z. Horita, J. Horky, Y. Huang, J. Huot, Y. Ikoma, T. Ishihara, Y. Ivanisenko, J.I. Jang, A.M. Jorge Jr, M. Kawabata-Ota, M. Kawasaki, T. Khelifa, J. Kobayashi, L. Kommel, A. Korneva, P. Kral, N. Kudriashova, S. Kuramoto, T.G. Langdon, D.H. Lee, V.I. Levitas, C. Li, H.W. Li, Y.T. Li, Z. Li, H.J. Lin, K-D. Liss, Y. Liu, D.M.M. Cardona, K. Matsuda, A. Mazilkin, Y. Mine, H. Miyamoto, S-C. Moon, T. Müller, J.A. Muñoz, M. Yu. Murashkin, M. Naeem, M. Novelli, D. Olasz, R. Pippan, V.V. Popov, E.N. Popova, G. Purcek, P. de Rango, O. Renk, D. Retraint, A. R´ev´esz, V. Roche, P. Rodriguez-Calvillo, L. Romero-Resendiz, X. Sauvage, T. Sawaguchi, H. Sena, H. Shahmir, X.B. Shi, V. Sklenicka, W. Skrotzki, N. Skryabina, F. Staab, B. Straumal, Z.D. Sun, M. Szczerba, Y. Takizawa, Y.P. Tang, R.Z. Valiev, A. Vozniak, A. Voznyak, B. Wang, J.T. Wang, G. Wilde, F. Zhang, M. Zhang, P. Zhang, J.Q. Zhou, X.K. Zhu, Y.T. Zhu, “Severe Plastic Deformation for Producing Superfunctional Ultrafine-Grained and Heterostructured Materials: An Interdisciplinary Review,” *J. Alloy and Compounds*, **1002**, 174667 (2024).
495. S.L. Li, S.F. Li, Y.T. Zhu, L. Liu, H.Y. Liu, L.N. Gao, D. Pan, G. Li, Z.M. Wang, X. Zhang, B. Li, “Achieving Back-Stress Strengthening at High Temperature via Heterogeneous distribution of Nano TiBw in Ti Alloy”, *Mater. Character.* In press.