# Lianyi Y Chen

## List of Publications by Year
## in descending order

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|---|---|---|---|
| 80<br>papers | 4,749<br>citations | 117625<br>34<br>h-index | 95266<br>68<br>g-index |
| 85<br>all docs | 85<br>docs citations | 85<br>times ranked | 3642<br>citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Uncertainties Induced by Processing Parameter Variation in Selective Laser Melting of Ti6Al4V Revealed by In-Situ X-ray Imaging. Materials, 2022, 15, 530. | 2.9 | 6 |
| 2 | Effects of Particle Size Distribution with Efficient Packing on Powder Flowability and Selective Laser Melting Process. Materials, 2022, 15, 705. | 2.9 | 7 |
| 3 | Defects and anomalies in powder bed fusion metal additive manufacturing. Current Opinion in Solid State and Materials Science, 2022, 26, 100974. | 11.5 | 157 |
| 4 | Revealing melt flow instabilities in laser powder bed fusion additive manufacturing of aluminum alloy via in-situ high-speed X-ray imaging. International Journal of Machine Tools and Manufacture, 2022, 175, 103861. | 13.4 | 26 |
| 5 | Controlling process instability for defect lean metal additive manufacturing. Nature Communications, 2022, 13, 1079. | 12.8 | 59 |
| 6 | An instrument for <i>in situ</i> characterization of powder spreading dynamics in powder-bed-based additive manufacturing processes. Review of Scientific Instruments, 2022, 93, 043707. | 1.3 | 5 |
| 7 | Mitigating keyhole pore formation by nanoparticles during laser powder bed fusion additive manufacturing. Additive Manufacturing Letters, 2022, 3, 100068. | 2.1 | 8 |
| 8 | In Situ Synchrotron and Neutron Characterization of Additively Manufactured Alloys. Jom, 2021, 73, 174-176. | 1.9 | 2 |
| 9 | In-Situ Characterization of Pore Formation Dynamics in Pulsed Wave Laser Powder Bed Fusion. Materials, 2021, 14, 2936. | 2.9 | 13 |
| 10 | Quantitative investigation of gas flow, powder-gas interaction, and powder behavior under different ambient pressure levels in laser powder bed fusion. International Journal of Machine Tools and Manufacture, 2021, 170, 103797. | 13.4 | 21 |
| 11 | In-situ full-field mapping of melt flow dynamics in laser metal additive manufacturing. Additive Manufacturing, 2020, 31, 100939. | 3.0 | 69 |
| 12 | <i>In situ</i>/<i>operando</i>synchrotron x-ray studies of metal additive manufacturing. MRS Bulletin, 2020, 45, 927-933. | 3.5 | 22 |
| 13 | Types of spatter and their features and formation mechanisms in laser powder bed fusion additive manufacturing process. Additive Manufacturing, 2020, 36, 101438. | 3.0 | 48 |
| 14 | Direct observation of pore formation mechanisms during LPBF additive manufacturing process and high energy density laser welding. International Journal of Machine Tools and Manufacture, 2020, 153, 103555. | 13.4 | 143 |
| 15 | In situ Characterization of Laser Powder Bed Fusion Using High-Speed Synchrotron X-ray Imaging Technique. Microscopy and Microanalysis, 2019, 25, 2566-2567. | 0.4 | 2 |
| 16 | Pore elimination mechanisms during 3D printing of metals. Nature Communications, 2019, 10, 3088. | 12.8 | 158 |
| 17 | Bulk-Explosion-Induced Metal Spattering During Laser Processing. Physical Review X, 2019, 9, . | 8.9 | 34 |
| 18 | In-situ characterization and quantification of melt pool variation under constant input energy density in laser powder bed fusion additive manufacturing process. Additive Manufacturing, 2019, 28, 600-609. | 3.0 | 103 |

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|---|---|---|---|
| 19 | High-speed Synchrotron X-ray Imaging of Laser Powder Bed Fusion Process. Synchrotron Radiation News, 2019, 32, 4-8. | 0.8 | 17 |
| 20 | Investigating Powder Spreading Dynamics in Additive Manufacturing Processes by <i>In-situ</i> High-speed X-ray Imaging. Synchrotron Radiation News, 2019, 32, 9-13. | 0.8 | 16 |
| 21 | Transient dynamics of powder spattering in laser powder bed fusion additive manufacturing process revealed by in-situ high-speed high-energy x-ray imaging. Acta Materialia, 2018, 151, 169-180. | 7.9 | 276 |
| 22 | Revealing particle-scale powder spreading dynamics in powder-bed-based additive manufacturing process by high-speed x-ray imaging. Scientific Reports, 2018, 8, 15079. | 3.3 | 85 |
| 23 | Ultrafast X-ray imaging of laserâ€“metal additive manufacturing processes. Journal of Synchrotron Radiation, 2018, 25, 1467-1477. | 2.4 | 142 |
| 24 | Nanoparticle-induced unusual melting and solidification behaviours of metals. Nature Communications, 2017, 8, 14178. | 12.8 | 70 |
| 25 | Real-time monitoring of laser powder bed fusion process using high-speed X-ray imaging and diffraction. Scientific Reports, 2017, 7, 3602. | 3.3 | 389 |
| 26 | Phase control in immiscible Zn-Bi alloy by tungsten nanoparticles. Materials Letters, 2016, 174, 213-216. | 2.6 | 23 |
| 27 | Strengthening Alâ€“Biâ€“TiC0.7N0.3 nanocomposites by Cu addition and grain refinement. Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 651, 332-335. | 5.6 | 17 |
| 28 | Control of fluid dynamics by nanoparticles in laser melting. Journal of Applied Physics, 2015, 117, 114901. | 2.5 | 9 |
| 29 | A physically-based plastic constitutive model considering nanoparticle cluster effect for metal matrix nanocomposites. Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 641, 172-180. | 5.6 | 12 |
| 30 | Fabrication of Hierarchical Metallic Nanocomposite Core/Metal Shell Nanostructures by Self-Assembly. Journal of Nanoscience and Nanotechnology, 2015, 15, 5479-5483. | 0.9 | 0 |
| 31 | Processing and properties of magnesium containing a dense uniform dispersion of nanoparticles. Nature, 2015, 528, 539-543. | 27.8 | 582 |
| 32 | High Performance Mg6Zn Nanocomposites Fabricated through Friction Stir Processing. , 2015, , 383-386. |  | 2 |
| 33 | Rapid control of phase growth by nanoparticles. Nature Communications, 2014, 5, 3879. | 12.8 | 116 |
| 34 | Tuning local structures in metallic glasses by cooling rate. Intermetallics, 2014, 44, 94-100. | 3.9 | 14 |
| 35 | Facile and scalable synthesis of Ti<sub>5</sub>Si<sub>3</sub>nanoparticles in molten salts for metal-matrix nanocomposites. Chemical Communications, 2014, 50, 1454-1457. | 4.1 | 26 |
| 36 | Urchin-like AlOOH nanostructures on Al microspheres grown via in-situ oxide template. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2014, 188, 89-93. | 3.5 | 5 |

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|---|---|---|---|
| 37 | Bending behavior of electrodeposited glassy Pdâ€“P and Pdâ€“Niâ€“P thin films. Scripta Materialia, 2013, 68, 455-458. | 5.2 | 6 |
| 38 | Achieving uniform distribution and dispersion of a high percentage of nanoparticles in metal matrix nanocomposites by solidification processing. Scripta Materialia, 2013, 69, 634-637. | 5.2 | 106 |
| 39 | Ultrasonic-Assisted Synthesis of Surface-Clean TiB<sub>2</sub> Nanoparticles and Their Improved Dispersion and Capture in Al-Matrix Nanocomposites. ACS Applied Materials &amp; Interfaces, 2013, 5, 8813-8819. | 8.0 | 48 |
| 40 | Effect of fabrication and processing technology on the biodegradability of magnesium nanocomposites. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2013, 101B, 870-877. | 3.4 | 24 |
| 41 | Atomic-scale mechanisms of tensionâ€“compression asymmetry in a metallic glass. Acta Materialia, 2013, 61, 1843-1850. | 7.9 | 31 |
| 42 | Assembly of metals and nanoparticles into novel nanocomposite superstructures. Scientific Reports, 2013, 3, . | 3.3 | 38 |
| 43 | Atomic and cluster level dense packing contributes to the high glass-forming ability in metallic glasses. Intermetallics, 2013, 34, 106-111. | 3.9 | 14 |
| 44 | Large-scale solution synthesis of Î±-AlF3Â·3H2O nanorods under low supersaturation conditions and their conversion to porous Î²-AlF3 nanorods. Journal of Materials Chemistry, 2012, 22, 20991. | 6.7 | 9 |
| 45 | Thermal oxidation effect on corrosion behavior of Zr46Cu37.6Ag8.4Al8 bulk metallic glass. Intermetallics, 2012, 22, 84-91. | 3.9 | 12 |
| 46 | Theoretical study and pathways for nanoparticle capture during solidification of metal melt. Journal of Physics Condensed Matter, 2012, 24, 255304. | 1.8 | 112 |
| 47 | Atomic-Scale Mechanisms of the Glass-Forming Ability in Metallic Glasses. Physical Review Letters, 2012, 109, 105502. | 7.8 | 103 |
| 48 | Cuï£¿Zrï£¿Alï£¿Ti Bulk Metallic Glass with Enhanced Glassâ€Forming Ability, Mechanical Properties, Corrosion Resistance and Biocompatibility. Advanced Engineering Materials, 2012, 14, 195-199. | 3.5 | 11 |
| 49 | Mapping the Strain Distributions in Deformed Bulk Metallic Glasses Using Hard X-Ray Diffraction. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 1558-1563. | 2.2 | 11 |
| 50 | Novel nanoprocessing route for bulk graphene nanoplatelets reinforced metal matrix nanocomposites. Scripta Materialia, 2012, 67, 29-32. | 5.2 | 299 |
| 51 | Effect of core-shelled nanoparticles of carbon-coated nickel on magnesium. Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 546, 284-290. | 5.6 | 12 |
| 52 | The effect of oxidation on the corrosion resistance and mechanical properties of a Zr-based metallic glass. Corrosion Science, 2011, 53, 3557-3565. | 6.6 | 42 |
| 53 | Structural origin of the different glass-forming abilities in ZrCu and ZrNi metallic glasses. Journal of Materials Research, 2011, 26, 2098-2102. | 2.6 | 27 |
| 54 | Mechanical properties of 7â€“10â€‰mm bone grafts and small slurry grafts in impaction bone grafting. Journal of Orthopaedic Research, 2011, 29, 1491-1495. | 2.3 | 8 |

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|---|---|---|---|
| 55 | A plastic Zrâ€“Cuâ€“Agâ€“Al bulk metallic glass. Acta Materialia, 2011, 59, 1037-1047. | 7.9 | 55 |
| 56 | Atomic structure in Al-doped multicomponent bulk metallic glass. Scripta Materialia, 2010, 63, 879-882. | 5.2 | 39 |
| 57 | â€œSoftâ€•atoms in Zr70Pd30 metalâ€“metal amorphous alloy. Scripta Materialia, 2010, 63, 883-886. | 5.2 | 7 |
| 58 | Effect of pre-existing shear bands on the tensile mechanical properties of a bulk metallic glass. Acta Materialia, 2010, 58, 1276-1292. | 7.9 | 117 |
| 59 | Shear band evolution and hardness change in cold-rolled bulk metallic glasses. Acta Materialia, 2010, 58, 4827-4840. | 7.9 | 95 |
| 60 | Reply to the comments of Y.H. Liu: Ion sputter erosion in metallic glassâ€”A response to â€œComment on: Homogeneity of Zr64.13Cu15.75Ni10.12Al10 bulk metallic glassâ€•by L-Y. Chen, Y-W. Zeng, Q-P. Cao, B-J. Park, Y-M. Chen, K. Hono, U. Vainio, Z-L. Zhang, U. Kaiser, X-D. Wang,and J-Z Jiang [J. Mater. Res. 24, 3116 (2009)]. Journal of Materials Research, 2010, 25, 602-604. | 2.6 | 4 |
| 61 | Structural origin of the high glass-forming ability in Y-doped bulk metallic glasses. Journal of Materials Research, 2010, 25, 1701-1705. | 2.6 | 13 |
| 62 | Initiation and evolution of shear bands in bulk metallic glass under tensionâ€”An in situ scanning electron microscopy observation. Journal of Materials Research, 2009, 24, 2924-2930. | 2.6 | 1 |
| 63 | Homogeneity of the superplastic Zr<sub>64.13</sub>Cu<sub>15.75</sub>Ni<sub>10.12</sub>Al<sub>10</sub> bulk metallic glass. Journal of Materials Research, 2009, 24, 3116-3120. | 2.6 | 11 |
| 64 | Catching Fe-based bulk metallic glass with combination of high glass forming ability, ultrahigh strength and good plasticity in Feâ€“Coâ€“Nbâ€“B system. Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 517, 246-248. | 5.6 | 36 |
| 65 | Effect of microalloying of Nb on corrosion resistance and thermal stability of ZrCu-based bulk metallic glasses. Journal of Non-Crystalline Solids, 2009, 355, 203-207. | 3.1 | 27 |
| 66 | Wear behavior of a series of Zr-based bulk metallic glasses. Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 475, 124-127. | 5.6 | 29 |
| 67 | Free-volume-induced enhancement of plasticity in a monolithic bulk metallic glass at room temperature. Scripta Materialia, 2008, 59, 75-78. | 5.2 | 116 |
| 68 | Stress-induced softening and hardening in a bulk metallic glass. Scripta Materialia, 2008, 59, 1210-1213. | 5.2 | 40 |
| 69 | Formation of Niâ€“Nbâ€“Zrâ€“X (X = Ti, Ta, Fe, Cu, Co) bulk metallic glasses. Journal of Alloys and Compounds, 2008, 460, 714-718. | 5.5 | 30 |
| 70 | Achieving large macroscopic compressive plastic deformation and work-hardening-like behavior in a monolithic bulk metallic glass by tailoring stress distribution. Applied Physics Letters, 2008, 92, . | 3.3 | 40 |
| 71 | New Class of Plastic Bulk Metallic Glass. Physical Review Letters, 2008, 100, 075501. | 7.8 | 182 |
| 72 | Tension and stress relaxation behavior of a La-based bulk metallic glass. Journal of Materials Research, 2007, 22, 3303-3308. | 2.6 | 3 |

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|---|---|---|---|
| 73 | Ultrahigh strength binary Niâ€“Nb bulk glassy alloy composite with good ductility. Journal of Alloys and Compounds, 2007, 443, 105-108. | 5.5 | 23 |
| 74 | Catching the Ni-based ternary metallic glasses with critical diameter up to 3mm in Niâ€“Nbâ€“Zr system. Journal of Alloys and Compounds, 2007, 443, 109-113. | 5.5 | 52 |
| 75 | Formation of bulk metallic glasses in Cu45Zr48âˆ’xAl7REx (RE=La, Ce, Nd, Gd and 0â‰xâ‰5at.%). Intermetallics, 2007, 15, 1066-1070. | 3.9 | 26 |
| 76 | Ultrasonic-assisted preparation of monodisperse iron oxide nanoparticles. Materials Letters, 2007, 61, 2204-2207. | 2.6 | 17 |
| 77 | Design of Cu8Zr5-based bulk metallic glasses. Applied Physics Letters, 2006, 88, 241913. | 3.3 | 67 |
| 78 | Synthesis of centimeter-size Ag-doped Zrâ€“Cuâ€“Al metallic glasses with large plasticity. Journal of Alloys and Compounds, 2006, 424, 176-178. | 5.5 | 51 |
| 79 | Centimeter-sized (La0.5Ce0.5)-based bulk metallic glasses. Journal of Alloys and Compounds, 2006, 424, 179-182. | 5.5 | 20 |
| 80 | Glass formability, thermal stability and mechanical properties of La-based bulk metallic glasses. Journal of Alloys and Compounds, 2006, 424, 183-186. | 5.5 | 48 |