

# James Langer

## List of Publications by Year in descending order

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34  
papers

1,428  
citations

361045

20  
h-index

377514

34  
g-index

34  
all docs

34  
docs citations

34  
times ranked

1057  
citing authors

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 1  | MODELS OF PATTERN FORMATION IN FIRST-ORDER PHASE TRANSITIONS. Series on Directions in Condensed Matter Physics, 1986, , 165-186.                                | 0.1 | 204       |
| 2  | Shear-transformation-zone theory of plastic deformation near the glass transition. Physical Review E, 2008, 77, 021502.   | 0.8 | 159       |
| 3  | Dynamics of shear-transformation zones in amorphous plasticity: Formulation in terms of an effective disorder temperature. Physical Review E, 2004, 70, 041502. | 0.8 | 142       |
| 4  | Theories of glass formation and the glass transition. Reports on Progress in Physics, 2014, 77, 042501.   | 8.1 | 85        |
| 5  | Microstructural shear localization in plastic deformation of amorphous solids. Physical Review E, 2001, 64, 011504.   | 0.8 | 81        |
| 6  | Dynamics of shear-transformation zones in amorphous plasticity: Energetic constraints in a minimal theory. Physical Review E, 2003, 68, 061507.                 | 0.8 | 73        |
| 7  | Slip complexity in dynamic models of earthquake faults.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 3825-3829.  | 3.3 | 62        |
| 8  | Steady-state, effective-temperature dynamics in a glassy material. Physical Review E, 2007, 76, 056107.   | 0.8 | 61        |
| 9  | Thermodynamic dislocation theory of high-temperature deformation in aluminum and steel. Physical Review E, 2017, 96, 013004.                                    | 0.8 | 48        |
| 10 | Statistical thermodynamics of strain hardening in polycrystalline solids. Physical Review E, 2015, 92, 032125.  | 0.8 | 45        |
| 11 | Excitation Chains at the Glass Transition. Physical Review Letters, 2006, 97, 115704.   | 2.9 | 42        |
| 12 | Thermal effects in dislocation theory. Physical Review E, 2016, 94, 063004.   | 0.8 | 41        |
| 13 | Dynamics and thermodynamics of the glass transition. Physical Review E, 2006, 73, 041504.   | 0.8 | 29        |
| 14 | Nonequilibrium thermodynamics of the Kovacs effect. Soft Matter, 2010, 6, 3065.   | 1.2 | 27        |
| 15 | Thermal effects in dislocation theory. II. Shear banding. Physical Review E, 2017, 95, 013004.  | 0.8 | 27        |
| 16 | Stick-slip instabilities in sheared granular flow: The role of friction and acoustic vibrations. Physical Review E, 2015, 92, 022209.                           | 0.8 | 26        |
| 17 | Shear-transformation-zone theory of yielding in athermal amorphous materials. Physical Review E, 2015, 92, 012318.  | 0.8 | 24        |
| 18 | Anomalous diffusion and stretched exponentials in heterogeneous glass-forming liquids: Low-temperature behavior. Physical Review E, 2008, 77, 061505.           | 0.8 | 23        |

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 19 | Ising model of a glass transition. <i>Physical Review E</i> , 2013, 88, 012122.  | 0.8 | 22        |
| 20 | Shear-transformation-zone theory of viscosity, diffusion, and stretched exponential relaxation in amorphous solids. <i>Physical Review E</i> , 2012, 85, 051507.               | 0.8 | 20        |
| 21 | Thermodynamic theory of dislocation-enabled plasticity. <i>Physical Review E</i> , 2017, 96, 053005.   | 0.8 | 20        |
| 22 | Dynamic Model of Super-Arrhenius Relaxation Rates in Glassy Materials. <i>Physical Review Letters</i> , 2005, 94, 175701.  | 2.9 | 18        |
| 23 | Dynamic ductile to brittle transition in a one-dimensional model of viscoplasticity. <i>Physical Review E</i> , 1998, 58, 1568-1576.   | 0.8 | 17        |
| 24 | Glass dynamics at high strain rates. <i>Physical Review E</i> , 2012, 86, 011502.  | 0.8 | 17        |
| 25 | Yielding transitions and grain-size effects in dislocation theory. <i>Physical Review E</i> , 2017, 95, 033004.  | 0.8 | 17        |
| 26 | Statistical Thermodynamics of Crystal Plasticity. <i>Journal of Statistical Physics</i> , 2019, 175, 531-541.  | 0.5 | 17        |
| 27 | Scaling confirmation of the thermodynamic dislocation theory. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 29431-29434. | 3.3 | 17        |
| 28 | Rate-and-state theory of plastic deformation near a circular hole. <i>Physical Review E</i> , 1999, 60, 6978-6983.   | 0.8 | 14        |
| 29 | Shear flow of angular grains: Acoustic effects and nonmonotonic rate dependence of volume. <i>Physical Review E</i> , 2014, 90, 032204.  | 0.8 | 14        |
| 30 | Nonequilibrium thermodynamics and glassy rheology. <i>Soft Matter</i> , 2013, 9, 8786.   | 1.2 | 10        |
| 31 | Anomalous diffusion in heterogeneous glass-forming liquids: Temperature-dependent behavior. <i>Physical Review E</i> , 2008, 78, 051115.                                       | 0.8 | 9         |
| 32 | Thermodynamic analysis of the Livermore molecular-dynamics simulations of dislocation-mediated plasticity. <i>Physical Review E</i> , 2018, 98, 023006.                        | 0.8 | 6         |
| 33 | Brittle-ductile transitions in a metallic glass. <i>Physical Review E</i> , 2020, 101, 063004.   | 0.8 | 6         |
| 34 | Fracture toughness of crystalline solids. <i>Physical Review E</i> , 2021, 103, 063004.  | 0.8 | 5         |