

LIST OF PUBLICATIONS

BY VALERY I. LEVITAS

Monographs

- [1] Large Deformation of Materials with Complex Rheological Properties at Normal and High Pressure. **Levitas V.I.** New York, Nova Science Publishers, 1996.
- [2] Thermomechanics of Phase Transformations and Inelastic Deformations in Microinhomogeneous Materials. **Levitas V.I.** Kiev, Naukova Dumka, 1992.
- [3] Large Elastoplastic Deformations of Materials at High Pressure. **Levitas V.I.** Kiev, Naukova Dumka, 1987.

Papers in Refereed Journals

2023

- [4] Tensorial stress-plastic strain fields in α - ω Zr mixture, transformation kinetics, and friction in diamond anvil cell. **Levitas V.I., Dhar A., and Pandey K.K.** Nature Communication, 2023, Vol. 14, 5955, 9 pp.
- [5] Effect of a Micro-scale Dislocation Pileup on the Atomic-Scale Multi-variant Phase Transformation and Twinning. **Peng Y., Ji R., Phan T., Capolungo L., Levitas V.I., Xiong L.** Computational Materials Science, 2023, Vol. 230, 112508, 16 pages.
- [6] In-situ study of rules of nanostructure evolution, severe plastic deformations, and friction under high pressure. **Lin F., Levitas V.I., Pandey K.K., Yesudhas S., and Park C.** Materials Research Letters, 2023, Vol. 11, No. 9, 757-763.
- [7] Recent in situ Experimental and Theoretical Advances in Severe Plastic Deformations, Strain-Induced Phase Transformations, and Microstructure Evolution under High Pressure. **Levitas V.I.** Material Transactions, 2023, Vol. 64 (8), 1866-1878. Invited review.
- [8] Simulations of multivariant Si I to Si II phase transformation in polycrystalline silicon with finite-strain scale-free phase-field approach. **Babaei H., Pratoori R., and Levitas V.I.** Acta Materialia, 2023, Vol. 254, 118996, 24 pp.
- [9] A multiphase phase-field study of three-dimensional martensitic twinned microstructures at large strains. **Basak A. and Levitas V.I.,** Continuum Mechanics and Thermodynamics, 2023, Vol. 35, 1595-1624.
- [10] Athermal resistance to phase interface motion due to precipitates: A phase field study. **Javanbakht M. and Levitas V.I.** Acta Materialia, 2023, Vol 242, No. 10, 118489.

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- [11] Resolving puzzles of the phase-transformation-based mechanism of the deep-focus earthquake. **Levitas V.I.**, Nature Communications, 2022, Vol. 13, 6291, 10 p.
- [12] Nontrivial nanostructure, stress relaxation mechanisms, and crystallography for pressure-induced Si-I \rightarrow Si-II phase transformation. **Chen H., Levitas V.I., Popov D., and Velisavljevic N.** Nature Communication, 2022, Vol. 13, 982 (**Editor's highlight**) <https://www.nature.com/collections/eecgdgijhh>.
- [13] Phase field theory for fracture at large strains including surface stresses. **Jafarzadeh H., Farrahic G. H., Levitas V.I., and Javanbakht M.** International Journal of Engineering Sciences, 2022, Vol. 178, 103732, 28 pages.
- [14] An Atomistic-to-Microscale Computational Analysis of the Dislocation Pileup-induced Local Stresses near an Interface in Plastically Deformed Two-phase Materials. **Peng Y., Ji R., Phan T., Gao W., Levitas V.I., Xiong L.** Acta Materialia, 2022, Vol. 226, 117663, 14 pp.
- [15] Nanomaterials by Severe Plastic Deformation: Review of Historical Developments and Recent Advances. **Edalati K., Bachmaier A., Beloshenko V., Beygelzimer Y., Blank V., Botta W., Bryła K., Čížek J., Divinski S., Enikeev N., Estrin Y., Faraji G., Figueiredo B., Fuji M., Furuta T., Grosdidier T., Gubicza J., Hohenwarter A., Horita Z., Huot J., Ikoma Y., Janeček M., Kawasaki M., Král P., Kuramoto S., Langdon T., Leiva D., Levitas V.I., Mazilkin A., Mito M., Miyamoto M., Nishizaki T., Pippan R., Popov V., Popova E., Purcek G., Renk O., Révész Á., Sauvage X., Sklenicka V., Skrotzki W., Straumal B., Suwas S., Toth L., Tsuji N., Valiev R., Wilde G., Zehetbauer M., Zhu X.** Materials Research Letters, 2022, Vol. 10, No. 4, 163-256, invited review.
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- [18] Coupled large-strain mechanochemical theory for solid-state reaction with application to oxidation. **Attariani H. and Levitas V.I.** Acta Materialia, 2021, Vol. 220, 117284, 14 p.
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- [20] Phase transformations, fracture, and other structural changes in inelastic materials. **Levitas V.I.** International Journal of Plasticity, 2021, Vol. 140, 102914, 51 pp., invited review.
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- [27] Aluminum Particle Reactivity as a Function of Alumina Shell Structure: Amorphous versus Crystalline. **Walzel R. K., Levitas V. I., Pantoya M. L.** Powder Technology, 2020, Vol. 374, 33-39.
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