

Nikhil Chandra Admal

University of Illinois at Urbana-Champaign
Department of Mechanical Science and Engineering
1206 W Green St, Urbana, IL 61801
Phone: (612)-963-8827
email: admal@illinois.edu
Webpage: <http://www.publish.illinois.edu/admal/>

Journal Articles

- 1 N. C. Admal, E. B. Tadmor. “A unified interpretation of stress in molecular systems.” *Journal of Elasticity*, 100:63–143, 2010
- 2 N. C. Admal, E. B. Tadmor. “Stress and heat flux for arbitrary multibody potentials: A unified framework.” *The Journal of Chemical Physics*, 134:184,106, 2011
- 3 Nikhil Chandra Admal, E.B. Tadmor. “The non-uniqueness of the atomistic stress tensor and its relationship to the generalized beltrami representation.” *Journal of the Mechanics and Physics of Solids*, 93:72 – 92, 2016. Special Issue in honor of Michael Ortiz
- 4 Nikhil Chandra Admal, Ellad B Tadmor. “Material fields in atomistics as pull-backs of spatial distributions.” *Journal of the Mechanics and Physics of Solids*, 89:59–76, 2016
- 5 N. C. Admal, J. Marian, Giacomo Po. “The atomistic representation of first strain-gradient elastic tensors.” *Journal of the Mechanics and Physics of Solids*, 99:93 – 115, 2017
- 6 Nikhil Chandra Admal, Giacomo Po, Jaime Marian. “Diffuse-interface polycrystal plasticity: Expressing grain boundaries as geometrically necessary dislocations.” *Materials Theory*, 1(1):6, 2017
- 7 Giacomo Po, Markus Lazar, Nikhil Chandra Admal, Nasr Ghoniem. “A non-singular theory of dislocations in anisotropic crystals.” *International Journal of Plasticity*, 103:1–22, 2018
- 8 Nikhil Chandra Admal, Giacomo Po, Jaime Marian. “A unified framework for polycrystal plasticity with grain boundary evolution.” *International Journal of Plasticity*, 106:1–30, 2018
- 9 Giacomo Po, Nikhil Chandra Admal, Markus Lazar. “The green tensor of Mindlin’s anisotropic first strain gradient elasticity.” *Materials Theory*, 3(1):3, Mar 2019. ISSN 2509-8012
- 10 Nikhil Chandra Admal, Javier Segurado, Jaime Marian. “A three-dimensional misorientation axis- and inclination-dependent Kobayashi–Warren–Carter grain boundary model.” *Journal of the Mechanics and Physics of Solids*, 2019. ISSN 0022-5096
- 11 Giacomo Po, Nikhil Chandra Admal, Bob Svendsen. “Non-local thermoelasticity based on equilibrium statistical thermodynamics.” *Journal of Elasticity*, pp. 1–23, 2019
- 12 M Shi, NC Admal, EB Tadmor. “Noise filtering in atomistic stress calculations for crystalline materials.” *Journal of the Mechanics and Physics of Solids*, 144:104,083, 2020
- 13 Jaekwang Kim, Matt Jacobs, Stanley Osher, Nikhil Chandra Admal. “A crystal symmetry-invariant Kobayashi–Warren–Carter grain boundary model and its implementation using a thresholding algorithm.” *Computational Materials Science*, 199:110,575, 2021. ISSN 0927-0256
- 14 Junyan He, Nikhil Chandra Admal. “Polycrystal plasticity with grain boundary evolution: A numerically efficient dislocation-based diffuse-interface model.” *Modelling and Simulation in Materials Science and Engineering*, 30(2):025,006, 2021
- 15 Himanshu Joshi, Junyan He, Nikhil Chandra Admal. “A finite deformation theory for grain boundary plasticity based on geometrically necessary disconnections.” *Journal of the Mechanics and Physics of Solids*, p. 104949, 2022

-
- 16 Ganesh Ananthakrishnan, Mitisha Surana, Matthew Poss, Jad Jean Yaacoub, Kaihao Zhang, Nikhil Admal, Pascal Pochet, Sameh Tawfick, Harley T Johnson. “Graphene-mediated stabilization of surface facets on metal substrates.” *Journal of Applied Physics*, 130(16):165,302, 2021
 - 17 Mitisha Surana, Tusher Ahmed, Nikhil Chandra Admal. “Interface mechanics of 2d materials on metal substrates.” *Journal of the Mechanics and Physics of Solids*, p. 104831, 2022
 - 18 Nikhil Chandra Admal, Tusher Ahmed, Enrique Martinez, Giacomo Po. “Interface dislocations and grain boundary disconnections using Smith normal bicrystallography.” *Acta Materialia*, p. 118340, 2022
 - 19 Jaekwang Kim, Nikhil Chandra Admal. “A stochastic framework for evolving grain statistics using a neural network model for grain topology transformations”. computational materials science.” *Computational Materials Science*, 2022. Accepted for publication