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Qualifications

Materials Science and Engineering, PhD, Ohio State University
7 Jan 2013 → 6 May 2018
Award Date: 6 May 2018

Materials Science and Engineering, MS, Ohio State University
7 Jan 2013 → 8 May 2016
Award Date: 8 May 2016

Materials Science and Engineering, BS, Ohio State University
19 Sep 2007 → 12 Jun 2011
Award Date: 12 Jun 2011

Employment

Research Fellow

Materials Science & Engineering
MONASH UNIVERSITY
1 Apr 2019 → present

Research outputs

Finding meaning in 4D STEM: strategies for extracting targeted specimen information

Etheridge, J., Chao, W., Bøjesen, E. D., Esser, B., Krajnak, M., Li, W., Petersen, T. C. & Zheng, C., Aug 2020, In : Microscopy and Microanalysis. 26, S2, p. 237 1 p.

Anomalous Hall effect in noncollinear antiferromagnetic Mn₃NiN thin films

Boldrin, D., Samathrakris, I., Zemen, J., Mihai, A., Zou, B., Johnson, F., Esser, B. D., McComb, D. W., Petrov, P. K., Zhang, H. & Cohen, L. F., 23 Sep 2019, In : Physical Review Materials. 3, 9, 6 p., 094409.

Identification of turbostratic twisting in germanane

Trout, A. H., Wang, Y., Esser, B. D., Jiang, S., Goldberger, J. E., Windl, W. & McComb, D. W., Aug 2019, In : Journal of Materials Chemistry C. 7, 32, p. 10092-10097 6 p.

Effect of stacking fault segregation and local phase transformations on creep strength in Ni-base superalloys

Smith, T. M., Good, B. S., Gabb, T. P., Esser, B. D., Egan, A. J., Evans, L. J., McComb, D. W. & Mills, M. J., 15 Jun 2019, In : Acta Materialia. 172, p. 55-65 11 p.

Observation of Nanoscale Skyrmions in SrIrO₃/SrRuO₃ Bilayers

Meng, K. Y., Ahmed, A. S., Baćani, M., Mandru, A. O., Zhao, X., Bagués, N., Esser, B. D., Flores, J., McComb, D. W., Hug, H. J. & Yang, F., 8 May 2019, In : Nano Letters. 19, 5, p. 3169-3175 7 p.

Enhanced uniformity of III-nitride nanowire arrays on bulk metallic glass and nanocrystalline substrates

May, B. J., Hettiaratchy, E. C., Selcu, C., Wang, B., Esser, B. D., McComb, D. W. & Myers, R. C., 2019, In : Journal of Vacuum Science and Technology Part B: Nanotechnology and Microelectronics. 37, 3, 7 p., 031212.

Epitaxial Co₅₀Fe₅₀(110)/Pt(111) films on MgAl₂O₄(001) and its enhancement of perpendicular magnetic anisotropy

Lee, A. J., Ahmed, A. S., Guo, S., Esser, B. D., McComb, D. W. & Yang, F., 2019, In : Journal of Applied Physics. 125, 18, 6 p., 183903.

Segregation and phase transformations along superlattice intrinsic stacking faults in Ni-based superalloys

Smith, T. M., Esser, B. D., Good, B., Hooshmand, M. S., Viswanathan, G. B., Rae, C. M. F., Ghazisaeidi, M., McComb, D. W. & Mills, M. J., 1 Sep 2018, In : Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science. 49A, 9, p. 4186-4198 13 p.

Chiral bobbars and skyrmions in epitaxial FeGe/Si(111) films

Ahmed, A. S., Rowland, J., Esser, B. D., Dunsiger, S. R., McComb, D. W., Randeria, M. & Kawakami, R. K., 17 Apr 2018, In : Physical Review B. 2, 4, 6 p., 041401.

Atomic resolution characterization of strengthening nanoparticles in a new high-temperature-capable 43Fe-25Ni-22.5Cr austenitic stainless steel

Heczko, M., Esser, B. D., Smith, T. M., Beran, P., Mazánová, V., McComb, D. W., Kruml, T., Polák, J. & Mills, M. J., 14 Mar 2018, In : Materials Science and Engineering A: Structural Materials: Properties, Microstructure and Processing. 719, p. 49-60 12 p.

The misfit dislocation core phase in complex oxide heteroepitaxy

Bagués, N., Santiso, J., Esser, B. D., Williams, R. E. A., McComb, D. W., Konstantinovic, Z., Balcells, L. & Sandiumenge, F., 21 Feb 2018, In : Advanced Functional Materials. 28, 8, 11 p., 1704437.

Giant Piezomagnetism in Mn₃NiN

Boldrin, D., Mihai, A. P., Zou, B., Zemen, J., Thompson, R., Ware, E., Neamtu, B. V., Ghivelder, L., Esser, B., McComb, D. W., Petrov, P. & Cohen, L. F., 2018, In : ACS Applied Materials & Interfaces. 10, 22, p. 18863-18868 6 p.

On the origin of extraordinary cyclic strengthening of the austenitic stainless steel Sanicro 25 during fatigue at 700 °C

Heczko, M., Esser, B. D., Smith, T. M., Beran, P., Mazánová, V., Kruml, T., Polák, J. & Mills, M. J., 14 Dec 2017, In : Journal of Materials Research. 32, 23, p. 4342-4353 12 p.

Molecular beam epitaxy growth of [CrGe/MnGe/FeGe] superlattices: toward artificial B20 skyrmion materials with tunable interactions

Ahmed, A. S., Esser, B. D., Rowland, J., McComb, D. W. & Kawakami, R. K., 1 Jun 2017, In : Journal of Crystal Growth. 467, p. 38-46 9 p.

Robust zero-field Skyrmion formation in FeGe epitaxial thin films

Gallagher, J. C., Meng, K. Y., Brangham, J. T., Wang, H. L., Esser, B. D., McComb, D. W. & Yang, F. Y., 9 Jan 2017, In : Physical Review Letters. 118, 2, 5 p., 027201.

Fast grain boundary oxygen ion diffusion in the α -phase of Bi₂O₃

Chater, R. J., Cavallaro, A., Bayliss, R. D., Cook, S. N., Esser, B. D., McComb, D. W. & Kilner, J. A., 1 Jan 2017, In : Solid State Ionics. 299, p. 89-92 4 p.

Metallic ferromagnetic films with magnetic damping under 1.4×10^{-3}

Lee, A. J., Brangham, J. T., Cheng, Y., White, S. P., Ruane, W. T., Esser, B. D., McComb, D. W., Hammel, P. C. & Yang, F., 2017, In : Nature Communications. 8, 6 p., 234.

Phase transformation strengthening of high-temperature superalloys

Smith, T. M., Esser, B. D., Antolin, N., Carlsson, A., Williams, R. E. A., Wessman, A., Hanlon, T., Fraser, H. L., Windl, W., McComb, D. W. & Mills, M. J., 22 Nov 2016, In : Nature Communications. 7, 7 p., 13434.

Quantitative STEM imaging of order-disorder phenomena in double perovskite thin films

Esser, B. D., Hauser, A. J., Williams, R. E. A., Allen, L. J., Woodward, P. M., Yang, F. Y. & McComb, D. W., 20 Oct 2016, In : Physical Review Letters. 117, 17, 5 p., 176101.

Thickness dependence of spin Hall angle of Au grown on Y₃Fe₅O₁₂ epitaxial films

Brangham, J. T., Meng, K. Y., Yang, A. S., Gallagher, J. C., Esser, B. D., White, S. P., Yu, S., McComb, D. W., Hammel, P. C. & Yang, F., 16 Aug 2016, In : Physical Review B. 94, 5, 054418.

Exceptionally high magnetization of stoichiometric $\text{Y}_3\text{Fe}_5\text{O}_{12}$ epitaxial films grown on $\text{Gd}_3\text{Ga}_5\text{O}_{12}$

Gallagher, J. C., Yang, A. S., Brangham, J. T., Esser, B. D., White, S. P., Page, M. R., Meng, K-Y., Yu, S., Adur, R., Ruane, W., Dunsiger, S. R., McComb, D. W., Yang, F. & Hammel, P. C., 15 Aug 2016, In : Applied Physics Letters. 109, 7, 5 p., 072401.

Self-assembled InN micro-mushrooms by upside-down pendeoepitaxy

Sarwar, A. T. M. G., Yang, F., Esser, B. D., Kent, T. F., McComb, D. W. & Myers, R. C., 1 Jun 2016, In : Journal of Crystal Growth. 443, p. 90-97 8 p.

Atomic-scale characterization and modeling of 60° dislocations in a high-entropy alloy

Smith, T. M., Hooshmand, M. S., Esser, B. D., Otto, F., McComb, D. W., George, E. P., Ghazisaeidi, M. & Mills, M. J., 15 May 2016, In : Acta Materialia. 110, p. 352-363 12 p.

Epitaxial growth of iridate pyrochlore $\text{Nd}_2\text{Ir}_2\text{O}_7$ films

Gallagher, J. C., Esser, B. D., Morrow, R., Dunsiger, S. R., Williams, R. E. A., Woodward, P. M., McComb, D. W. & Yang, F. Y., 29 Feb 2016, In : Scientific Reports. 6, 7 p., 22282.

Segregation and η phase formation along stacking faults during creep at intermediate temperatures in a Ni-based superalloy

Smith, T. M., Esser, B. D., Antolin, N., Viswanathan, G. B., Hanlon, T., Wessman, A., Mourer, D., Windl, W., McComb, D. W. & Mills, M. J., Nov 2015, In : Acta Materialia. 100, p. 19-31 13 p.

Long-term 500 C testing of high temperature 4H-SiC schottky diode alpha particle detectors for pyroprocessing

Reinke, B., Jarrell, J., Chaiken, M., Wilson, B. A., Blue, T. E., Windl, W., Esser, B. D. & Cao, L., 2015, In : Transactions of the American Nuclear Society. 113, p. 489-491 3 p.

Characterizing sub-lattice occupancies in B2 phases in high entropy metallic alloys using atomic resolution STEM-XEDS mapping

Williams, R. E. A., Welk, B., Esser, B. D., Viswanathan, G. B., Genc, A., Gibson, M., Allen, L. J., McComb, D. W. & Fraser, H. L., 1 Aug 2014, In : Microscopy and Microanalysis. 20, 3, p. 116-117 2 p.

Understanding B-site disorder in HAADF-STEM images of double perovskite thin films using the quantum excitation of phonons model

Esser, B. D., D'Alfonso, A. J., Dixit, M., Williams, R. E. A., Fraser, H. L., Allen, L. J. & McComb, D. W., 1 Aug 2014, In : Microscopy and Microanalysis. 20, 3, p. 184-185 2 p.