

## Jingjing Qing

Manufacturing Engineering Department

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### Appointments

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- Assistant Professor, Manufacturing Engineering Department at Georgia Southern University, 2018-present
- Senior Research Specialist, Materials Research Center at Missouri University S&T, 2017-2018
- Assistant Research Professor, Materials Science & Engineering Department at Missouri University S&T, 2016-2017

### Education

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- PhD, Materials Science and Engineering, Missouri University S&T, USA  
Aug. 2010 – May 2016, GPA: 3.87
- B.S., Materials Science and Engineering, Xi'an Jiaotong University, China  
Sep. 2006 - Jun. 2010, GPA: 3.70

### Awards and Honors

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- American Foundry Society Cast Iron Division Best Paper Award, 2017
- American Foundry Society Cast Iron Division Best Paper Award, 2015
- Department Outstanding Graduate Student, Missouri University S&T, 2013 and 2015
- Xinjiang Outstanding Self-Financed Students Scholarship, 2014
- Outstanding Undergraduate Student, Xi'an Jiaotong University, 2010
- China National Inspiration Scholarship, 2008
- Outstanding Individual Award, Xi'an Jiaotong University, 2008

### Research Thrusts

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Material characterizations, scanning electron microscopy (SEM), electron back scattered diffraction (EBSD), focus ion beam (FIB), and transmission electron microscopy (TEM), metallography, crystallography, material processing, metal casting, metal solidification, solidification simulation and optimization, material mechanical testing.

### Publications

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- **Book Chapter:** “Graphite in Metallic Materials- Growths, Structures and Defects of Spheroidal Graphite in Ductile Iron”, in *Handbook on the Graphene Materials: Graphene- Growth, Synthesis and Integration Methods*, Wiley-Scrivener, USA (invited chapter).
- D. M. Field, J. Qing and D. C. Van Aken, “Chemistry and Properties of Medium-Mn two-stage TRIP steels”, accepted by *Metall. and Mat. Trans. A.*, 2018.
- J. Qing, V. L. Richards and D. C. Van Aken, “Growth Stages and Hexagonal-Rhombohedral Structural Arrangements Observed in Spheroidal Graphite in Ductile Iron”, *Carbon*, Vol. 116, pp.456–469, 2017.

- **AFS Best Paper:** J. Qing, V. L. Richards, D. C. Van Aken and M. Xu, “Staged Growth of Spheroidal Graphite in Ductile Irons”, *Transactions of the American Foundry Society*, Vol. 125, pp.161-171, 2017.
- J. Qing, D. C. Van Aken, M. F. Buchely, M. Walker., R. Juusola and J. Goethe, “Solid Silver Embrittlement of Ti-6Al-2Sn-4Zr-2Mo Alloy”, *Materials Science & Technology Conference*, 2017.
- M. Xu, D. M. Field, J. Qing, V. A. Athavale and D. C. Van Aken, “Controlling Nitrogen Pick-Up during Induction Melting Low Alloy Steels”, *Transactions of the American Foundry Society*, Vol. 125, pp.393-398, 2017.
- J. Qing, V. L. Richards and D. C. Van Aken, “Examination of Nodular Graphite Formation and Austenite Solidification in Ductile Iron”, *Metall. and Mat. Trans. A*, Col. 47A, pp.6197-6213, 2016.
- **AFS Best Paper:** J. Qing, V. L. Richards and D. C. Van Aken, “Examination of Nodular Graphite Formation and Austenite Solidification in Ductile Iron”, *Transactions of the American Foundry Society*, Vol. 123, pp.271-281, 2015.
- J. Qing, V. L. Richards and D. C. Van Aken, “Examination of Austenite Solidification and Spheroidal Graphite Growth in Ni-Fe-C alloys”, in *Advances in the Science and Engineering of Casting Solidification: An MPMD Symposium Honoring Doru Michael Stefanescu*, John Wiley & Sons, Inc., Hoboken, NJ, USA.
- J. Qing and V. L. Richards, “A review: Atomic Level Analysis of Graphite Growth Morphology”, *Transactions of the American Foundry Society*, Vol. 122, pp.265-272, 2014.
- J. Qing, S. N. Lekakh and V. L. Richards, “No-bake S-containing Mold-Ductile Iron Metal Interactions: Consequences and Potential Applications”, *Transactions of the American Foundry Society*, Vol. 121, pp.409-418, 2013.
- S. N. Lekakh, J. Qing, V. L. Richards and K. D. Peaslee, “Graphite Nodule Size Distribution in Ductile Iron”, *Transactions of the American Foundry Society*, Vol. 121, 419-426, 2013.
- S. N. Lekakh, J. Qing and V. L. Richards, “Investigation of Cast Iron Processing to Produce Controlled Dual Graphite Structure in Castings”, *Transactions of the American Foundry Society*, Vol. 120, pp.297-306, 2012.
- S. N. Lekakh, J. Qing and V. L. Richards, “Modeling of Melt Mixing Phenomena in Cast Iron with Dual Graphite Structure”, in *Supplemental Proceedings: Materials Properties, Characterization, and Modeling*, Volume 2 (ed TMS), John Wiley & Sons, Inc., Hoboken, NJ, USA.

### ***Patent***

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Large Diameter Multi-pass Pin-less Friction Stir Processing Method for Fabricating Fiber-reinforced Metal Matrix Composites, J. Qing, J. Zhang, G. Zhang, M. Xu, Number CN102319954 A, 2012.

### ***Projects***

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- **PI**, Cleanliness of steels (2017, Caterpillar)
- **PI**, Atom Probe Tomography study of elements at spheroidal graphite-iron interface (2017, Ductile Iron Society)
- **Co-PI**, Long Life Components Additional Work (2017, Caterpillar)
- **Co-PI**, Study of solid metal embrittlement of Ti-6Al-2Sn-4Zr-2Mo alloy by silver (2016-2018, Spirit AeroSystem)

- TEM Study of third generation ultra-high strength steels (2016-2018, Peaslee Steel Manufacturing Research Center)
- **Co- PI**, Nonmetallic Inclusion Engineering in steels (2016-2017, Peaslee Steel Manufacturing Research Center)
- Developing white iron alloys and nickel alloys for high speed wearing component (2015-present, Caterpillar)
- Developing steel-carbide composite or steel-white iron composite for ground engagement component (2014-2015, Caterpillar)
- Determine efficiency of carburizers (2012-2014, Superior Graphite)
- Developing cast iron with dual graphite structures for diesel engine head (2010-2015, Caterpillar)

### ***Professional Activities***

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- Invited seminar
  - Keynote speaker, American Foundry Society Inoculation Conference, 2018
  - Invited presenter at DOE High Strength Iron Technical Working Meeting at Peoria, 2015
- Technical reviewers
  - Carbon journal
  - Metallurgical and Materials Transactions A
  - International Journal of Metalcasting
  - American Foundry Society Metalcasting Congress

### ***Teaching Activities***

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- Lecture and lab, MFGE 2531 &MFGE2531 A, Materials Science for MFGE, Georgia Southern University, 2018 fall-present
- Lecture, MET6535, MET 6530, Transmission Electron Microscopy Lab, Missouri University S&T, 2017 summer to date
- MET5525, Scanning Electron Microscopy Lab, at Missouri University S&T, 2018 Spring
- Microstructure Image Analysis Instructor, Magma Summer Academy, 2012, 2013, 2014 and 2017
- Graduate research assistant and teaching assistant at Missouri University S&T, 2011-2016