Curriculum Vita

Personal Data

Name	Qingge Xie
Date of Birth	02-19-1979
E_mail	xqg1084@126.com
Google Scholar	https://scholar.google.com/citations?user=SHa5MDwAAAAJ&hl=en
ResearchGate	https://www.researchgate.net/profile/Qingge-Xie-2
Current Research Aim	1. Apply crystal plasticity theory for high-strain-rate deformation, e.g., cold spray. 2. High-fidelity microstructure prediction for selective laser melting.

Education

- **2009 11 - 2014 04:** KU Leuven in Belgium (**PhD**)
  PhD thesis: *Validation of the Taylor, ALAMEL and VPSC models for plastic anisotropy modeling of sheet metals*.
- **2004 09 - 2007 04:** University of Science and Technology Beijing in China (**Master**)
  Master thesis: *The Schmid factor analysis on the deformation twins and their influences on the precipitation behavior in an AZ80 magnesium alloy*
- **1999 09 - 2003 07:** Hefei University of Technology in China (**Bachelor**)
  Major: Metallic materials engineering

Working Experience

- **2018 11 –present:** An associate researcher at University of Science and Technology Beijing in China.
  ABAQUS/VUMAT for high strain rate deformation ; High-fidelity and large-scale microstructure simulation for selective laser melting; a new back stress kinematic formulation for crystal plasticity models.
- **2018 05 –2018 10:** Scientist II, stage III, at Institute of High-Performance Computing (IHPC) at Agency for science, technology and research (ASTAR) in Singapore.
  Writing subroutines to predict the anisotropic behavior based on the microstructure of a multiple-phase material.
- **2016 04 – 2018 03:** Post-doctor researcher at Oak Ridge National Laboratory in the USA
  LDRD project: Advancing additive manufacturing processes through multi-scale characterization using neutron scattering techniques correlated with mesoscale polycrystalline deformation simulations.
- **2014 05 -2016 03:** Post-doctor researcher at University of Science and Technology Beijing in China.
  ABAQUS/UMAT for simulation of the deformation of polycrystalline metals.
  Employing synchrotron-based X-ray diffraction to study the mechanical behavior of metallic materials.
- **2007 04 – 2009 10:** Researcher at ShouGang Research Institute of Technology in Beijing China (Industry)
  Rolling & annealing process for the non-oriented silicon steels.
- **2003 08 – 2004 07:** Engineer at Anhui Shangzhan mold industrial Co., Ltd in China (Industry)
  Designing the inspection tools for automobile parts.

Selected Publication

1. **Q. Xie**, Z. Yan, D. Yu, K. An, X. Yan, S. Yin, B. Gillham, X. Wu, P. Yang, Z. Zhao, Y. Wang, Crystallographic orientation and spatially resolved damage for polycrystalline deformation of a high manganese steel, **Acta Materialia** 226(2022) 117628.
2. **Q. Xie**, Z. Pei, J. Liang, D. Yu, Z. Zhao, P. Yang, R. Li, M. Eisenbach, K. An, Corrigendum to "Transition from the twinning induced plasticity to the γ−ε transformation induced plasticity in a high manganese steel" [Acta Materialia 161(2018)273-284], **Acta Materialia** 218(2021) 117211.
3. **Q.Xie**, J. Lian, J. Sidor, F. Sun, X. Yan, C. Chen, T. Liu, W. Chen, P. Yang, K. An, Y. Wang, Crystallographic orientation and spatially resolved damage in a dispersion hardened Al alloy, **Acta Materialia** 193(2020) 138-150.
4. **Q. Xie**, Z.Pei, J.Liang, D.Yu, Z.Zhao, P.Yang, R.Li, M.Eisenbach, K.An, Transition from the twinning induced plasticity to the γ-ε phase transformation induced plasticity in a high manganese steel, **Acta Materialia** 161(2018) 273-284.
5. **Xie, Q**., Van Bael, A., Sidor, J., Moerman, J., Van Houtte, P. A new cluster type model for the simulation of textures of polycrystalline metals. **Acta Materialia**, 69, 175-186(2014).
6. **Q. Xie**, Y. Chen, P. Yang, Y. D. Wang, K. An, In-situ neutron diffraction and theoretical investigation on the tension-compression load reverse effect in the TWIP steel, **Scripta materialia**, 150, 168-172(2018).
7. **Q**.**Xie**, J.Liang, A.D. Stoica, R. Li, P. Yang, Z. Zhao, J. Wang, H. Lan, R. Li, K. An, In-situ neutron diffraction study on the tension-compression fatigue behavior of a twinning induced plasticity steel, **Scripta Materialia**, 137, 83-87(2017).
8. R. Li, **Q. Xie (co-first author)**, Y. D. Wang, W. Liu, M.Wang, G. Wu, X. Li, M. Zhang, Z. Lu, C. Geng, T. Zhu, Unraveling submicron mechanical heterogeneity by three-dimensional X-ray micro-diffraction. **Proceedings of the National Academy of Sciences (PNAS)** 115(2018) 483-388.
9. **Q. Xie**, G. Song, S. Gorti, Alexandru Stoica, B. Radhakrishnan, Jean Bilheux, M. M. Kirka, R. Dehoff, Hassina Z Bilheux, Ke An, Applying neutron transmission physics and 3D statistical full-field model to understand 2D Bragg-edge imaging, **Journal of Applied Physics** 123, 074901 (2018).
10. **Q. Xie**, J. Lian, F. Sun, B. Gan, Y.D.Wang, The lattice strain ratio in charactering the grain-to-grain interaction effect and its specific insight on the plastic deformation of polycrystalline materials in a tensile test, **Journal of strain analysis for engineering design**, 53,353-363(2018).
11. **Q. Xie,** A. Van Bael, Y. An, J.Lian, J. J.Sidor, Effects of the isotropic and anisotropic hardening within each grain on the evolution of the flow stress, the r-value and the deformation texture of tensile tests for AA6016 sheet, **Materials Science and Engineering A** 172, 154-164(2018).
12. **Q. Xie**, S. Gorti, J.J. Sidor, Y.G.An, Y.D.Wang, J. Lian, H.Lan, K.An, grain orientation dependence of the residual lattice strain in a cold rolled interstitial-free steel, **Steel research international** 89(2018) 1700408 **(cover report)**.
13. **Q.Xie**, R.Li, Y.D.Wang, R.Su, J.Lian, Y.Ren, W.Zhang, X.Zhou, Y.Wang, The in-depth residual strain heterogeneities due to an indentation and a laser shock peening for Ti-6Al-4V

titanium alloy, **Materials science and engineering A,** 714 140-145(2018).

14. **Q.Xie**, P. Eyckens, H. Vegter, J. Moerman, A. Van Bael, P. Van Houtte, Polycrystal plasticity models based on crystallographic and morphologic texture: Evaluation of predictions of plastic anisotropy and deformation texture. **Materials Science and Engineering A**, 581, 66-72 (2013).
15. Yang, M. X., Yuan, F. P., **Xie, Q. G.**, Wang, Y. D., Ma, E., and Wu, X. L. Strain hardening in Fe-16Mn-10Al-0.86C-5Ni high specific strength steel, **Acta Materialia**, 2016(109) 213-222.
16. Sidor, J., Petrov, R., **Xie, Q.**, Van Houtte, P. and Kestens, L., Evaluation of crystallographic changes and plastic strain ratio in Al alloys, **Materials Science and Technology**, 2017(33) 667-677.
17. Rohit Voothaluru, Vikram Beedekar, **Qingge Xie**, Alexandru D. Stoica, R.Scott Hyde, Ke An, In-situ neutron diffraction and crystal plasticity finite element modeling to study the kinematic stability of retained austenite in bearing steels, **Materials science and engineering A** 711(2018) 579-587.
18. T. Liu, Z. Wu, A. D. Stoica, **Q. Xie**, W. Wei, H. Bei, Y. Gao, K. An, Twinning-mediated Work Hardening and Texture Evolution in CrCoFeMnNi High Entropy Alloys at Cryogenic Temperature, **Materials and design**, 2017(131) 419-427.
19. Thijs, L., Montero Sistiaga, M., Wauthlé, R., **Xie, Q.**, Kruth, J., Van Humbeeck, J. (2013). Strong morphological and crystallographic texture and resulting yield strength anisotropy in Selective Laser Melted tantalum. **Acta Materialia**, 61 (12), 4657-4668.
20. P. Yang, **Q. Xie**, L. Meng, H. Ding, Z. Tang. Dependence of deformation twinning on grain orientation in a high manganese steel. **Scripta Materialia**, 2006, 55: 629–631.
21. L.Meng, P.Yang, **Q.Xie**, H. Ding, Z. Tang. Dependence of deformation twinning on grain orientation in compressed high manganese steels. **Scripta Materialia**, 2007, 56:931–934.
22. R.Li, Y. Wang, W.Liu, C.Geng, **Q.Xie**, D.Brown, K.An, Multiscale mechanical fatigue damage of stainless steel investigated by neutron diffraction and X-ray microdiffraction, **Acta Materialia** 165(2019) 336-345.
23. S.Yin, M. Hassani, **Q. Xie**, R. Lupoi, Unravelling the deposition mechanism of brittle particles in metal matrix composites fabricated via cold spray additive manufacturing, **Scripta Materialia**, 194(2021) 113614.

International conference

1. **Xie, Q.**, Stoica A., S. Gorti, Radhakrishnan B., Song G., Krirka M., Dehoff R., Bilheux J., Biheux H. and K. An, Effect of the isotropic and anisotropic work hardening on the micromechanical behavior in textured Inconel 718 made by electron beam additive manufacturing. TMS 2017, March 2nd San Diego.
2. **Xie, Q.**, Stoica A., S. Gorti, Radhakrishnan B., Song G., Krirka M., Dehoff R., Bilheux J., Biheux H. and K. An, Micromechanics behavior in additively manufactured textured Inconel 718, 9 th International Conference on Mechanical Stress Evaluation by Neutron & Synchrotron Radiation, 2017 September 19th-21st, Skukuza Rest Camp, Kruger National Park, South Africa **(invited talk)**.
3. Van Houtte, P., **Xie, Q.**, Eyckens, P. (2013). Accounting for the effect of work hardening on grain interaction in the ALAMEL polycrystal deformation model. International Symposium on Plasticity and its Current Applications. Nassau, Bahamas, 3-8 January 2013.

4. Van Bael, A., Gawad, J., **Xie, Q.**, Eyckens, P., Samaey, G., Roose, D., Van Houtte, P. (2013). A virtual experimentation framework for the calibration of advanced yield criteria. International Symposium on Plasticity and its Current Applications. Nassau, Bahamas, 3-8 January 2013.
5. J. Sidor, **Q.Xie**, P.Van Houtte, K.Decroos, R.Petrov, L.Kestens, Crystal plasticity-based assessment of texture evolution in thermo-mechanical processing of Al alloys. The 17th international conference on textures of materials in Dresden Germany 2014 (Aug 24-Aug 29).
6. P. Van Houtte, B. Van Bael **Q. Xie** and M. Seefeldt, Statistical models for deformation texture prediction using vortex-type accommodation of local strain misfits, 2017, ICOTOM 18.
7. Van Houtte, P., **Xie, Q.**, Van Bael, A., Sidor, J., Moerman, J. (2016). Using an intermediary length scale in statistical models for the prediction of deformation textures. In Khan, A. (Ed.), International Journal of Plasticity: Vol. 81. International Symposium on Plasticity and its Current Applications. Hilton Rose Hall Resort & Spa, Montego Bay, Jamaica, 4-9 January 2015.