AHMED ALADE TIAMIYU, PhD
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CURRENT POSITION

University of Calgary Calgary, AB
Assistant Professor *September 2021*

EDUCATION

Massachusetts Institute of Technology Cambridge, MA
Postdoctoral Fellow, Materials Science and Engineering Sept. 2019-Aug. 2021
Supersonic impact of single microparticles using a laser-induced particle impact tester.

University of Saskatchewan Saskatoon, Canada
PhD, Materials Science (Department of Mechanical Engineering) August 2019
Dissertation: *Dynamic impact response and corrosion behavior of coarse and ultrafine grained AISI 321 austenitic stainless steel.*

University of Saskatchewan Saskatoon, Canada
MSc, Materials Science (Department of Mechanical Engineering) August 2015
Dissertation: *Deformation and damage mechanisms in selected 2000 series aluminum alloys under both quasi-static and dynamic impact loading conditions.*

University of Lagos Lagos, Nigeria
BSc, Metallurgical and Materials Engineering October 2011

AWARDS, SCHOLASHIPS, AND FELLOWSHIP

NSERC Post-doctoral fellowship 2019-2021
Natural Sciences and Engineering Research Council of Canada

Toyota Automotive Engineering and Safety Scholarship 2018, 2019
College of Engineering Graduate Award

NSERC Vanier Canada Graduate Scholarship 2017
Natural Sciences and Engineering Research Council of Canada

Douglas Patton Hogg Memorial Award 2015, 2016
College of Engineering Graduate Award
International Dean's Scholarship 2015
University of Saskatchewan, Canada

Devolved Scholarship 2013
Department of Mechanical Engineering, University of Saskatchewan

DEPARTMENTAL AND COLLEGE COMMITTEES

University of Calgary Calgary, AB
Member: Equity, Diversity, and Inclusion committee September 2021-*Till date*

Massachusetts Institute of Technology Cambridge, MA
Member: Safe and Sustainable Labs Task Force April 2021-Aug. 2021
Board Member (Corresponding Secretary): Postdoctoral Association Sept. 2020-Aug. 2021
Member: Postdoctoral Association's DE&I Committee 2020-present

University of Saskatchewan (U of S) Saskatoon, Canada
Graduate student representative: Mechanical Engineering Depart. safety committee 2016-2017
Student ambassador: Advancement and Community Engagement 2015-2016

PROFESSIONAL ASSOCIATIONS

Engineer-In-Training, Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) 2015-preent
Member, American Society for Metal (ASM) 2015-present

PEER-REVIEWED PUBLICATIONS

Articles under review

A. A. Tiamiyu, Edward Peng, X. Chen, J. LeBeau, K. A. Nelson, C A. Schuh (2021). How nanograins form at high strains and strain rates: twinning-assisted dynamic recrystallization, *Under review*.

A. A. Tiamiyu, X. Chen, E. Pang, Y. Sun, J. Z. Lienhard, J. LeBeau, K. A. Nelson, C A. Schuh (2021). Oxide layer delamination: an energy dissipation mechanism during single microparticle impacts, *Under review*.

Published in peer-reviewed journals

A. A. Tiamiyu, Y. Sun, K. A. Nelson, C A. Schuh (2021). Site-specific study of jetting, bonding, and local deformation during high-velocity metallic microparticle impact. *Acta Materialia* 2020: 159-169.

A. A. Tiamiyu and C. A. Schuh (2020). Particle Flattening during Cold Spray: Mechanistic Regimes Revealed by Single Particle Impact Tests. *Surface and Coatings Technology*. 403: 126386.

E. Damavandi, S. Nourouzi, S. M. Rabiee, R. Jamaati, **A. A. Tiamiyu**, J. A Szpunar (2020). Effects of prior ECAP process on the dynamic impact behaviors of hypereutectic Al-Si alloy *Materials Science and Engineering A*. 793: 139902.

I. N. A. Oguocha, **A. A. Tiamiyu**, M. Rezaei, A. G. Odeshi, J.A. Szpunar (2020). Experimental investigation of the dynamic impact responses of as-cast and homogenized A535 aluminum alloy. *Materials Science and Engineering A*. 771: 138536.

Z. Xu, U. Eduok, **A. A. Tiamiyu**, J. A. Szpunar (2020). Anodic dissolution pattern of magnesium alloy in different media: Effects of solution treatment on its microstructure and corrosion behaviour. *Engineering Failure Analysis*. 107: 104234.

A. A. Tiamiyu, A. G. Odeshi, J. A. Szpunar (2019). Crash-worthiness of a recently-developed AA 2624 aluminum alloy: experimental studies. *Materials Science and Engineering A*. 766: 138389.

A. A. Tiamiyu, S. Zhao, Z. Li, A.G. Odeshi, J.A. Szpunar (2019). Thermal and mechanical stability of austenite in metastable austenitic stainless steel. *Metall. Mater. Trans. A Phys. Metall. Mater. Sci*. 50: 4513-4530.

A. A. Tiamiyu, U. Eduok, J. A. Szpunar, and A. G. Odeshi (2019). Corrosion behavior of metastable AISI 321 austenitic stainless steel: Investigating the effect of grain size and prior plastic deformation on its degradation pattern in saline media. *Scientific Reports*. 9: 12116.

A. A. Tiamiyu, J. A. Szpunar, and A. G. Odeshi (2019). Strain rate sensitivity and activation volume of AISI 321 stainless steel under dynamic impact loading: grain size effect. *Materials Characterization*. 154:7–19.

A. G. Odeshi, **A. A. Tiamiyu**, A. K. Khan, N. Katwal, D. Das, I. N. A. Oguocha (2019). Development of ultra-fine grained structure in AA 2099 and AA 2624 aluminum alloys. *Materialia*. 6: 100313.

A. G. Odeshi, **A. A. Tiamiyu**, D. Das, N. Katwal, I. N. A. Oguocha, A. K. Khan (2019). High strain-rate deformation of T8-tempered, cryo-rolled and ultrafine grained AA 2099 aluminum alloy. *Materials Science and Engineering A*. 754: 602-612.

A. A. Tiamiyu, U. Eduok, A. G. Odeshi, and J. A. Szpunar (2019). Effect of strain rate on the corrosion resistance of AISI 321 austenitic stainless steel under compression. *Materials and Engineering A*. 745:1–9.

A. A. Tiamiyu, A. G. Odeshi, and J. A. Szpunar (2018). Characterization of coarse and ultrafine-grained austenitic stainless steel subjected to dynamic impact load: XRD, SEM, TEM and EBSD analyses. *Materialia*. 4:81–98.

E. Ohaeri, J. Omale, **A. Tiamiyu**, K. M. M. Rahman, and J. A. Szpunar (2018). Influence of thermomechanically controlled processing on microstructure and hydrogen induced cracking susceptibility of API 5L X70 pipeline steel. *Journal of Materials Engineering and Performance*. 27: 4533-4547.

A. A. Tiamiyu, T. Vahid, J. A. Szpunar, A. G. Odeshi, and A. K. Khan (2018). Effects of Grain Refinement on the Quasi-Static Compressive Behavior of AISI 321 Austenitic Stainless Steel: EBSD, TEM, and XRD Studies. *International Journal of Plasticity*. 107:79–99.

A. A. Tiamiyu, A. G. Odeshi, and J. A. Szpunar (2018). Austenitic Reversion of Cryo-Rolled Ti-Stabilized Austenitic Stainless Steel: High-Resolution EBSD Investigation. *Journal of Materials Engineering and Performance*. 27:889–904.

A. A. Tiamiyu, A. G. Odeshi, and J. A. Szpunar (2018). Multiple Strengthening Sources and Adiabatic Shear Banding during High Strain-Rate Deformation of AISI 321 Austenitic Stainless Steel: Effects of Grain Size and Strain Rate. *Materials Science and Engineering A*. 711:233–49.

A. A. Tiamiyu, A. Y. Badmos, A. G. Odeshi, J. A. Szpunar. (2017). The influence of temper condition on adiabatic shear failure of AA 2024 aluminum alloy. *Materials Science and*

Engineering A. 708: 492-502.

A. A. Tiamiyu, J. A. Szpunar, A. G. Odeshi, I. Oguocha, and M. Eskandari (2017). Development of Ultra-Fine-Grained Structure in AISI 321 Austenitic Stainless Steel. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*. 48A:5990–6012.

J. I. Omale, E. G. Ohaeri, **A. A. Tiamiyu**, M. Eskandari, K. M. Mostafijur, J. A. Szpunar (2017). Microstructure, texture evolution and mechanical properties of X70 pipeline steel after different thermomechanical treatments. *Materials Science and Engineering A.* 703: 477-485.

U. Eduok, O. Faye, **A. A. Tiamiyu**, J. A. Szpunar (2017). Fabricating protective epoxy-silica/CeO2 films for steel: Correlating physical barrier properties with material content. *Materials and Design*. 124:58-68.

U. Eduok, E. Jossou, **A. A. Tiamiyu**, J. Omale, J. A. Szpunar (2017). Ceria/acrylic polymer microgel composite: synthesis, characterization, and anticorrosion application for API 5L X70 substrate in chloride-enriched medium. *Industrial & Engineering Chemistry Research*. 56: 5586-5597.

A. A. Tiamiyu, Eskandari, M., Nezakat, M., Wang, X., J. A. Szpunar, and A. G. Odeshi (2016). A Comparative Study of the Compressive Behaviour of AISI 321 Austenitic Stainless Steel under Quasi-Static and Dynamic Shock Loading. *Materials and Design*. 112:309–19.

A. A. Tiamiyu, Eskandari, M., Sanayei, M., A. G. Odeshi, and J. A. Szpunar (2016). Mechanical Behavior and High-Resolution EBSD Investigation of the Microstructural Evolution in AISI 321 Stainless Steel under Dynamic Loading Condition. *Materials Science and Engineering A.* 673:400–416.

G. M. Owolabi, D. T. Bolling, **A. A. Tiamiyu**, R. Abu, A. G. Odeshi, H. A. Whitworth. (2016). Shear strain localization in AA 2219-T8 aluminum alloy at high strain rates. *Materials Science and Engineering A.* 655: 212-220.

A. A. Tiamiyu, A. Y. Badmos, A. G. Odeshi (2016). Effects of temper condition on high strain-rate deformation of AA 2017 aluminum alloy in compression. *Materials and Design*. 89: 872-883.

A. A. Tiamiyu, R. Basu A. G. Odeshi, and J. A. Szpunar (2017). Plastic deformation in relation to microstructure and texture evolution in AA 2017-T451 and AA 2624-T351 aluminum alloys under dynamic impact loading. *Materials Science and Engineering A.* 636: 379-388.

Complete list of publications: https://scholar.google.ca/citations?user=3ukbOK0AAAAJ&hl=en

INVITED TALKS AND CONFERENCE PRESENTATIONS

Ahmed A. Tiamiyu, Yuchen Sun, Keith A. Nelson, Christopher A. Schuh. (2021). Microparticle impact at very high velocities does not necessarily improve bonding. Materials Research Society, *Virtual*.

Ahmed Tiamiyu, Jasper Lienhard, Christopher Schuh. (2020). Microparticle Impacts at Supersonic Speeds, and the Role of Surface Layers. Materials Science and Technology, *Virtual*.

"From subsonic to supersonic: a site-specific study of single microparticle impact bonding" and "From Nigeria to America: the untold story of a Nigerian-Canadian". ***Invited talk*** at Diversity and Inclusions Research Talk and Lunch Series, Department of Civil and Environmental Engineering,

MIT, March 2020.

A. A. Tiamiyu, A. G. Odeshi, J. A. Szpunar. (2018). Dynamic Hall-Petch effect in AISI 321 austenitic stainless steel: role of grain size and deformation mode. Materials Science and Technology, Columbus, United States.

A. A. Tiamiyu, J. A. Szpunar, A. G. Odeshi. (2017). Pseudo-texture memory in AISI 321 austenitic stainless steel. IOP Conference series. ICOTOM, St George, Utah, U.S.A.

Tiamiyu A, Odeshi A, Szpunar J. (2017). Deformation and Strengthening Mechanisms in AISI 321 Austenitic Stainless Steel under both Dynamic and Quasi-static Loading Conditions. TMS, San Diego, United States

Tiamiyu A, Odeshi A, Badmos A. (2015). Effects of Deformation Rate on Mechanical Behavior of AA 2024 Aluminum Alloy under Compressive Loading. Conference proceedings. Materials Science and Technology, Columbus, United States (1419-1428).

Tiamiyu A, Odeshi A. (2014). Microstructure and Texture Evolution in AA2624-T351 Aluminum Alloy under Shock Loading. Program. 26th Canadian Materials Science, Saskatoon, Canada (69).

Tacik A, Saba O, **Tiamiyu A**, Odeshi A. (2014). Effect of Thermal Exposure on The Compressive Strength of Kevlar and Glass Fibres Reinforced Epoxy. Program. 26th Canadian Materials Science, Saskatoon, Canada (86)

MEDIA PUBLICATIONS

MIT News: https://news.mit.edu/2021/talking-outside-tower-science-snippets-0412

U of S News: https://news.usask.ca/articles/general/2017/four-u-of-s-students-awarded-prestigious-vanier-scholarships.php

REVIEW ACTIVITIES

Since 2015, I review manuscripts for over 20 different journals in Materials Science and Engineering that includes, *Materials Science and Engineering A, Materials and Design, Journal of Alloys and Compounds, Philosophical magazine, Materials Letters, Materials Characterization, Materials Research, Advances in Manufacturing, Journal of Materials Science, Surface and Coatings Technology, Acta Materialia, Materials Today Communications, Journal of Materials Science & Technology, Results in Physics.*

TEACHING/TRAINING EXPERIENCE

Kaufman Teaching Certificate Program, MIT Massachusetts, USA
Teaching + Learning Lab February, 2021

Grader, MIT Massachusetts, USA
Course: Physical Metallurgy February, 2021

- Grade problem sets.
- Perform various tasks depending on professor's needs, e.g., co-piloting Zoom class meetings.

Graduate Teaching Assistant, University of Saskatchewan (U of S) Saskatoon, Canada
Course: Engineering Analysis 1 (94 students) Winters 2017-2019

- Taught the weekly tutorial class: I went over problems that is aimed to assist students with the materials that were covered in lectures and I also developed notes that introduced them to the mathematical tools for solving engineering problems.
- Graded assignments and quizzes.
- Invigilated examinations.

Graduate Teaching Assistant, University of Saskatchewan (U of S) Saskatoon, Canada
Course: Materials in Engineering Design (45 students) Winters 2014, 2015

- Guided students on the materials selection process using the CES EduPack.
- Graded assignments and quizzes.
- Invigilated examinations.

Gwenna Moss Centre for Teaching and Learning, U of S Saskatoon, Canada
GSR 989: Philosophy & Practice of University Teaching September 2014 - March 2015

REFERENCES

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