

Curriculum Vitae

Keith J. Kowalkowski, PhD, PE, SE
Department of Civil and Architectural Engineering
Lawrence Technological University

Address

Keith J. Kowalkowski, PhD, PE, SE
Department of Civil and Architectural Engineering
Lawrence Technological University
21000 W. Ten Mile Road, Southfield, MI 48075
Ph: (248) 204-2583 Fax: (248) 204-2583
Email: kkowalkow@ltu.edu

Education

Purdue University: Ph.D., Structural Engineering, December 2005
Dissertation: Effects of Multiple Heat Straightening Repairs on the Material Properties and Serviceability of Steel Beam Bridges
Michigan State University: B.S., Civil Engineering, June 2002

Professional Experience

Associate Professor and Director of Civil Engineering Graduate Programs
Lawrence Technological University, Southfield, Michigan. March 2016 – present.
Director of Civil Engineering Graduate Programs. August 2013 – present.

Assistant Professor and Director of Civil Engineering Graduate Programs
Lawrence Technological University, Southfield, Michigan. August 2010 – March 2016.

Structural Engineer
Ruby and Associates, Inc., Farmington Hills, Michigan. December 2005 – August 2010.

Adjunct Professor
Lawrence Technological University, Southfield, Michigan. January 2007 – Dec. 2009.

Research/Teaching Assistant
Purdue University. West Lafayette, Indiana. August 2004 – December 2005.

Research/Teaching Assistant
Michigan State University. East Lansing Michigan. August 2002 – August 2004.

Construction Observer (Intern)
Urban Engineering. Allen Park, Michigan. May 2001 – August 2001.

Peer-Reviewed Publications

Salem, S. and **Kowalkowski**, K. (2018). “Effects of Heat Cambering On Residual Stresses in Steel Beams”.
Scholars Journal of Engineering and Technology (SJET). Vol. 6, Issue 4 (April, 2018).

- Kowalkowski, K.J.**, Grace, N.F., and Hodges, S.E. (2013). “Three-Dimensional Material Properties of Composites with S2-Glass Fibers or Ductile Hybrid Fabric”. International SAMPE Technical Conference, 2013, SAMPE 2013 Conference and Exhibition.
- Kowalkowski, K.J.**, Grace, N.F., and Hodges, S.E. (2012). “Test Methods for Measuring Material Properties of Composite Materials in all Three Material Axes”. International SAMPE Technical Conference, 2012, SAMPE 2012 Conference and Exhibition.
- Kowalkowski, K.J.**, and Varma, A.H. (2007). “Effects of Multiple Damage-Heat Straightening Repairs on Steel Beams” Transportation Research Board: Journal of the Transportation Research Board, Issue 2028, pp. 67-77, TRB, Washington, D.C.
- Kowalkowski, K.J.**, and Varma, A.H. (2006). "Experimental Investigations of the Effects of Multiple Damage-Heat Straightening Repairs on the Structural Properties of Bridge Steels," Transportation Research Record: Journal of the Transportation Research Board, Issue 1907, pp. 67-77, TRB, Washington, D.C. 1st Tier.
- Kowalkowski, K.J.**, and Varma, A.H. (2005). "Structural Properties of Steels Subjected to Multiple Cycles of Damage Followed by Heating Repair," Journal of Structural Engineering, Vol. 133, No. 2, pp 283-296. ASCE. 1st tier.
- Varma A, H., **Kowalkowski, K.J.**, and Shingledecker, J. (2004). “Multiple Heat Straightening Repair of Damaged Steel Bridges,” Proceedings of the Transportation Research Board Meetings, TRB, NAS, [computer file].
- Kowalkowski, K.J.** and Varma, A.H. (2003). “Evaluation of Analytical Models for High Strength Square CFT Beam-Columns.” Proceedings of the Annual Technical Session and Meeting, Structural Stability Research Council, University of Florida, Gainesville, FL, pp. 539-563.

Technical Reports

- Kowalkowski, K.J.** and Rodilla, J.A. (2019). “Analysis and Design of Eccentric Stiffeners Part of Moment Connections to Column Flanges”. Final Report, American Institute of Steel Construction, August 2019.
- Kowalkowski, K.J.** and Rodilla, J.A. (2018). “Analysis and Design of Eccentric Stiffeners Part of Moment Connections to Column Flanges”. Preliminary Report, American Institute of Steel Construction, October 2018.
- Kowalkowski, K.J.** and Medi, S.T. (2018). “Experimental Testing of Irregular Hanger Connections Used in General Motor Automotive Plants”. Final Report, Nederveld Inc., December 2018.
- Grace, N.F., **Kowalkowski, K.J.**, and Harrison, R. (2015). “Welding Fume Analysis of Fumes Generated From Weld Guns Used in Plants of Fiat Chrysler Automobiles”. Final Report, Fiat Chrysler Automobiles, December 2018.
- Grace, N.F., **Kowalkowski, K.J.**, and Harrison, R. (2015). “Final Report for Flammability, Smoke, and Toxicity (FST) Testing”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, September 2015.

- Grace, N.F., **Kowalkowski, K.J.**, and Koch, R. (2015). “Final Report for Composite Armor Testing in Environmental Chamber”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, September 2015.
- Grace, N.F., **Kowalkowski, K.J.**, Koch, R. and Al-Musawi, W. (2015). “Interim Final Report: Thermal Cycling”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, September 2015.
- Grace, N.F., **Kowalkowski, K.J.**, Koch, R. and Al-Musawi, W. (2015). “Interim Final Report: Humidity”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, August 2015.
- Grace, N.F., **Kowalkowski, K.J.**, Koch, R. and Al-Musawi, W. (2015). “Interim Final Report: Cold Loading”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, August 2015.
- Grace, N.F., **Kowalkowski, K.J.**, Koch, R. and Al-Musawi, W. (2015). “Interim Final Report: Hot Loading”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, August 2015.
- Kowalkowski, K.J.**, Grace, N.F., and Harrison, R. (2015). “Final Report for Oxygen Index Testing of Flame Retardant Polypropylene Materials”. Contract Final Report, Cable Components Group, May 2015.
- Kowalkowski, K.J.**, Alhamzi, Y., and Waraska N. (2014). “Report for the Completion of Testing on Cold-Formed Steel Sections in Structural Testing Center”. Contract Final Report, Bouma Construction, November 2014.
- Grace, N.F., **Kowalkowski, K.J.**, Harrison, R., Bebawy, M., and Waraska, N. (2013). “Testing Methodology for Flammability, Smoke, and Toxicity (FST) Testing”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, June 2013.
- Grace, N.F., and **Kowalkowski, K.J.** (2012). “Final Report – Vehicle Armor Structure and Testing for Future Combat System”. Final Report, Tank Automotive Research Development and Engineering, December 2012.
- Grace, N.F., **Kowalkowski, K.J.**, Bebawy, M., and Panajoti, E. (2012). “Strategy Plan for Flammability, Smoke, and Toxicity (FST) Testing”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, May 2012.
- Kowalkowski, K.J.** (2011). “Identification of Fire-Testing Needs for Structural Steel Members and Connections”. LTU internal report from seed grant sponsored by RSSC, December, 2011.
- Grace, N.F., **Kowalkowski, K.J.**, and Eamon, C. (2011). “Final Report – Armor Structure and Testing for Future Combat System-FCS”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center and Mississippi State University, August 2011.
- Grace, N.F., **Kowalkowski, K.J.**, Bebawy, M., and Panajoti, E. (2011). “Review of Existing Standards for Flammability, Smoke, and Toxicity Testing”. Partial contract fulfillment, Tank Automotive Research Development and Engineering Center, June 2011.

Varma, A.H. and **Kowalkowski, K.J.** (2004). "Effects of Multiple Damage-Heat Straightening Repair on the Fundamental Properties of Bridge Steels." MDOT Report No. RC-1456, Michigan Department of Transportation, Construction and Technology Division, Lansing, MI, 418 pp.

Conference Presentations

Kowalkowski, K.J., Grace, N.F., and Hodges, S.E. "Three-Dimensional Material Properties of Composites with S2-Glass Fibers or Ductile Hybrid Fabric". *SAMPE 2013 International Conference*, Long Beach, CA, May 7, 2013.

Kowalkowski, K.J., Grace, N.F., and Hodges, S.E. "Test Methods for Measuring Material Properties of Composite Materials in all Three Material Axes". *SAMPE 2012 International Conference*, Baltimore, MD, May 24, 2012.

Kowalkowski, K.J., and Varma, A.H. "Effects of Multiple Damage-Heat Straightening Repairs on Steel Beam Bridges," *Transportation Research Board*, Washington, D.C., January, 2005.

Kowalkowski, K.J., and Varma, A.H. "Experimental Investigations of the Effects of Multiple Damage-Heat Straightening Repairs on the Structural Properties of Bridge Steels," *Transportation Research Board*, Washington, D.C., January, 2004.

Kowalkowski, K.J. and Varma, A.H. "Evaluation of Analytical Models for High Strength Square CFT Beam-Columns." *SSRC Annual Technical Session*, Baltimore, MD, April 2-5, 2003.

Technical Guideline

Grace, N.F., and **Kowalkowski, K.J.** (2015). "Guideline for Flammability, Smoke, and Toxicity Test Methods and Acceptability Criteria for Military Ground Vehicles". Department of Defense, Submitted September 2015.

Non-Conference Technical Presentations and Poster Sessions

Kowalkowski, K.J., Grace, N.F., Harrison, R. and Muszynski, T. (2015) "Flammability Smoke and Toxicity Testing Research". Poster Session. *LTU Research Day*, Southfield, MI, April 10, 2015.

Kowalkowski, K.J., Grace, N.F. "Development of a Flammability, Smoke, and Toxicity Standard for Evaluating Materials Part of Army Ground Vehicles". *LTU Research Day*, Southfield, MI, April 4, 2014.

Kowalkowski, K.J., Grace, N.F. "Three-Dimensional Material Properties of Composites with S-2 Glass Fibers or Ductile Hybrid Fabric". *LTU Research Day*, Southfield, MI, March 29, 2013.

Research Projects: 2010 to Present

Welding Fume Analysis of Fumes Generated from Weld Guns Used in Plants of Fiat Chrysler Automobiles

Role and Years: PI, 2018

Amount: \$30,000

Status: Complete

Sponsor: Fiat Chrysler Automobiles.

Evaluation of Irregular Hanger Connections

Role and Years: PI, 2018

Amount: \$43,802

Status: Complete

Sponsor: Nederveld Inc. (Sponsored Through General Motors and SSOE)

Analysis and Design of Eccentric Stiffeners Part of Moment Connections to Column Flanges

Role and Years: PI, 2017-2019

Amount: \$120,616

Status: Funded, Ongoing

Sponsor: American Institute of Steel Construction

Oxygen Index Testing of Flame Retardant Polypropylene Materials

Role and Years: PI, 2015

Amount: \$1,210

Status: Complete

Sponsor: Cable Components Group

Influence of Heat Cambering on Steel Beams

Role and Years: PI, 2015-2016

Amount: \$5,000

Status: Ongoing

Sponsor: LTU – Research Support Services Committee

Cold-Formed Steel Joist Testing in Structural Testing Center

Role and Years: PI, 2014

Amount: \$8,195

Status: Complete

Sponsor: Bouma Construction

Armor Testing in Comprehensive Environmental Chamber

Role and Years: Co-PI, 2012-2015

Amount: \$224,952

Status: Complete

Sponsor: Tank Automotive Research and Development Engineering Center

Development of a Flammability, Smoke, and Toxicity Standard for Army Ground Vehicles

Role and Years: Co-PI, 2011-2015

Amount: \$1,480,000

Status: Complete

Sponsor: Tank Automotive Research and Development Engineering Center

Vehicle Armor Structure & Testing for Future Combat System

Role and Years: Co-PI, 2010-2013

Amount: \$723,500

Status: Complete

Sponsor: Tank Automotive Research and Development Engineering Center

Identification of Fire-Testing Needs for Steel Members and Connections

Role and Years: PI, 2010- 2012

Amount: \$3,000.

Status: Complete

Sponsor: LTU – Research Support Services Committee

Armor Structure and Testing for Future Combat System-FCS

Role and Years: Co-PI, 2010- 2011

Amount: \$850,543

Status: Complete

Sponsor: Tank Automotive Research and Development Engineering Center

Proposals Submitted/Not Funded

Influence of Bolt Bearing and Tearout on the Capacity of Eccentrically Loaded Bolted Connections

Role and Submittal Date: PI, November 2017

Amount: \$171,744

Status: Pending

Sponsor: American Institute of Steel Construction

Evaluation of Concentric and Eccentric Connections Designed with Bolts and Welds Intended to Share Load Transfer

Role and Submittal Date: PI, July 2017

Amount: \$99,114

Status: Not Funded

Sponsor: American Institute of Steel Construction

Connection Details of Adjacent Precast Concrete Box Beam Bridges

Role and Submittal Date: Co-PI, January 2013

Amount: \$449,956

Status: Not Funded

Sponsor: Transportation Research Board

Derivation of Multi-Axis Material Models of Orthotropic Composite materials using Axial, Torsional, Shear, and Combined Loading

Role and Submittal Date: PI, August 2012

Amount: \$344,151

Status: Not Funded

Sponsor: National Science Foundation

CAREER: Fire Response of Structural Steel Connection Elements

Role and Submittal Date: PI, July 2012

Amount: \$400,001

Status: Not Funded

Sponsor: National Science Foundation

Innovative Composite Materials for Bridging Technology (initial white page only, pre-proposal)

Role and Submittal Date: Co-PI, January 2015

Amount: \$1,000,000

Status: Not Funded

Sponsor: National Advanced Mobility Consortium

FST Research for Seating Materials

Role and Submittal Date: Co-PI, October 2015

Amount: \$20,000

Status: Not Funded

Sponsor: Tank Automotive Research and Development Engineering Center

Highlighted University Service, Curriculum Development, and Advising

Faculty Senate	(2016 - 2019)
Engineering Faculty Council	(2017 - 2018)
Engineering Faculty Senate Tenure Review Committee	(2016 - Present)
Faculty Advisor: ACI Student Chapter	(2016 - Present)
Doctoral Governance Committee	(2013 - Present)
Departmental Curriculum Committee	(2010 - Present)
Exploration Day, Fall and Spring Semesters	(2010 - Present)
Course Coordinator, 4-7 Courses/Semester	(2010 - Present)
Master Thesis Committees, 16 Students	(2011 - Present)
PhD Dissertation Committees, 5 Students	(2012 - Present)
CE Undergraduate Academic Adviser	(2010 - 2013)
Graduate Student Academic Adviser, all Graduate Students	(2013 - Present)
Capstone Subdisipline Adviser and Team Adviser	(2010 - Present)
Graduate Certificate in Fire Engineering: Curriculum/Proposal Development	(2012 - 2013)
Master of Science in Fire Engineering: Curriculum/Proposal Development	(2013)
Master of Science in Civil Engineering: New Program Development	(2014)
Course Initiation (inc. Course Authorization Forms) for 17 courses	(2011 - 2014)
Course Development of ECE 5773 Advanced Steel Design	(2011 - 2012)
Course Development of ECE 5733 Design of Masonry Structures	(2016)
PhD Qualifying Exam	(2013)
Honor's Section, Theory of Structures	(2012)
PCI Big Beam Contest Adviser	(2013)
Steel Bridge Team Advisor	(2010-2012, 2014-Pres)
Civil Engineering Summer Camp	(2012 - 2014, 2016)
Out-of-State Scholarship Competition	(2014 - 2015)
Master of Science in Civil Engineering – Online Program Coordination	(2017)

Professional Licensures

Professional Engineer – State of Michigan, 2008 - Present

Board of Professional Engineers, #6201056017

Structural Engineer – State of Illinois, 2009 - Present

Department of Financial and Professional Regulation, #081.006895

Professional Organizations

American Concrete Institute (2016 - Present)

American Institute of Steel Construction (2006 - Present)

American Society of Civil Engineers (2006 - Present)

Chi Epsilon (2012 - Present)

Precast/Prestressed Concrete Institute (2013 - 2015)

Structural Engineers Association of Michigan (2006 - Present)

Transportation Research Board (2005 - 2010)

Society of Advanced of Material and Process Engineering (2012 - 2014)

Undergraduate Courses Taught

ECE 3013 Mechanics of Materials for Civil Engineers

ECE 3723 Theory of Structures

ECE 4733 Advanced Structural Analysis

ECE 4743 Concrete Design

ECE 4753 Steel Design

EAE 4024 Architectural Engineering Integrated Design Studio 2

Graduate Courses Taught

ECE 5733 Design of Masonry Structures

ECE 5753 Advanced Concrete Design

ECE 5773 Advanced Steel Design

ECE 6743 Structural Dynamics

ECE 6073/6083 Thesis 1 and Thesis 2

ECE 7993 Independent Research

DIS 8713/8716/8719 PhD in Civil Engineering Dissertation

Other University Activities and Positions

Interim Director of MCE and MSCE Programs (Jan. 2013 – Jun. 2013)

Director of Civil Engineering Graduate Programs (Jun. 2013 – Present)

Summer Symposium (Summer 2012)

Implemented into ECE 3013 Fall 2012

Problem Based Learning Workshop (KIT Faculty) (Summer 2011)

Implemented into ECE 3723, Spring 2012

Active Collaborative Learning Workshop (KIT Faculty) (Summer 2012)

Implemented into ECE 3723, Spring 2013

Entrepreneurial Mindset Learning Workshop (KIT Faculty) (Summer 2015)

Implemented into ECE 3723, Spring 2016