

# CURRICULUM VITAE

**O. Burkan Isgor, Ph.D., P.E. (ON, Canada)**

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Oregon State University  
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(and Materials Science Program)  
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## A. EDUCATION AND EMPLOYMENT INFORMATION

### A1. Education

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|------|--|
| 2001 | Ph.D., Civil Engineering<br>Carleton University, Ottawa, Ontario, Canada     |
| 1997 | M.S., Civil Engineering<br>Carleton University, Ottawa, Ontario, Canada      |
| 1995 | B.S., Civil Engineering<br>Bogazici (Bosphorus) University, Istanbul, Turkey |

### A2. Employment

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| Sept. 2016 - present  | Professor<br>School of Civil and Construction Engineering<br>(and Materials Science Program)<br>Oregon State University, Corvallis, OR           |
| Sept. 2012–Sept. 2016 | Associate Professor<br>School of Civil and Construction Engineering<br>(and Materials Science Program)<br>Oregon State University, Corvallis, OR |
| July 2014–present     | Adjunct Research Professor<br>Department of Civil and Environmental Engineering<br>Carleton University, Ottawa, Ontario, Canada                  |
| July 2008–July 2012   | Associate Professor<br>Department of Civil and Environmental Engineering<br>Carleton University, Ottawa, Ontario, Canada                         |
| July 2007–July 2008   | Assistant Professor (Tenured)<br>Department of Civil and Environmental Engineering<br>Carleton University, Ottawa, Ontario, Canada               |

Sept. 2003–July 2007	Assistant Professor (Tenure Track) Department of Civil and Environmental Engineering Carleton University, Ottawa, Ontario, Canada
Aug. 2001–Sept. 2003	Engineering Software Development Manager (Finite Element Analysis Software Division) Winsoft Software Inc., Ottawa, Ontario, Canada
Sept. 2000–Jan. 2002	Sessional Lecturer Department of Civil and Environmental Engineering Carleton University, Ottawa, Ontario, Canada
Apr. 1996–Sept. 2000	Finite Element Software Developer (Part-Time) Winsoft Software Inc., Ottawa, Ontario, Canada
Sept. 1995–Sept. 2001	Research Assistant Department of Civil and Environmental Engineering Carleton University, Ottawa, Ontario, Canada
Sept. 1995–Sept. 2001	Teaching Assistant Department of Civil and Environmental Engineering Carleton University, Ottawa, Ontario, Canada

### **A3. Academic and Professional Appointments**

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2012–present	Secretary, ACI 222 - Committee on Corrosion of Metals
2014–present	Associate Editor, ASCE Journal of Materials
2014–present	Member, NSERC Discovery Grants Evaluation Group 1509
2014–present	Member, Horst Leipholtz Medal Selection Committee
2012–2016	Scientific Advisor, Giatec Scientific Inc.
2012–2016	OSU CCE Infrastructure Materials Group Coordinator
2013-2015	OSU CCE Chair of the Graduate Committee
2013–2014	Member, ACI Wason Medal Selection Committee
2009–2011	Vice President (Technical), Canadian Society for Civil Eng. (CSCE)
2009–2010	Vice President (Programs), CSCE
2009–2011	Member, Board of Directors, CSCE
2009–2011	Member, National Management Committee, CSCE
2007–2012	Chair, Career Development, NACE National Capital Chapter
2006–2009	Chair, Engineering Mechanics and Materials Committee, CSCE
2005–2006	Chair, IT and Innovation Committee, CSCE

### **A4. Professional Registration**

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Aug. 2005–present	Professional Engineer, Ontario, Canada, License No. 100077412
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## B. TEACHING, ADVISING, AND OTHER ASSIGNMENTS

### B1. Instructional Summary

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#### B1.1. Credit Courses

At Carleton University (CU) <sup>(1)</sup>				
Number	Course Title	Term/Year	Credits	Enrollment
82.220	Mechanics of Solids <sup>(2,3)</sup>	Fall 2000	4	36
82.270	CE Materials <sup>(2,3)</sup>	Winter 2001	4	38
82.432	Reinforced Concrete II <sup>(2)</sup>	Fall 2001	4	15
CIVE2200	Mechanics of Solids I <sup>(3)</sup>	Fall 2003	4	89
CIVE4908	Capstone Design Project	Winter 2004	4	30
ECOR3800	Engineering Economics	Winter 2004	4	255
CIVE2201	Mechanics II	Fall 2004	4	79
CIVE2200	Mechanics of Solids I <sup>(3)</sup>	Fall 2004	4	104
CIVE4908	Capstone Design Project	Winter 2005	4	31
CIVE5708	FEM in Field Problems	Winter 2005	4	7
CIVE4302	Reinforced Concrete II	Fall 2005	4	33
ECOR1101	Mechanics I	Fall 2005	4	145
CIVE5708	FEM in Field Problems	Winter 2006	4	15
CIVE4908	Capstone Design Project	Winter 2006	4	51
CIVE5906	Directed Studies (Corrosion)	Winter 2006	4	1
CIVE4302	Reinforced Concrete II	Fall 2006	4	45
ECOR1101	Mechanics I	Fall 2006	4	163
CIVE4908	Capstone Design Project	Winter 2007	4	88
CIVE5208	Adv. Reinforced Concrete	Winter 2007	4	14
CIVE5906	Directed Studies (Corrosion)	Winter 2006	4	2
CIVE4302	Reinforced Concrete II	Fall 2007	4	35
CIVE5708	FEM in Field Problems	Fall 2007	4	16
ECOR1101	Mechanics I	Winter 2008	4	188
CIVE5906	Directed Studies (Electrochem.)	Winter 2008	4	4
CIVE5708	FEM in Field Problems	Fall 2008	4	14
CIVE4302	Reinforced Concrete II	Fall 2008	4	35
ECOR1101	Mechanics I	Winter 2009	4	159
CIVE4908	Capstone Design Project	Winter 2009	4	79
CIVE5708	FEM in Field Problems	Fall 2010	4	18
ECOR1101	Mechanics I	Winter 2011	4	199
CIVE5708	FEM in Field Problems	Fall 2011	4	10
ECOR1101	Mechanics I	Winter 2012	4	214

#### NOTES:

- (1) Carleton University follows a semester system.
- (2) I offered these courses as a sessional lecturer at Carleton University.
- (3) These courses had additional laboratory components.

At Oregon State University (OSU)				
Number	Course Title	Term/Year	Credits	Enrollment
CCE520	Cond. Assess. & Rep. of RC	Winter 2013	4	11
CCE321	CCE Materials	Spring 2013	4	25
CE419-020 <sup>(1)</sup>	Civil Infra. Design (Str. Lab)	Spring 2013	4	26
CE481/581	Reinforced Concrete I	Fall 2013	4	69
CCE520	Corrosion and its Control	Fall 2013	4	19
CE481/581	Reinforced Concrete I	Spring 2014	4	37
CCE520	Cond. Assess. & Repair of RC	Spring 2014	4	8
CCE520	Corrosion and its Control	Winter 2015	4	11
CE532	Finite Element Analysis	Winter 2015	4	19
CE505	Reading and Conference (FEM)	Spring 2015	3	1
CCE520	Cond. Assess. & Repair of RC	Spring 2015	4	8
CCE321	CCE Materials	Spring 2015	4	41
CCE520	Corrosion and its Control	Winter 2016	4	11
CE532	Finite Element Analysis	Winter 2016	4	19
CCE520	Cond. Assess. & Repair of RC	Spring 2016	4	5
CCE321	CCE Materials	Spring 2016	4	60

**NOTES:**

(1) CE 419 Capstone Design Project course was organized and managed by another instructor. I only managed the structures lab (Section 020) and did not have any contribution in the organization, format, and structure of the course.

**B1.2. Non-Credit Courses and Workshops**

None.

**B1.3. Course and Curriculum Development**

**(OSU) CCE 520 - Condition Assessment and Repair of Reinforced Concrete Structures:** I developed this course and offered it for the first time at Oregon State University. The course is wide in its scope, and covers (1) condition assessment of reinforced concrete structures through non-destructive and laboratory techniques as well as service and remaining life prediction tools, (2) repair of reinforced concrete infrastructure and development of control strategies such as cathodic protection. The course has been evolving over the three times I taught it. In the first two years, I kept the breadth rather wide to cover as many topics as possible. However, in our quarter system, this approach did not allow in-depth discussion of some of the critical topics. In 2015, I reorganized the course material by moving the emphasis on critical topics such as detection and monitoring of durability issues, use of modeling to condition assessment, and repair. I also incorporated a term project so that students can apply the skills that they develop in this course on a case study with real data. After these revisions, I saw a considerable increase in student satisfaction, which is clearly indicated in the course evaluations that are presented in Section B2.

**(OSU) CCE 520 - Corrosion and its Control:** I developed this course and offered it for the first time at Oregon State University. The course is designed to be a generic course on corrosion and intended to attract students from different engineering disciplines and colleges. This goal is definitely achieved since the first time I offered the course, which has been receiving students from civil engineering, mechanical engineering, materials science, chemical engineering, environmental engineering, ocean sciences, and nuclear engineering. The course covers topics

such as the forms of corrosion, the cost of corrosion, corrosion thermodynamics, corrosion kinetics, passivity, measurement of corrosion, and corrosion control and protection. The course also contains laboratory demonstrations to elucidate the fundamental concepts such as polarization and corrosion kinetics as well as basic principles of corrosion measurement techniques. The students are also asked to write term papers on corrosion problems that are specific to their area of specialization and present them to their peers. Since corrosion is a pervasive phenomenon, it is impossible to cover all discipline-specific topics in a single course; therefore, this approach allows the students learn how the knowledge that they gain from the course is applied in different fields. In the following years, I am planning to increase the weight of the laboratory component of the course to allow students to gain hands-on experience.

**(CU) CIVE 5708 – Finite Element Method in Field Problems:** I developed this course at Carleton University due to the increased demands from faculty and graduate students in fields other than structural engineering, which already had a dedicated course on the topic. The course was designed to solve the generic elliptic, parabolic and hyperbolic boundary and initial value problems using generic techniques such as the Galarkin method. The course included applications in materials science, geotechnical engineering, environmental engineering, fluid mechanics and transport in porous media. However, all applications were presented in the form of generic boundary value problems with a focus on the solution of the partial differential equation(s) with given boundary and initial conditions. Since Carleton University is on a semester system, I was also able to cover introductory topics on nonlinear systems, mostly in the form of material and boundary condition nonlinearity, and coupled problems. Due to the course's generic scope, I regularly received students from geotechnical engineering, hydraulic engineering, materials science, and environmental engineering.

**(CU) CIVE 4908 – Capstone Design Project:** I became responsible for the capstone design project right after my hiring at Carleton University, which coincided with the completion of an accreditation visit that recommended significant changes to bring the course in line with the recent requirements of the Canadian Engineering Accreditation Board. Starting from the year of my tenure, I began the process of overhauling the format of the course completely to expose students to all phases of design (i.e., conceptualization, feasibility study, analysis and design) in a setting that allowed group activity, direct supervision, and industrial mentoring. I also led the development of a dedicated capstone design studio which contained large group study desks, a reference library, and computers equipped with analysis and design software, as well as presentation and meeting spaces. The room was accessible continuously to students who were registered to the course and had specially-issued access cards. Until 2010, I served both as the coordinator and advisor to the groups; however, due to increasing number of civil engineering students in the department, after 2010 advising responsibilities were delegated to individual faculty members while I remained as the coordinator.

#### **B1.4. Team or Collaborative Efforts**

Dr. Jason Ideker and I are in the process of renaming all of the courses in the area of Infrastructure Materials to have a CCE 52X designation. The first step in this process was to create a CCE 520 course where various topics that were appropriate to the students, research projects, or cutting age issues in infrastructure materials could be taught.

#### **B1.5. International Teaching**

Note the courses taught at Carleton University, Canada.

## B2. Student and Participant Evaluations

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Available upon request.

## B3. Peer Teaching Evaluations

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Available upon request.

## B4. Advising

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### B4.1. Graduate Advisees – Completed

Student	Degree	Thesis	Graduated
<b>At Oregon State University</b>			
1. Maximo Luke Argo	MS	<i>Seismic performance of aging prestressed transmission poles with simulated soil foundation (co-advised by Dr. Chris Higgins and Dr. Jason Ideker)</i>	Summer 2016
2. David Rodriguez	MS	<i>Evaluation of the Effect of Chloride Ingress and Freeze-Thaw Cycles on Electrical Resistivity of Reinforced Concrete (co-advised by Dr. Jason Ideker)</i>	Fall 2015
3. Jon Williamson	MS	<i>Electronic properties of passive films on carbon steel rebar in simulated concrete pore solutions</i>	Spring 2015
4. Monica Morales	MS	<i>Experimental investigation of the effects of embedded rebar, cracks, chloride ingress and corrosion on electrical resistivity measurements of reinforced concrete</i>	Spring 2015
5. Ben Sohn	MS	<i>Evaluation of the propagation of alkali-silica reaction through the introduction of NaCl (co-advised by Dr. Jason Ideker)</i>	Fall 2014
<b>At Carleton University</b>			
6. Sahar Soleimani	PhD	<i>Prevention and control of microbially influenced deterioration of concrete in wastewater treatment plants (co-advised by Dr. Banu Ormeci)</i>	Fall 2012
7. Pouria Ghods	PhD	<i>Multi-scale investigation of the formation and breakdown of passive films on carbon steel rebar in concrete</i>	Fall 2010
8. Steven Craft	PhD	<i>Modelling coupled heat and mass transfer in light-frame wood floor assemblies (co-advised by Dr. George Hadjisophocleus)</i>	Fall 2009
9. Abdelgadir Abbas	PhD	<i>Durability of green concrete as a structural material</i>	Spring 2007
10. Gholamreza Fathifazl	PhD	<i>Structural performance of steel reinforced recycled concrete members (Academic advisor)</i>	Fall 2007
11. Hossein Sallehi	MS	<i>Characterization of cement paste in fresh state using electrical resistivity technique</i>	Fall 2015

		<i>(co-advised by Dr. Pouria Ghods)</i>	
12. Mustafa Salahi	MS	<i>Numerical investigations on the detection of concrete resistivity using Wenner Probe technique</i>	Fall 2013
13. Parham Chabi	MS	<i>Comparative investigation of corrosion detection methods for reinforced concrete structures (Co-advised by Dr. Beatriz Martin-Perez)</i>	Fall 2012
14. Burak Gunay	MS	<i>Depassivation and pitting of carbon steel surfaces in alkaline environments</i>	Fall 2012
15. Gian-Luca Porcari	MS	<i>Effect of fires on corroded reinforced concrete flexural members (Co-advised by Dr. Ehab Zalok)</i>	Fall 2011
16. Pihilippe Marinier	MS	<i>Identification of anodic and cathodic locations on corroding steel reinforcement in concrete using inverse modelling of half-cell potential measurements</i>	Fall 2011
17. Kosta Karadakis	MS	<i>Numerical investigation of the chemistry of the pore solution in the mill scale crevices of carbon steel rebar</i>	Fall 2010
18. Thomas Miller	MS	<i>Evaluation of organic barrier coatings for wastewater digesters using electrochemical impedance spectroscopy</i>	Fall 2009
19. Sahar Soleimani	MS	<i>Numerical simulation of biological clogging in biofilters (Co-advised by Dr. Paul Van Geel)</i>	Fall 2007
20. Mohammad Pour-Ghaz	MS	<i>Methods for calculating the corrosion rate of uniformly depassivated reinforcing bars in concrete</i>	Fall 2007
21. Ji Ge	MS	<i>On the numerical solution of Laplace's equation for corrosion of steel in concrete</i>	Fall 2006

#### **B4.2. Graduate Advisees – Current**

<b>Student</b>	<b>Degree</b>	<b>Expected Graduation</b>
1. Tyler Deboodt <sup>(1)</sup>	PhD	Summer 2017
2. Hossein Dormohammadi	PhD	Summer 2018
3. Pratik Murkute	PhD	Summer 2020
4. Silas Shields <sup>(1)</sup>	MS	Fall 2017
5. Ali Riza Erbehtas	MS	Summer 2018

#### **NOTES:**

1) Co-advised with Dr. Jason Ideker

#### **B4.3. Graduate Thesis or Project Committees**

##### **MEng Advisor:**

##### ***Graduated***

1. Jose Enrique Mendoza Ramirez, MEng, 2011 (CU)

2. Nathan Harry Baker, MEng, 2010 (CU)
3. Jihad Boutros Aoun, MEng, 2006 (CU)

**Current**

None

**Minor Professor or Committee Member:**

**Graduated (\*)**

1. Chang Li, PhD, 2016 (OSU)
2. Matt Adams, PhD, 2015 (OSU)
3. Tengfei Fu, PhD, 2013 (OSU)
4. Lapyote Prasittisopin, PhD, 2013 (OSU)
5. Eric Varva, MS, 2016 (OSU)
6. Jonathan Knudtsen, MS, 2016 (OSU)
7. Drew Nielson, MS, 2015 (OSU)
8. Greg Hendrix, MS, 2015 (OSU)
9. Jiaming Chen, MS, 2014 (OSU)
10. Laura Barker, MS, 2014 (OSU)
11. Tim Link, MS, 2014 (OSU)
12. Jose Banuelos, MS, 2014 (OSU)
13. Therese Pflaum, MS, 2013 (OSU)
14. Farhood Nowzartash, PhD, 2010 (CU)
15. Adedeji Dunmola, PhD, 2009 (CU)
16. Amre Deif, PhD, 2009 (CU)
17. Muslim Majeed, PhD, 2009 (CU)
18. Christine Raab, PhD, 2008 (CU)
19. Mohamed Elshafey, PhD, 2008 (CU)
20. Osama Ibrahim, PhD, 2008 (CU)
21. Alozadeh Rouhollah, PhD., 2008 (CU)
22. Ashraf Zaghoul, PhD, 2007 (CU)
23. Derek Baingo, PhD., 2006 (CU)
24. Dalia Said, PhD., 2006 (CU)
25. Tai Sato, PhD., 2005 (CU)
26. Abdelzaher Mostafa, PhD., 2004 (CU)

*(\*) Only PhD students are listed from Carleton (CU) due to the large number of MS students (over 25 students from 2003 to 2012)*

**Current**

1. Mahmoud Shakouri, PhD (Civil Engineering) (OSU)
2. Pavan Naga Vaddey, PhD (Civil Engineering) (OSU)
3. Qin Pang, PhD (Chemical Engineering) (OSU)
4. Reyixiati Repukaiti, MS (Materials Science) (OSU)

**Graduate Council Representative:**

1. Xianfei Wen, PhD, 2016 (Nuclear Engineering) (OSU)
2. Bradley Ling, MS, 2015 (Mechanical Engineering) (OSU)
3. Brandyn James, MS, 2014 (Nuclear Engineering) (OSU)

#### **B4.4. Undergraduate Research Assistants**

1. Suellen Nerone (2015 – 2016) (OSU)
2. Brianne Velasquez (2015 – 2016) (OSU)
3. Walter Lee Webster (2015 – 2016) (OSU)
4. Kristin Jones (2015 – 2016) (OSU)
5. Raven Merritt-Shorb (2015 – 2016) (OSU)
6. Nathan Jones (2013 – 2016) (OSU)
7. Christine Baker (2014 –2016) (OSU)
8. Andrew Thomas (2013 –2015) (OSU)
9. Aaron Strand (2014–2015) (OSU)
10. Neil Schweitzer (2014–2015) (OSU)
11. Sean Gertz (2012–2013) (OSU)
12. Adal Guerra Cabrera (2013) (OSU)
13. Monica Morales (2013) (OSU)
14. Ashish Sharma (2009) (CU)
15. Mohammad Bouzoubaa (2009, 2012) (CU)
16. Allen Johnson (2009) (CU)
17. Brian Foo (2008) (CU)
18. Danielle Sampson (2007) (CU)
19. Hilda Esedebe (2006) (CU)

#### **B4.5. Postdoctoral Trainees and Faculty Research Assistants**

1. Vahid Jafari Azad, PhD, 2014-present (OSU)
2. Parnian Hosseini, PhD, 2015-present (OSU)
3. Pouria Ghods, PhD, 2010-2011 (CU)
4. Abdelzaher Mostafa, PhD, 2005-2006 (CU)

#### **B4.6. Other Advising**

**Capstone Project Advisor – Capstone Design Projects, Carleton University (2003 – 2012):** Supervision of over 30 capstone design projects in structural engineering.

**Faculty Advisor – Great Northern Concrete Toboggan Race (GNCTR) Team, Carleton University (2003 – 2007):** Supervision of the conceptualization, design and building of a concrete toboggan, as well as the preparation of the technical report. **2005 National Champions.**

#### **B5. Other Instruction Related Assignments**

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Guest Lecturing “Corrosion in marine environment” in CE 411 - Ocean Engineering, Fall 2013.  
Guest Lecturing “Cement and concrete research at OSU” in Honors Seminar, Fall 2013.

## C. SCHOLARSHIP AND CREATIVE ACTIVITY

### C1. Publications

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This section is not updated regularly. For an up-to-date list, please visit <http://web.engr.oregonstate.edu/~isgorb/pubs.php>

Advisees (graduate Students and postdoctoral researchers) are underlined.

#### **C1.1. Refereed Books & Book Chapters**

1. Isgor, O.B. (2016). Chapter 13: Modelling of Corrosion of Steel in Concrete Structures. In Corrosion of Steel in Concrete Structures, edited by Amir Poursaeed, Woodhead Publishing.
2. Abd El Halim, A.O., Elshafey, M., Isgor, O.B. (2010). Chapter 8: Reliable and Effective Protection, Detection and Repair System for Canadian Oil/Gas Pipeline System, edited by Andrew R. Thomas, ABC-CLIO, ISBN: 978-0-313-36420-4, 544 pp.
3. Razaqpur, A.G., Isgor, O.B. (2009). Chapter 3: Practical considerations in corrosion monitoring of reinforced concrete structures. In Frontier Technologies for Infrastructures Engineering, Structures and Infrastructures Book Series, Vol. 4, edited by Alfredo H.S. Ang, Shi-Shuenn Chen, CRC Press, ISBN: 978-0-415-49875-3, 462 pp.

#### **C1.2. Refereed Journal Publications**

1. Ghods, P. and Isgor O.B. (2016; in press). A critical look at advanced nano-to-macro scale characterization techniques to study passivity and corrosion of steel in concrete, ACI Special Publication.
2. Azad, V.J., Li, C., Verba, C., Ideker, J. H., Isgor, O.B. (2016). A COMSOL–GEMS interface for modeling coupled reactive-transport geochemical processes, Computers & Geosciences, 92: 79-89.
3. Karadakis, K., Azad, V.J., Ghods, P., Isgor, O.B. (2016). Numerical investigation of the role of mill scale crevices on the corrosion initiation of carbon steel reinforcement in concrete, J. of Electrochemical Society, 163(6): C306-C315. (*Role: PI of the project and the advisor of the lead author. Major contribution to the writing and revising of the paper.*)
4. Suraneni, P., Azad, V.J., Isgor, O.B., Weiss, W.J., (2016). Calcium oxychloride formation in pastes containing supplementary cementitious materials: Thoughts on the role of cement and supplementary cementitious materials reactivity, RILEM Technical Letters, 1: 24-30.
5. Williamson, J., Isgor, O.B. (2016). Investigation of Mott–Schottky analysis test parameters to study the semiconductive properties of passive films of carbon steel in highly alkaline environments, ASTM Advances in Civil Engineering Materials, 5(1): 80-106..
6. Williamson, J., Isgor, O.B. (2016). The effect of simulated concrete pore solution composition and chlorides on the electronic properties of passive films on carbon steel rebar, Corrosion Science, 106: 82-95.

7. Soleimani, S., Isgor, O.B., Ormeci, B. (2016). Effectiveness of E. coli biofilm on mortar to inhibit biodegradation by biogenic acidification, *ASCE Journal of Materials*, 28(4): 04015167.
8. David Trejo, Burkan Isgor, and W. Jason Weiss (2016). ACI's Allowable Admixed Chloride Conundrum, *ACI Concrete International*, 38(5): 35-42.
9. Suraneni, P. Azad, J.V., Isgor, O.B. and Weiss, W.J. (2016). Deicing salts and durability of concrete pavements and joints: Mitigating calcium oxochloride formation, *ACI Concrete International*, 38(4): 48-54.
10. Azad, V.J. and Isgor, O.B. (2016). A thermodynamic perspective on chloride limits of concrete produced with SCMs, *ACI Special Publication*, SP-308: 8.1-8.18.
11. Adams, M.P., Fu, T., Cabrera, A.G., Morales, M., Ideker, J.H., Isgor, O.B. (2016). Cracking susceptibility of concrete made with coarse recycled concrete aggregates, *Construction and Building Materials*, 102:802-810.
12. Salehi, M., Ghods, P. Isgor, O.B. (2016). Numerical study on the effect of cracking on surface resistivity of plain and reinforced concrete elements, *ASCE Journal of Materials*, 49 (1-2): 301-316.
13. Razaqpur A.G., Isgor, O.B., Esfandiari, A. (2015). Nonlinear finite element analysis of strength and durability of reinforced concrete and composite structures, *Challenge Journal of Structural Mechanics*, 1(4): 173-184.
14. Williamson, J., Azad, V.J., Isgor, O.B. (2015). Modeling electronic properties of the passive films on carbon steel in simulated concrete pore solutions, *Journal of Electrochemical Society*, 162(12): C619-C629.
15. Gunay, H.B., Isgor, O.B., Ghods, P. (2015). Investigation of the kinetics of passive film formation and chloride-induced depassivation using electrochemical quartz crystal nanobalance (EQCN), *Corrosion*, 71(5): 615-627.
16. Salehi, M., Ghods, P. Isgor, O.B. (2014). Numerical investigation of the role of embedded reinforcement mesh on electrical resistivity measurements of concrete using the Wenner probe technique, *Materials and Structures*. DOI 10.1617/s11527-014-0498-x, 1-16.
17. Soleimani, S., Isgor, O.B., Ormeci, B. (2013). Resistance of biofilm-covered mortars to microbiologically influenced deterioration simulated by sulfuric acid exposure. *Cement & Concrete Research*, 53: 229-238.
18. Soleimani, S., Ormeci, B., Isgor, O.B. (2013). Evaluation of E. coli biofilm as a protective barrier against microbiologically influenced deterioration of concrete (MICD) under mesophilic temperatures. *Journal of Water Science and Technology, International Water Association (IWA)*, 68(2): 303-310.

19. Bonany, J. E., Van Geel, P.J., Gunay, H.B., Isgor, O.B. (2013). Simulating waste temperatures in an operating landfill in Québec, Canada. *Waste Management & Research*, 31(7): 692-699.
20. Gunay, H.B., Ghods, P., Isgor, O. B., Carpenter, G.J., Wu, X. (2013). Characterization of atomic structure of oxide films on carbon steel in simulated concrete pore solutions using EELS. *Applied Surface Science*, 274: 195-202.
21. O. B. Isgor, Karadakis, K., Ghods, P. (2013). Numerical study of pore solution chemistry in surface crevices of carbon steel rebar. ACI Special Publication, ACI Special Publication, SP-291: Corrosion of Reinforcing Steel in Concrete - Future Direction, No. 3: 37-58.
22. Marinier, P., O. B. Isgor (2013). Refined half-cell potential mapping for corrosion detection using inverse modeling. ACI Special Publication, SP-291: Corrosion of Reinforcing Steel in Concrete - Future Direction, No: 7: 105-126.
23. Ghods, P., Isgor, O. B., Carpenter, G., Li, L., McRae, G., Gu, G. P. (2013). Nano-scale study of passive films and chloride-induced depassivation of carbon steel rebar in simulated concrete pore solutions using FIB/TEM. *Cement & Concrete Research*, 47: 55-68.
24. Bonany, J. E., Van Geel, P.J., Gunay, H.B., Isgor, O.B. (2013). Heat budget for an anaerobic bioreactor landfill in a northern climate. *Waste Management*, 33(5): 1215-1228.
25. Soleimani, S., Ormeci, B., Isgor, O.B. (2013). Growth and characterization of *Escherichia coli* DH5 $\alpha$  biofilm on concrete surfaces as a protective layer against microbiologically influenced concrete deterioration (MICD). *Applied Microbiology and Biotechnology*, 97(3): 1093-1102.
26. Porcari, G-L., Zalok, E., Isgor, O.B., (2012). "Fire performance of corrosion damaged reinforced concrete beams," *Journal of Structural Fire Engineering*, 3(4): 311-318.
27. Ghods, P., Isgor, O.B., Bensebaa, F., Kingston, D. (2012). Angle-resolved XPS Study of passive oxide film on carbon steel in simulated concrete pore solution and the role of chloride in depassivation. *Corrosion Science*, 58: 159-167.
28. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2012). Bond performance of deformed steel bars in concrete produced with coarse recycled concrete aggregate. *Canadian Journal of Civil Engineering*, 39(2): 128-139.
29. Soleimani, S., Ormeci, B., O.B. Isgor, and S. Papavinasam. (2011). Evaluation of biofilm performance as a protective barrier against biocorrosion using an enzyme electrode. *Journal of Water Science and Technology*, International Water Association (IWA), 64(8): 1736-1742.
30. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2011). Creep and drying shrinkage characteristics of concrete produced with coarse recycled concrete aggregate. *Cement and Concrete Composites*, 33(10): 1026-1037.
31. Razaqpur, A.G., Shedid, M. and Isgor, O.B. (2011). Shear strength of fiber reinforced polymer reinforced concrete beams subjected to unsymmetrical bending. *ASCE, J. of Composites for Construction*, 15(4): 500-512.

32. Ghods, P., Isgor, O.B., Li, J. McRae, G., Gu, G. (2011). Microscopic investigation of mill scale and its effect on the chloride-induced depassivation of carbon steel rebar. *Corrosion Science*, 53(3): 946-954.
33. Ghods, P., Isgor, O.B., Brown J., Bensebaa, F., Kingston, D. (2011). XPS depth profiling study on the passive oxide film of carbon steel in saturated calcium hydroxide solution and the effect of chloride on the film properties. *Applied Surface Science*, 257(10): 4669-4677.
34. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2011). Shear capacity evaluation of steel reinforced recycled concrete (RRC) beams. *Journal of Engineering Structures*, 33(3): 1025-1033.
35. Ghods, P., Isgor, O.B., McRae, G., Gu, G. (2010). Electrochemical investigation of chloride-induced depassivation of black steel rebar under simulated service conditions. *Corrosion Science*, 52(5): 1649-1659.
36. Soleimani, S., Ghods, P., Isgor, O.B., Zhang, J. (2010). Modeling the kinetics of corrosion in concrete patch repairs and identification of governing parameters. *Journal of Cement and Concrete Composites*, 32(5): 360-368.
37. Majeed M., Abd El Halim, A.O., Isgor O.B., Contestable E. (2010). Utilization of different grid types to strengthening reinforced concrete panels subjected to impact loading. *Transportation Research Record* 2164: 19-25.
38. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., and Foo, S. (2010). Shear Strength of Steel Reinforced Recycled Concrete Beams with Stirrups. *Magazine of Concrete Research*, 62(10): 685 –699.
39. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2010). A novel method for proportioning structural concrete mixes made with recycled concrete aggregate. *ACI Concrete International* (March 2010), 32(3): 37-43.
40. Pour-Ghaz, M., Isgor, O.B., Ghods, P. (2009). Quantitative interpretation of half-cell potential measurements in concrete structures. *ASCE Materials Journal*, 21(9): 467-475.
41. Pour-Ghaz, M., Isgor, O.B., Ghods, P. (2009). The effect of temperature on the corrosion of steel in concrete. Part 1: Virtual polarization resistance tests and model development. *Corrosion Science*, 51(2): 415-425.
42. Pour-Ghaz, M., Isgor, O.B., Ghods, P. (2009). The effect of temperature on the corrosion of steel in concrete. Part 2: Model verification and parametric study. *Corrosion Science*, 51(2): 426-433.
43. Soleimani, S., Van Geel, P.J., Isgor, O.B., Mostafa, M. (2009). Modelling of biological clogging in unsaturated porous media. *Contaminant Hydrology*, 106: 39-50.
44. Elshafey, M.M., Contestabile, E., Abd El Halim, A.O., Isgor, O.B. (2009). Numerical and experimental investigations for safer transportation of dangerous goods. *Journal of Transportation Security*, 2: 13-27.

45. Ghods, P., Isgor, O.B., McRae, G., Miller, T. (2009). The effect of concrete pore solution composition on the quality of passive oxide films on black steel reinforcement. *Cement and Concrete Composites*, 31(1): 2-11.
46. Elshafey, M.M., Contestabile, E., Abd El Halim, A.O., Isgor, O.B. (2009). Improving the safety of transportation of dangerous Goods: An Experimental Study. *Transportation Research Record* 2097: 117-124.
47. (Invited) Abbas, A., Fathifazl, G., Isgor, O.B., Razaqpur, A.G., Fournier, B., Foo, S. (2009). Durability of recycled aggregate concrete designed with equivalent mortar volume (EMV) method. *Cement and Concrete Composites*, 31: 555 - 563.
48. Abbas, A., Fathifazl, G., Fournier, B., Isgor, O.B., Zavadil, R., Razaqpur, A.G., Foo, S. (2009). Quantification of the residual mortar content in recycled concrete aggregates by image analysis. *Materials Characterization*, 60(7): 716-728.
49. Fathifazl, G., Abbas, A., Razaqpur, A.G., Isgor, O.B., Fournier, B., Foo, S. (2009). New mixture proportioning method for concrete made with coarse recycled concrete aggregate. *ASCE Materials Journal*, 21(10), 601-611.
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51. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2009). Flexural performance of steel reinforced recycled concrete (RRC) beams. *ACI Structural Journal*, 106(6): 858-867.
52. Abbas, A., Fathifazl, G., Isgor, O.B., Razaqpur, A.G., Fournier, B., Foo, S. (2008). Proposed method for determining the residual mortar content of recycled concrete aggregates. *Journal of ASTM International*, 5(1), 12 pp.
53. Ghods, P., Isgor, O.B., Pour-Ghaz, M. (2008). Experimental verification and application of a practical corrosion model for uniformly depassivated reinforcing bars in concrete. *Materials and Structures*, 41(7): 1211 - 1223.
54. Craft, S.T., Isgor, O.B., Hadjisophocleous, G., Mehaffey, J. (2008). Modelling the thermal response of gypsum board subjected to constant heat flux. *Journal of Fire and Materials*, 32(6): 333-355.
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56. Ge, J., Isgor, O.B. (2007). Effects of Tafel slope, exchange current density and electrode potential on the corrosion of steel in concrete. *Materials and Corrosion*, 58(8): 573-582.
57. Ghods, P., Isgor, O.B., Pour-Ghaz, M. (2007). A practical method for calculating the corrosion rate of uniformly depassivated reinforcing bars in concrete. *Materials & Corrosion*, 58 (4): 265-272.

58. Isgor, O.B., Razaqpur, A.G. (2007). Advance modelling of concrete deterioration due to reinforcement corrosion. *Canadian Journal of Civil Engineering*, 33 (6): 707-718.
59. Isgor, O.B., Razaqpur, A.G. (2006). Modelling reinforcement corrosion in concrete structures. *Materials and Structures*, 39 (3): 259-265.
60. Razaqpur, A.G., Isgor, O.B. (2006). Proposed shear design method for FRP reinforced concrete members without stirrups. *ACI Structural Journal*, 103 (1): 93-102.
61. Razaqpur, A.G., Isgor, O.B. (2004). Concrete contribution to the shear resistance of FRP reinforced concrete members. *ASCE Composites in Construction Journal*, September/October: 452-460.
62. Isgor, O.B., Razaqpur, A.G. (2004). Finite element modelling of coupled heat transfer, moisture transport and carbonation processes in concrete structures. *Cement and Concrete Composites*, 26: 57-73.
63. Razaqpur, A.G., Isgor, O.B. (2003). A rational method for calculating deflection of continuous FRP reinforced concrete beams. American Concrete Institute, ACI Special Publication, SP 210: 191-208.

### **C1.3. Peer-Reviewed Archival Conference Publications**

The following papers appeared in archival proceedings that were distributed to libraries (the next section covers other types of proceedings).

1. Ghods, P., Isgor, O.B., Gunay, H.B. (2015) Nano-scale investigation of interactions of chlorides with oxides that form on carbon steel in concrete pore solutions, *Nanotechnology in Construction*, Proceedings of NICOM 5, Sobolev, Konstantin, Shah, Surendra P. (Eds.), Springer International Publishing, Switzerland, 479-484.
2. Bonany, J. E., Van Geel, P.J., Gunay, H.B., Isgor O.B. (2012) Heat budget for the Sainte-Sophie anaerobic bioreactor landfill, Quebec, Canada. *Air and Waste Management Association Conference June 19-22, 2012, San Antonio, Texas, USA*, 1247-1261.
3. Marinier, P., Isgor, O.B. (2011). Model-assisted corrosion detection in concrete structures. *NDTMS-2011 International Symposium on Nondestructive Testing of Materials and Structures*, May 15-18, 2011, Istanbul, Turkey, 719-724.
4. Ghods, P., Isgor, O.B., Li, J., Carpenter, G., McRae, G., Gu, G. (2010). Nano-scale TEM studies of the passive film and the chloride-induced depassivation of carbon steel in concrete. *Nanotech 2010*, June 21 – 24, 2010, Vol 1, *Nanoscale Materials Characterization*, Anaheim, CA, USA: 49-52.
5. (Invited paper) Razaqpur, A.G., Fathifazl, G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2010). How to produce high quality concrete mixes with recycled concrete aggregate (RCA). *International RILEM Conference Proceedings: 2<sup>nd</sup> International Conference on Waste Engineering and Management - ICWEM 2010*, pp.13 – 15.

6. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2010). Evaluation of flexural and shear performance of reinforced concrete beams made with recycled concrete aggregates. Second International Conference on Sustainable Construction Materials and Technologies, 28 – 30 June 2010, Ancona, Italy.
7. Ghods, P., Isgor, O. B., McRae, G., Gu, G. P., Li, J. (2009). Effect of surface condition on the chloride-induced depassivation of rebar in concrete. 12th International Conference on Fracture (ICF), July 12-17, 2009, Ottawa, Canada, 3936-3943.
8. Ghods, P., Soleimani, S., Isgor, O.B., Zhang, J. (2009). Numerical investigation of the effect of patch repair on the corrosion of rebar in concrete, 4th International Conference on Construction Materials (CONMAT'09), August 24 -26, 2009, Nagoya, Japan.
9. Razaqpur, A.G., Fathifazl, G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2009). Effect of Mixture Proportioning Method on Creep and Shrinkage of RCA Concrete. 4th International Conference on Construction Materials: Performance, Innovations and Structural Implications (CanMat '09). 24-26 August 2009, Nagoya, Japan.
10. (Invited paper) Razaqpur, A.G., Isgor, O.B., Esfandiari, A. (2008). Nonlinear finite element analysis of strength and durability of reinforced concrete and composite structures. 8th International Congress on Advances in Civil Engineering, 15-17 September 2008, Eastern Mediterranean University, Famagusta, North Cyprus.
11. (Invited paper) Razaqpur, A.G., Isgor, O.B. (2008). Practical considerations in corrosion monitoring of reinforced concrete structures. Proceedings of the Workshop on Frontier Technologies for Infrastructures Engineering, 23-25 October 2008, Taipei, Taiwan.
12. Isgor, O.B., Pour-Ghaz, M., Ghods, P. (2008). Numerical study of steel corrosion in concrete shell members. (2008). 6th International Conference on Computation of Shell and Spatial Structures - IASS-IACM 2008: Spanning Nano to Mega, Alexander Scordelis Memorial Session: Thin Shell Concrete Structures, 28-31 May 2008, Cornell University, Ithaca, NY, USA, 1-4.
13. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2008). Flexural performance of reinforced recycled concrete beams. 2nd Canadian Conference on Effective Design of Structures, 20–23 May 2008, McMaster University, Hamilton ON, Canada.
14. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2008). Fresh and hardened properties of recycled aggregate concrete proportioned by the equivalent mortar volume (EMV) method. 2nd Canadian Conference on Effective Design of Structures, 20–23 May 2008, McMaster University, Hamilton ON, Canada.
15. Pour-Ghaz, M., Ghods, P., Isgor, O.B. (2007). A novel approach for predicting the corrosion rate of steel in concrete. RILEM Workshop on Integral Service Life Prediction of Concrete Structures, Portugal: 351-358.
16. Ghods, P., Miller, T., Isgor, O.B., McRae, G. (2007). The effect of synthetic pore solution on depassivation of steel. RILEM Workshop on Integral Service Life Prediction of Concrete Structures, Portugal: 387-393.

17. Soleimani, S., Van Geel, P.J., Isgor, O.B. (2007). Parametric study on the development of biological clogging in unsaturated soils. 60<sup>th</sup> Canadian Geotechnical Engineering Conference, Paper # 401, Ottawa, Ontario, Canada: 1101 - 1107.
18. Abbas, A., Fathifazl, G., Isgor, O.B., Razaqpur, A.G., Fournier, B., Foo, S. (2007). Qualification of recycled concrete aggregates for use in structural-grade concrete. 2007 International on Conference on Sustainable Construction Materials and Technologies, Coventry, U.K.
19. Fathifazl, G., Abbas, A., Razaqpur, A.G., Isgor, O.B., Fournier, B., Foo, S. (2007). Proposed mix design procedure for recycled aggregate concrete. 2007 International on Conference on Sustainable Construction Materials and Technologies, Coventry, U.K.
20. Abbas, A., Fournier, B., Isgor, O.B., Razaqpur, A.G., Fathifazl, G., Foo, S. (2007). Quantification of the residual mortar content in recycled concrete aggregates by image analysis. 11<sup>th</sup> Euroseminar on Microscopy Applied to Building Materials, EMABM 2007, Portugal, 716-728.
21. Ghods, P., Pour-Ghaz, M., Isgor, O.B. (2007). Practical modeling of uniform steel corrosion in concrete. 12<sup>th</sup> International Congress on the Chemistry of Cement, ICCM 2007, Montreal QC, Canada.
22. Pour-Ghaz, M., Ghods, P., Isgor, O.B. (2007). Virtual experiments to investigate steel corrosion in concrete. ASCE International Workshop on Computing in Civil Engineering, Pittsburg, PA, USA, ISBN: 9780784409374, 542-549.
23. Craft, S.T., Mehaffey, J., Hadjisophocleous, G., Isgor, O.B. (2007). Modelling the heat and mass transfer in light-frame wood floor assemblies exposed to fire. Proceedings of the Interflam 2007, 11th International Fire Science and Engineering Conference, 3-5 September 2007, London, UK.
24. Craft, S.T., Isgor, O.B., Hadjisophocleous, G., Mehaffey, J. (2007). Predicting the fire resistance of light-frame wood assemblies. Proceedings of the 11th International Conference Fire and Materials. San Francisco, USA.
25. Ge, J., Isgor, O.B. (2006). An improved numerical approach to model corrosion potential in reinforced concrete. 2<sup>nd</sup> RILEM Symposium on Advances in Concrete through Science and Engineering Conference, Quebec City QC, Canada.
26. Ge, J., Isgor, O.B. (2006). On the numerical solution of Laplace's Equation with nonlinear boundary conditions for corrosion of steel in concrete. 2006 ISCCBE Conference, Montreal QC, Canada.
27. Abbas, A., Fathifazl, G., Isgor, O.B., Razaqpur, A.G., Fournier, B., Foo, S. (2006). Environmental benefits of green concrete. 2006 CCC: Climate Change Conference, Ottawa ON, Canada.
28. Craft, S.T., Hadjisophocleous, G., Isgor, O.B., Mahaffey, J. (2006). Predicting the fire resistance of light-frame wood floor assemblies. 4th International Workshop on Structures in Fire, Aveiro, Portugal: 936-950.

29. Razaqpur, A.G., Isgor, O.B. (2005). General shear design method for FRP reinforced concrete members. Proceedings of CCC 2005, Third International Conference on Composites in Construction, France.
30. Isgor, O.B., Razaqpur, A.G. (2005). Verification and applications of a comprehensive model for predicting steel corrosion in concrete structures. Proceedings of CONMAT 2005, Third International Conference on Construction Materials, Vancouver BC, Canada.
31. Razaqpur, A.G., Halim, A.O.A., Isgor, O.B., Chen, J., Contestabile, E. (2005). Strength and deformation of adhesively bonded anchors in concrete. Proceedings of CONMAT 2005, Third International Conference on Construction Materials, Vancouver BC, Canada.
32. Isgor, O.B., Razaqpur, A.G. (2002). A holistic approach to durability of concrete. Special Publication – Taiwan-Canada Workshop for Bridges, Taipei, Taiwan, 248-255.
33. Isgor, O.B., Razaqpur, A.G. (2002). A finite element model for predicting reinforcement corrosion in concrete structures. Proceedings of the Ninth International Conference on Computing in Civil and Building Engineering, Taipei, Taiwan, 707-803.
34. Razaqpur, A.G., Isgor, O.B., Cheung, M.S. and Wiseman, A. (2001). Background to the shear design provisions of the proposed Canadian standard for FRP reinforced concrete structures. Proceedings of CCC 2001 – International Conference on Composites in Construction, Porto, Portugal, 403-408.

#### **C1.4. Other Peer-Reviewed Publications**

The following papers appeared in proceedings that were distributed primarily to attendees (as CDs, printed volumes, availability through a public website, etc.).

1. Williamson, J., Isgor, O.B. (2015). Electronic properties of passive films on carbon steel rebar in highly alkaline environments. The 227<sup>th</sup> Electrochemical Society Spring Meeting, May 24-28, 2015, Chicago, Illinois, USA.
2. Morales, M., Isgor O.B., Ghods, P., Salehi, M. (2014). Experimental and numerical investigation of the influence of cracks on electrical resistivity measurements using four-point Wenner probe. In Sustainable and Resilient Systems. 2014 EMI Conference, August 5-8, 2014, Hamilton, Ontario, Canada.
3. Jafari, Azad V., Li C., Rodriguez, D., Ideker, J., Isgor, O.B., Verba, C. (2014). Numerical investigation of class H cement deterioration under CO<sub>2</sub>- O<sub>2</sub> co-exposure in down-well conditions, 2014 AGU Fall Meeting, December 14-19, 2014, San Francisco, USA.
4. Li, C., Jafari Azad, V., Rodriguez, D.E., Ideker, J.H., Isgor, O.B., Verba, C. (2014) Class H cement degradation under CO<sub>2</sub> and CO<sub>2</sub>-O<sub>2</sub> sequestration conditions, 2014 AGU Fall Meeting, December 14-19, 2014, San Francisco, USA.
5. Jafari, Azad V., Li, C., Rodriguez D., Ideker J., Isgor, O.B., Verba, C. (2014). Numerical investigation of class H cement deterioration in high temperature and pressure, 5th Advances in Cement-based Materials: Characterization, Processing, Modeling and Sensing, July 9-11, 2014, Tennessee, USA.

6. Li, C., Jafari Azad, V., Rodriguez, D.E., Ideker, J.H., Isgor, O.B., Verba, C. (2014) Experimental and thermodynamic modeling approach to elucidating damage mechanisms in cement-well casting-host rock settings for underground storage of CO<sub>2</sub>, 5th Advances in Cement-based Materials: Characterization, Processing, Modeling and Sensing, Jul 9 - 11, 2014, Cookeville, Tennessee, USA.
7. Williamson, J., Isgor, O.B. (2014). Electronic properties of passive films on carbon steel rebar in simulated concrete pore solutions. National Association of Corrosion Engineers Western Area Conference, November 5-7, 2014, Seattle, Washington, USA.
8. Chabi, P., Isgor, O.B., Martin-Perez, B., Ghods, P. (2013). Effectiveness of half-cell potential mapping in corrosion assessment of reinforcement in loaded concrete bridge decks. 3rd International Specialty Conference on Engineering Mechanics and Materials, May 29 – June 1, 2013, Montreal, Quebec, Canada.
9. Isgor, O.B., Ghods, P. (2013). Modeling chemical compositional changes in concrete pore solution within microenvironments adjacent to steel reinforcement. 4th Advances in Cement-based Materials, July 8-10, 2013, Urbana, IL, USA.
10. Isgor, O.B., Ghods, P. (2013). Microscopic investigation of the chloride-induced depassivation of carbon steel in concrete. Microscopical Society of Canada Annual Meeting, June 19-21, 2013, Victoria, BC, Canada.
11. Isgor, O.B., Gunay, H.B., Papavinasam, S. (2012). An EQCN study on the effect of contact time on the persistency of batch corrosion inhibitors in brine. NACE Northern Area Eastern Conference, October 28-31, 2012, Toronto, Ontario, Canada.
12. Gunay, H.B., Isgor, O.B. (2012). Investigation of passivity of iron and carbon steel in simulated concrete pore solutions. 221st ECS Meeting, May 6-10 2012, Seattle, WA, USA.
13. Gunay, H.B., Isgor O.B., Razaqpur, A.G., Simon Foo. (2011) Improving the energy efficiency of buildings with hollow core slabs: A numerical investigation. 2nd International Specialty Conference on Engineering Mechanics and Materials, June 14-17, 2011, Ottawa, Ontario, Canada.
14. Papavinasam, S., Krausher, J.a , Ghods, P., Isgor, O.B. (2011). Evaluation of compatibility between thermal insulator, external coating, and cathodic protection at 150°C. Corrosion 2011, March 13-17, 2011, Houston, TX, USA.
15. Isgor, O.B., Gunay, H.B., Papavinasam, S. (2011). An EQCN study of corrosion inhibitor persistency. NACE Northern Area Eastern Conference, August 15-17, 2011, Ottawa, Ontario, Canada.
16. Ghods, P., Isgor, O.B., McRae, G. (2010). Electrochemical studies on the corrosion initiation of black steel rebar in concrete. 2010 CSCE Annual Conference, Winnipeg, MA, Canada.
17. Soleimani, S., Ormechi, B., Isgor, O.B., Papavinasam, S. (2010). Evaluation of biofilm performance as a protective barrier against biocorrosion using an enzyme electrode. International Water Association Conference, September 22-26, 2010, Montreal, QC, Canada.

18. Soleimani, S., Ormeci, B., Isgor, O.B., Papavinasam, S. (2010). Evaluation of biofilm as a protective barrier for the inhibition of microbially influenced deterioration in treatment structures and sewer pipelines. CSCE 11th Environmental Specialty Conference, June 9-12, 2010, Winnipeg, MA, Canada.
19. Ghods P., Pour-Ghaz M., Isgor O. B. (2009). A new modeling approach for corrosion monitoring of reinforced concrete structures. CSCE 1st International / 1st Engineering Mechanics and Materials Specialty Conference, May 27-30, 2009, St. John's, NL, Canada.
20. Razaqpur, A.G., Isgor, O.B. (2009). Investigation of the corrosion problems experienced in a housing complex. CSCE 1st International / 1st Engineering Mechanics and Materials Specialty Conference, May 27-30, 2009, St. John's, NL, Canada.
21. Ghods, P., Karadakis, K., Isgor, O. B., McRae, G. (2009). Modeling the effect of mill scale on the local depassivation of steel rebar in concrete. NACE 2009 Research in Progress Symposium, March 22-26, 2009, Atlanta, U.S.A.
22. Elshafey, M.M., Contestabile, E., Abd El Halim, A.O., Isgor, O.B. (2009). Improving the safety of transportation of dangerous goods: part 1 - experimental study. 2009 TRB Annual Meeting, Paper no. 09-2830.
23. Elshafey, M.M., Isgor, O.B., Contestabile, E., Abd El Halim, A.O. (2009). Improving the safety of transportation of dangerous goods: part 2 - numerical study. 2009 TRB Annual Meeting, Paper no. 09-3094.
24. Ghods, P., Isgor, O. B., McRae G. (2008). Investigation of the passive film characteristics of steel in concrete using electrochemical tests, NACE 2008 Research in Progress Symposium, March 16-20, 2008, New Orleans, U.S.A.
25. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2008). A Rational Approach to the Design and Production of High Quality Concrete Mixes Made with Recycled Concrete Aggregates. International Conference on Waste Engineering and Management, 28 – 30 May 2008, Hong Kong.
26. Abbas, A., Fathifazl, G., Isgor, O.B., Razaqpur, A.G., Fournier, B., Foo, S. (2008). Durability of recycled aggregate concrete designed with equivalent mortar volume (EMV) method. 2nd Canadian Conference on Effective Design of Structures, 20–23 May 2008, McMaster University, Hamilton ON, Canada.
27. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., Foo, S. (2008). The key to the design and production of high quality structural-grade recycled aggregate concrete. 2008 Concrete Technology Forum: Focus on Sustainable Development, 20-22 May 2008, Denver, CO, USA.
28. Lu, L., Isgor, O.B., Hadjisophocleous, G. (2008). A numerical study of the modulus of elasticity for wood floor joists in fire. 2008 CSCE Annual Conference, Quebec City QC, Canada.

29. Pour-Ghaz, M., Ghods, P., Isgor, O.B. (2007). Investigation of steel corrosion in concrete structures through virtual polarization resistance tests. 2007 NACE Northern Area Eastern Conference, Paper # 32, Ottawa, Ontario, Canada.
30. Ghods, P., Isgor, O.B., McRae, G., Miller, T. (2007). The passivation of steel rebar in concrete pore solutions. 2007 NACE Northern Area Eastern Conference, Paper # 33, Ottawa, Ontario, Canada.
31. Abbas, A., Isgor, O.B., Razaqpur, A.G., Fournier, B., Gholamreza, F., Foo, S. (2007). Durability of green concrete. 2007 CSCE Annual Conference, Yellowknife NWT, Canada.
32. Abbas, A., Isgor, O.B., Razaqpur, A.G., Fournier, B., Fathifazl, G., Foo, S. (2006). Proposed method for determining the residual mortar content of recycled concrete aggregates. 2006 CSCE Structural Specialty Conference, Calgary AB, Canada.
33. Isgor, O.B., Razaqpur, A.G. (2006). Modelling corrosion-induced concrete deterioration. 2006 CEIS Conference, Lebanon, Beirut.
34. Mostafa, A., Isgor, O.B., Halim, A.O.A., Goodman, S., Lane, B. (2006). Curing of cold-in-place asphalt mixtures – Toward a standard test method. 51<sup>st</sup> CTAA Conference, Charlottetown PEI, Canada.
35. Isgor, O.B., Razaqpur, A.G. (2005). Modelling the effects of variations in ph on the free chloride concentration in concrete. Proceedings of CEDS 2005, 1st Canadian Conference on Effective Design of Structures, Hamilton ON, Canada.
36. Razaqpur, A.G., Isgor, O.B. (2004). Shear resistance of FRP reinforced concrete members. Proceedings of ACMBS IV, 4<sup>th</sup> International Conference on Composite Materials in Buildings and Structures, Calgary AB Canada.
37. Razaqpur, A.G., Isgor, O.B. (2000). Methods for calculating deflection of FRP reinforced concrete structures. Proceedings of ACMBS III, Third International Conference on Composite Materials in Buildings and Structures, Ottawa ON, Canada: 371-378.
38. Isgor, O.B., Razaqpur, A.G. (2004). Quantitative determination of the effect of temperature and moisture on the rate of carbonation in concrete. CSCE 2004 Annual Conference, Saskatoon SK, Canada.
39. Razaqpur, A.G., Isgor, O.B. (2003). Finite element modeling of reinforcement corrosion in concrete structures. ICCE2003 6<sup>th</sup> International Conference on Civil Engineering, Isfahan, Iran: 35-42.
40. Isgor, O.B., Razaqpur, A.G. (2002). Predicting initiation and propagation of corrosion in reinforced concrete structures. CSCE 2002 Annual Conference, Montreal QC, Canada.
41. Isgor, O.B., Razaqpur, A.G. (2001). A finite element model for predicting durability of reinforced concrete infrastructure. CSCE 2001 Annual Conference, Victoria BC, Canada.
42. Razaqpur, A.G., Isgor, O.B. (2000). The j-factor versus the safety factor applied to design of reinforced concrete members. CSCE 2000 Annual Conference, London ON, Canada: 44-48.

### **C1.5. Papers Currently under Peer Review**

1. Williamson, J., Isgor, O.B. (in review). Investigation of Mott-Schottky analysis parameters to study the electronic properties of passive films of carbon steel in highly alkaline environments, ASTM Journal of Advances in Civil Engineering Materials.
2. Williamson, J., Isgor, O.B. (in review). The effect of concrete pore solution composition and chlorides on the electronic properties of passive films on carbon steel rebar, Corrosion Science.
3. Azad, V.J., Li, C., Verba, C., Ideker, J.H., Isgor, O.B. (in review). A COMSOL-GEMS PSI Interface for modeling of coupled reactive-transport geochemical processes, Computers and Geosciences.
4. Karadakis, K., Azad, V.J., Ghods, P., Isgor, O.B. (in review). Numerical investigation of the role of carbon steel rebar mill scale on the chloride-induced corrosion initiation in concrete, Corrosion Science.
5. Azad, V.J., Li, C., Verba, C., Ideker, J.H., Isgor, O.B. (in prep). Modeling degradation of Class H cement wellbore plugs under CO<sub>2</sub>-O<sub>2</sub> (co)sequestration conditions, Cement and Concrete Research.
6. Gunay, H.B., Isgor, O.B., Razaqpur, A.G., Foo, S. (in prep). Enhancing the thermal mass use of concrete slabs with the hollow core slab active floor systems. Construction and Building Materials.

### **C1.6. Other Publications**

1. Fathifazl, G., Razaqpur, A.G., Isgor, O.B., Abbas, A., Fournier, B., and Foo, S. (2010). A reply to the discussion by D.K. Sahoo, B. Singh, and P. Bhargava of the paper "Shear Strength of Steel Reinforced Recycled Concrete Beams without Stirrups." Magazine of Concrete Research: 62(11), pp. 853-856.
2. Isgor, O.B., Razaqpur, A.G., Foo, S. (2011). Decreasing environmental impact of buildings through innovative technologies. CSCE Canadian Civil Engineering Magazine, 28.4, 14-17.
3. Soleimani, S., Ormeci, B., Isgor, O.B., Papavinasam, S. (2010). Evaluation of biofilm as a protective barrier for the inhibition of microbially influenced deterioration in treatment structures and sewer pipelines. CSCE Canadian Civil Engineering Magazine, 27.2, 8-10.
4. Isgor, O.B., Pour-Ghaz, M., Ghods, P. (2009) Corrosion rate prediction using virtual experiments. CSCE Canadian Civil Engineer, 26.1 (Spring): 16-19.
5. Fathifazl, G., Abbas, A., Razaqpur, A.G., Isgor, O.B., Fournier, B., Foo, S. (2008). Recycled aggregate concrete as a structural material. CSCE Canadian Civil Engineer, 24.5: 20-23.
6. Razaqpur, A.G., Svecova, D., Isgor, O.B. (2004). Design of Reinforced and Prestressed Concrete Structures by Internal FRP Reinforcement. CSCE Canadian Civil Engineer: 14-17.

## **C2. Professional Meetings, Symposia, and Conferences**

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### **C2.1. Presentations to Professional Groups** (includes presentations of papers cited in C1.3)

(\* indicates presenter when there are multiple authors)

1. Invited talk, Isgor, O.B. (2016). New approaches of corrosion detection in reinforced concrete elements. TRB Workshop TRB Workshop on Sensors in Highway Concrete, Washington DC, January 10, 2015.
2. Invited talk, Isgor, O.B. (2015). Effect of rebar surface condition on corrosion initiation in concrete structures. RILEM TC SCI Committee meeting, Zurich, Switzerland, November 26, 2015.
3. Invited talk, Trejo, D. and Isgor, O.B. (2015). Progress and challenges in non-destructive testing of reinforcement corrosion in concrete structures. ASNT Lewis & Clark Section, October 13, 2015.
4. Invited talk, Trejo, D. and Isgor, O.B. (2014). Modeling needs for estimating the remaining service life of reinforced concrete bridges: current practice and future trends. Weyers Honorary Session, 2014 ACI Fall Conference, Washington, DC., USA, October 26-30, 2014.
5. Adams, M.P., Fu, T., Ideker\*, J.H., Isgor, O.B. (2014). Durability of concrete containing recycled concrete aggregates. EPFL LMC Seminar, Leysin, Switzerland, January 21-24, 2014.
6. Li, C.\*, Jafari, Azad V., Rodriguez, D., Ideker, J., Isgor, O.B., Verba, C. (2014), Experimental and Thermodynamic Modeling Approach to Elucidating Damage Mechanisms in Cement-Well Casting-Host Rock Settings for Underground Storage of CO<sub>2</sub>, ACI Fall Convention, Washington DC, USA, October 26-30, 2014.
7. Morales, M.\*, Isgor O.B., Ghods, P., Salehi, M. (2014). Experimental and numerical investigation of the influence of cracks and corrosion on electrical resistivity measurements using a four-point Wenner probe. In Research in Progress. 2014 ACI Fall Conference, Washington, DC., USA, October 26-30, 2014.
8. Jafari, Azad V.\*, Li C., Rodriguez, D., Ideker, J., Isgor, O.B., Verba, C. (2014). Numerical investigation of class H cement deterioration under CO<sub>2</sub>- O<sub>2</sub> co-exposure in down-well conditions, 2014 AGU Fall Meeting, San Francisco, USA, December 14-19, 2014.
9. Jafari, Azad V.\*, Li, C., Rodriguez D., Ideker J., Isgor, O.B., Verba, C. (2014). Numerical investigation of class H cement deterioration in high temperature and pressure, 5th Advances in Cement-based Materials: Characterization, Processing, Modeling and Sensing, Tennessee, USA, July 9-11, 2014.
10. Li, C.\*, Jafari Azad, V., Rodriguez, D.E., Ideker, J.H., Isgor, O.B., Verba, C. (2014) Experimental and thermodynamic modeling approach to elucidating damage mechanisms in cement-well casting-host rock settings for underground storage of CO<sub>2</sub>, 5th Advances in Cement-based Materials: Characterization, Processing, Modeling and Sensing, Cookeville, Tennessee, USA, Jul 9 - 11, 2014.

11. Li, C.\*, Jafari Azad, V., Rodriguez, D.E., Ideker, J.H., Isgor, O.B., Verba, C. (2014) Class H cement degradation under CO<sub>2</sub> and CO<sub>2</sub>-O<sub>2</sub> sequestration conditions, 2014 AGU Fall Meeting, Dec 15 - 19, 2014, San Francisco, California, USA
12. Invited talk, Ghods, P.\* and Isgor, O.B. (2014). A critical look at advanced nano-to-macro scale characterization techniques to study passivity and corrosion of steel in concrete, in Special Session to honor Jim Beaudoin. 2014 ACI Fall Convention, Washington, DC. (Video-taped, March 18, 2012).
13. Invited talk, Isgor O.B. (2014). Experimental and numerical investigation of the influence of cracks on electrical resistivity measurements of reinforced concrete slabs using four-point Wenner probe. 2014 Corvallis Workshops, Corvallis, OR, USA, July 15-18, 2014.
14. Williamson, J.\*, Isgor, O.B. (2014). Electronic properties of passive films on carbon steel rebar in simulated concrete pore solutions. National Association of Corrosion Engineers Western Area Conference, Seattle, Washington, USA, November 5-7, 2014.
15. Salehi, M., Isgor O.B.\*, Ghods, P. (2013). Numerical investigation of the influence of concrete cracks on electrical resistivity measurements using four-point Wenner probe. In Electrical Methods For Characterization And Monitoring Of Concrete. 2013 ACI Fall Convention, Phoenix, AZ., USA, October 19-24, 2013.
16. Isgor O.B.\* , Chabi, P., Martin-Perez, B., Ghods, P. (2013). Comparative investigation of corrosion measurement techniques in the assessment of loaded concrete bridge decks in controlled laboratory conditions. In Laboratory Test Methods for Corrosion Assessment: Technical Review and Practical Implications. 2013 ACI Fall Convention, Phoenix, AZ, USA, October 19-24, 2013.
17. Adams, M.P.\*, Fu, T., Ideker, J.H., Isgor, O.B. (2013). Cracking susceptibility of concrete made with recycled concrete aggregate. In Recycled Materials in Concrete Phoenix Session, 2013 ACI Fall Convention, Phoenix, AZ, USA, October 19-24, 2013.
18. Isgor O.B. (2012). Investigation of Passivity of Iron and Carbon Steel in Simulated Concrete Pore Solutions, Materials Science Seminar Series, Oregon State University, Corvallis, OR, USA.
19. Gunay, H.B.\*, Isgor, O.B., Razaqpur, A.G., Foo, S. (2012) Enhancing thermal mass utilization of buildings with hollow core slab active floor systems. In Open Paper Session, 2012 ACI Fall Convention, Toronto, ON, Canada. (presented on October 23, 2012)
20. Invited Talk, Isgor O.B. (2012). Effect of concrete cracking on steel corrosion, in ACI 123 Forum: “What cracking levels can you tolerate in your concrete and what can you do about it in practice?” 2012 ACI Spring Convention, Dallas, TX. (Video-taped, March 18, 2012).
21. Isgor O.B. (2012). Numerical Study of Pore Solution Chemistry in Surface Crevices of Carbon Steel Reinforcing Bar. In Hope and Schupack Symposium, Organized by ACI 222, 2012 ACI Spring Convention, Dallas, TX.

22. Isgor O.B. (2012). Inverse Model Assisted Monitoring of Corrosion in Reinforced Concrete Members. In Hope and Schupack Symposium, Organized by ACI 222, 2012 ACI Spring Convention, Dallas, TX.
23. Invited talk, Isgor O.B. (2012). Multi-Scale and Multi-Technique Investigation of the Passivity of Carbon Steel in Concrete. University of Waterloo – Department of Civil Engineering, Waterloo, Ontario, Canada.
24. Invited talk, Isgor O.B. (2012). Multi-Scale and Multi-Technique Investigation of the Passivity of Carbon Steel in Concrete. University of Victoria – Department of Mechanical Engineering, Victoria, BC, Canada.
25. Marinier, P., Isgor, O.B.\* (2011). Model-assisted corrosion detection in concrete structures. NDTMS-2011 International Symposium on Nondestructive Testing of Materials and Structures, Istanbul, Turkey, May 15-18, 2011.
26. Invited talk, Isgor O.B. (2011). Multi-Scale and Multi-Technique Investigation of the Passivity of Carbon Steel in Concrete. ASM Ottawa Valley Chapter Meeting, Ottawa, Ontario Canada, September 21, 2011.
27. Isgor O.B. (2010). Nano-Scale imaging studies on the passivity and depassivation of carbon steel rebar. In Concrete, in Corrosion Resistant Reinforcement-Current Performance and Alternative Materials, organized by ACI 222, 2010 ACI Fall Convention, Pittsburg, PA. (Video-taped, October 26, 2010)
28. Invited talk (Morris Cohen Award address), Ghods, P., Isgor O.B.\* (2010). Multiscale investigation of passivity of carbon steel rebar in concrete. 218th Electrochemical Society Meeting, Las Vegas, Nevada, USA, October 10-15, 2010
29. Invited talk, Isgor O.B. (2010). Corrosion mitigation for concrete structures. PWGSC National Structural Engineering Meeting/Workshop, , Gatineau, QC, Canada, June 17-18, 2010
30. Invited talk, Isgor O.B. (2009). Detection and measurement of corrosion in reinforced concrete structures. NACE National Capital Chapter Seminar Series, Ottawa, Ontario, Canada, November 20, 2009
31. Invited talk, Isgor O.B. (2008). From nano to macro: Investigation of steel passivity in concrete. Cornell University, Department of Civil and Environmental Engineering Seminar Series, Ithaca, NY, USA, September 23, 2008
32. Isgor O.B. (2008). A new look at the half-cell measurements of reinforced concrete members through corrosion modeling. In Service Life Prediction – Bridging the Gap between Modelling and Practice, organized by ACI 365, 2008 ACI Spring Convention, Los Angeles, CA, USA, April 2, 2008.
33. Invited talk, Razaqpur, A.G.\*, Isgor, O.B., Esfandiari, A. (2008). Nonlinear finite element analysis of strength and durability of reinforced concrete and composite structures. 8th International Congress on Advances in Civil Engineering, Eastern Mediterranean University, Famagusta, North Cyprus, 15-17 September 2008

34. Invited talk, Razaqpur, A.G.\* , Isgor, O.B. (2008). Practical considerations in corrosion monitoring of reinforced concrete structures. Proceedings of the Workshop on Frontier Technologies for Infrastructures Engineering, , Taipei, Taiwan, 23-25 October 2008
35. Isgor, O.B.\* , Pour-Ghaz, M., Ghods, P. (2008). Numerical study of steel corrosion in concrete shell members. (2008). 6th International Conference on Computation of Shell and Spatial Structures - IASS-IACM 2008: Spanning Nano to Mega, Alexander Scordelis Memorial Session: Thin Shell Concrete Structures, , Cornell University, Ithaca, NY, USA, 28-31 May 2008.
36. Isgor O.B. (2007). Modeling the effect of pH-altering processes on the free chloride concentration in concrete. In Advances in Service Life Models that Consider Multiple Sources of Deterioration, organized by ACI 365, 2007 ACI Spring Convention, Atlanta, GA. (Video-taped, April 24, 2007)
37. Pour-Ghaz, M., Ghods, P., Isgor, O.B.\* (2007). A novel approach for predicting the corrosion rate of steel in concrete. RILEM Workshop on Integral Service Life Prediction of Concrete Structures, Portugal.
38. Ghods, P., Miller, T., Isgor, O.B.\* , McRae, G. (2007). The effect of synthetic pore solution on depassivation of steel. RILEM Workshop on Integral Service Life Prediction of Concrete Structures, Portugal.
39. Pour-Ghaz, M.\*, Ghods, P., Isgor, O.B. (2007). Virtual experiments to investigate steel corrosion in concrete. ASCE International Workshop on Computing in Civil Engineering, Pittsburg, PA, USA.
40. Abbas, A., Fathifazl, G., Isgor, O.B.\* , Razaqpur, A.G., Fournier, B., Foo, S. (2006). Environmental benefits of green concrete. 2006 CCC: Climate Change Conference, Ottawa ON, Canada.
41. Craft, S.T.\*, Hadjisophocleous, G., Isgor, O.B., Mahaffey, J. (2006). Predicting the fire resistance of light-frame wood floor assemblies. 4th International Workshop on Structures in Fire, Aveiro, Portugal.
42. Invited talk, Isgor O.B. (2006). Performance and durability of materials in aggressive environments. Infrastructure 2006 - Metro Toronto Convention Centre, Toronto, Ontario, Canada, November 29, 2006.
43. Invited talk, Isgor O.B. (2004). Cement Association Canada's Concrete Design Handbook (3rd Edition) Seminar: Chapters 16 and 18, Sheraton Hotel, Ottawa, ON, Canada, April 24, 2006
44. Invited talk, Isgor, O.B., Razaqpur, A.G.\* (2002). A holistic approach to durability of concrete. Taiwan-Canada Workshop for Bridges, Taipei, Taiwan.

## **C2.2. Participation at Invitational Workshops**

1. Speaker, TRB Workshop TRB Workshop on Sensors in Highway Concrete, Washington DC, January 10, 2015.
2. Presenter, Webinar on ACI 222.2R-14: A Report on Corrosion of Prestressing Steels. Organized by ACI on December 16, 2014. (Attended by 350 participants worldwide)
3. Speaker on corrosion mitigation, Public Works and Government Services Canada (PWGSC) National Structural Engineering Meeting/Workshop, June 17-18, 2010, Gatineau, QC, Canada.
4. Speaker on Chapters 16 and 18, Cement Association Canada's Concrete Design Handbook (3rd Edition) Workshop, April 24, 2006, Sheraton Hotel, Ottawa, ON, Canada.

## **C3. Grant and Contract Support**

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Available upon request.

## **D. SERVICE**

### **D1. University Service**

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#### **D1.1. Standing Committees**

- OSU CCE Graduate Committee, AY12/13, AY13/14 (Secretary), AY14/15 (Chair), AY15/16
- OSU CCE Computation Committee, AY15/16
- OSU CCE Infrastructure Materials Group Coordinator, AY12/13, AY14/15, AY15/16
- OSU CCE Strategic Planning Committee Member, AY12/13
- CU CEE Tenure and Promotion Committee Member, 2010-2011
- CU CEE Curriculum Committee Member, 2007-2009, 2010
- CU Provost's Committee on University Teaching Achievement Awards, 2007, 2009
- CU CEE Laboratory Users and Space Committee Member, 2005-2009 (Chair from 2007-09)
- CU University Library Task Force Member, 2005-2009
- CU CEE Representative to the Library, 2005-2009
- CU University Taskforce Member for Aviation Security Research, 2005-2007
- CU CEE First Year Class Officer, 2004-2009
- CU CEE John Adjelian Lecture Organizing Committee Member, 2004-2007 (Chair in 2007)

#### **D1.2. Ad-hoc Committees**

- OSU CCE NDT Faculty Search Committee Chair, AY15/16
- OSU CCE Geomatics Faculty Search Committee Member, AY14/15
- OSU CCE Ad-hoc Tenure and Promotion Committee Chair, AY14/15
- OSU CCE Ad-hoc Laurel Block Grant Management Committee, AY14/15
- OSU CCE Infrastructure Materials Faculty Search Committee Chair, AY13/14
- OSU CCE Ad-hoc Tenure and Promotion Committee Member, AY12/13
- CU CEE Webpage Renewal Committee Member, 2006
- CU CEE Conservation Engineering Faculty Search Committee Member, 2010
- CU CEE Building Science Faculty Search Committee Member, 2010
- CU CEE Infrastructure Security Faculty Search Committee Member, 2009
- CU CEE Fire Safety Engineering Faculty Search Committee Member, 2008
- CU CEE Structural Engineering Faculty Search Committee Member, 2007
- CU CEE Fire Safety Engineering Faculty Search Committee Member, 2006
- CU CEE Environmental Engineering Faculty Search Committee Member, 2005

#### **D1.3. Program Development Committees**

- CU CEE Taskforce Member for B.Eng. in Arch. Conservation & Sustainability, 2008-2009
- CU CEE Taskforce Member for MS in Infrastructure Protection & Int. Security, 2006-2009
- CU CEE Advisory Committee Member on Fire Safety Eng. Graduate Program, 2005-2007

#### **D1.4. Other Leadership Activities**

- OSU CCE Faculty Mentor, AY13/14, AC14/15
- OSU CCE Laurel Block Grant Proposal Applicant (Funding secured: \$115,000), AY14/15
- OSU COE Humanitarian Engineering, Biosand filter workshop, November 14, 2014, organized the concrete mixing session, AY14/15

- CU CSCE Faculty Representative, 2006
- CU Ontario University Fair Delegation Member, 2004, 2005

## **D2. Service to the Profession**

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### **D2.1. Journal Editorships**

- Associate Editor for the ASCE Journal of Materials in Civil Engineering, 2014-present

### **D2.2. Conference and Workshop Organization**

- Organizing Committee Member, CSCE Annual Conference, 2011
- Organizing Committee Member, NACE Northern Area Eastern Conference, 2011
- Organizing Committee Member, 2nd CSCE International Conference on Engineering Mechanics and Materials, 2011
- Co-Chair, 1st CSCE International Conference on Engineering Mechanics and Materials, 2009
- Secretary, 9th Canadian Conference for Earthquake Engineering, 2007
- Organizing Committee Member, NACE Northern Area Eastern Conference, 2007
- Organizing Committee Member, 3rd Conference on Advanced Composite Materials in Bridges and Structures, 2000

### **D2.3. Conference Program Committees**

- Session Co-Organizer (on chloride limits), with D. Trejo and D. Tepke, ACI Fall Convention in Denver, 2015
- Session Organizer/Chair (on rebar corrosion in concrete), NACE Northern Area Eastern Conference, 2011
- Session Organizer/Chair (on rebar corrosion in concrete), NACE Northern Area Eastern Conference, 2007
- Technical Committee Member, 4th International Conference on Construction Materials, 2009
- Technical Committee Member, 5th Conference on Advanced Composite Materials in Bridges and Structures, 2008
- Technical Committee Member, 2nd Canadian Conf. on Effective Design of Structures, 2008
- Technical Committee Member, 9th Canadian Conference for Earthquake Engineering, 2007
- Technical Committee Member, 11th Joint International Conference on Computing and Decision Making in Civil Engineering, 2006

### **D2.4. Reviewing**

#### **Granting Agencies:**

- National Science Foundation (NSF)
- Natural Sciences and Engineering Research Council (NSERC)
- American Concrete Institute (ACI)
- Chilean National Science and Technology Commission
- Ontario Graduate Scholarship (OGS) Program
- Canadian Foundation for Innovation (CFI)

#### **Journals:**

- Corrosion Science
- Journal of Electrochemical Society

- Electrochimica Acta
- NACE Corrosion Journal
- Materials and Structures
- ACI Materials Journal
- Cement and Concrete Research
- Cement and Concrete Composites
- Construction and Building Materials
- Journal of Materials (Elsevier)
- Journal of ASTM International
- ASTM Journal of Testing and Evaluation
- ASCE Journal of Materials in Civil Engineering
- Canadian Journal of Civil Engineering
- Journal of Materials Engineering and Performance
- International Journal of Structural Engineering and Mechanics
- Journal of Nondestructive Evaluation
- ASTM Advances in Civil Engineering Materials.

**External Examiner (Promotion and Tenure):**

- University of Missouri-Kansas City (name and date withheld)
- University of Saskatchewan, SK, Canada (name and date withheld)

**External Examiner (PhD Examinations \*):**

- University of British Columbia, 2014 (name withheld)
- McGill University, 2014 (name withheld)
- University of Saskatchewan, SK, Canada, 2013 (name withheld)

**Conferences:**

- CSCE Annual General Conference, 2014
- CSCE Annual General Conference, 2013
- 3rd CSCE International Conference on Engineering Mechanics and Materials, 2013
- CSCE Annual General Conference, 2012
- 2nd CSCE International Conference on Engineering Mechanics and Materials, 2011
- CSCE Annual General Conference, 2011
- 2nd Canadian Conference on Effective Design of Structures, 2008
- 5th Conference on Advanced Composite Materials in Bridges & Structures, 2008
- 12th Int. Conference on Cement Chemistry, 2008
- 9th Canadian Conference for Earthquake Eng., 2007
- 11th Joint International Conference on Computing & Decision Making in Civil Eng., 2006
- 10th Int. Conference on Asphalt Pavements (2006
- 1st Canadian Conference on Effective Design of Structures, 2005
- 4th Conference on Advanced Composite Materials in Bridges & Structures, 2004

**D2.5. Other**

- Member, American Concrete Institute (ACI) Committee on Medals (Wason Medal Selection Committee), 2013-2014

- Evaluation Group Member, NSERC Discovery Grant Program (Ev. Group 1509), 2014-present (3 year appointment)
- Member, CSCE Horst Leipholtz Medal Selection Committee, 2014-present
- Site Visit Committee Member, NSERC, Industrial Research Chair (IRC) renewal application by the University Sherbrooke (Dr. B. Benmokrane), 2015.
- RILEM (TC SCI) Committee Member, Characteristics of the steel/concrete interface and their effect on initiation of chloride-induced reinforcement corrosion, 2015-present.
- RILEM (TC RAC) Committee Member, Structural behavior and innovation of recycled aggregate concrete, 2015-present.
- Secretary, American Concrete Institute (ACI) Committee 222 - Corrosion, 2012-present
- Co-author, ACI 222.2R-14: A Report on Corrosion of Prestressing Steels (published), 2014
- Member, ACI 222 Corrosion Committee 2003-present
- Member, ACI 365 Service Life Prediction Committee, 2003-present
- Member, ACI 236 Material Science Committee, 2003-present
- Member, CSCE Engineering Mechanics and Materials Division, 2003-present
- Member, CSCE Structures Division, 2003-present
- Member, CSCE IT and Innovation Committee, 2003-present
- Member, Electrochemical Society (ECS) Corrosion Committee, 2012-present
- Vice President (Technical), Canadian Society for Civil Engineering (CSCE), 2009-2011
- Acting Vice President (Programs), CSCE, 2009-2010
- Member, Board of Directors, CSCE, 2009, 2011
- Member, National Management Committee, CSCE, 2009-2011
- Member, Editorial Board of CSCE Canadian Civil Engineer Magazine, 2008-2011
- Chair, Career Development, NACE National Capital Chapter, 2007-2012
- Chair, CSCE Engineering Mechanics and Materials Division, 2006-2009
- Guest Editor, CSCE Civil Engineering Magazine - Issue 24.5: The developments in the use of recycled concrete in construction, December, 2007
- Guest Editor, CSCE Civil Engineering Magazine - Issue 23.5: Innovation in Civil Engineering (co-edited with Professor N.K. Srivastava), January, 2006
- Guest Editor, CSCE Civil Engineering Magazine - Issue 22.5: IT in Civil Engineering (co-edited with Professor N.K. Srivastava), December, 2005
- Guest Editor, CSCE Civil Engineering Magazine - Issue 21.2: Durability and Rehabilitation (co-edited with Dr. Daniel Cusson), May, 2004
- Editor, CSCE IT and Innovation Newsletter, 2004-2006