

## Contact Info:

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## **Biographical sketch:**

(Academic Degrees-Fellowships and Associations)

## *Academic degrees:*

- **November 2014: PhD,** Electrical and Computer Engineering, Concordia University, Montréal, Canada.

*Thesis topic:* “Design of Novel Variable Flux Permanent Magnet Machine for Electric Vehicles”

- **September 2011: MA.Sc,** Electrical and Computer Engineering, Concordia University, Montréal, Canada

*Thesis topic:* “Modeling of Core Losses in Electrical Machine Laminations Exposed to High Frequency and Non-sinusoidal Flux”

- **2008: B.Sc,** Electrical Engineering, Power and Machines Section, Alexandria University, Egypt

### *Academic positions:*

- **September 2015:** Full-time Lecturer, Department of Electrical Engineering, Pharos University in Alexandria
- **June - August 2015:** Post-doctoral Fellow, Department of Electrical and Computer Engineering Department, Concordia University, Montréal, Canada
- **Jan 2015 - June 2015:** Part-time Lecturer, Department of Electrical and Control Engineering, Arabic Academy of Science and Technology, Alexandria
- **May 2010 - December 2014:** Research and Teaching Assistant, Department of Electrical and Computer Engineering Department, Concordia University, Montréal, Canada

### *Fellowships*

- **2014:** Concordia University Accelerator Award for the completion of the PhD degree requirements within 3 years.
- **2011 - 2014:** Received Frederick Lowy Scholars Fellowship to read for the PhD at Concordia University.
- **2012:** Won the F. A. Gerard Prize for the most deserving graduate of the Master's program at the faculty of Engineering and Computer Science, Concordia University.

	<ul style="list-style-type: none"> <li>• <b>2011–2014:</b> Awarded Concordia University PhD International Fee Remission Award.</li> <li>• <b>2011:</b> Awarded Concordia University Merit Scholarship (Declined to take up the Frederick Lowy Fellowship).</li> <li>• <b>2011–2014:</b> Received three times the Concordia Conference and Exposition Award.</li> <li>• <b>2008:</b> Awarded the Young Innovators Award for the Bachelor degree graduation project along with six other project members.</li> </ul>
<p><b>Publications:</b></p>	<p><b><i>Journal Papers</i></b></p> <p>[1] Maged Ibrahim and Pragasen Pillay, “Design of a Variable Flux Permanent Magnet Machine for Reduced Inverter Rating,” <i>IEEE Transactions on Industry Applications</i>, vol. 51, no. 5, pp. 3666-3674, Sept.-Oct. 2015.</p> <p>[2] Maged Ibrahim and Pragasen Pillay, “Design of Variable Flux Permanent Magnet Machines Using Alnico Magnets,” <i>IEEE Transactions on Industry Applications</i>, vol. 51, no. 6, pp. 4482-4491, Nov.-Dec. 2015.</p> <p>[3] Maged Ibrahim and Pragasen Pillay, “Hysteresis Dependent Model for the Brushless Exciter of Synchronous Generators,” <i>IEEE Transactions on Energy Conversion</i>, vol. 30, no. 4, pp. 1321-1328, Dec. 2015.</p> <p>[4] Maged Ibrahim and Pragasen Pillay, “A Hybrid Model for Improved Hysteresis Loss Prediction in Electrical</p>

Machines,” *IEEE Transactions on Industry Applications*, vol.50, no.4, pp. 2503 - 2511, July-Aug. 2014.

- [5] Maged Ibrahim and Pragasen Pillay, “Core Loss Prediction in Electrical Machine Laminations Considering Skin Effect and Minor Hysteresis Loops,” *IEEE Transactions on Industry Applications*, vol.49, no.5, pp. 2061 - 2068, Sep.-Oct. 2013.
- [6] Maged Ibrahim and Pragasen Pillay, “Advanced Testing and Modeling of Magnetic Materials Including a New Method of Core Loss Separation,” *IEEE Transactions on Industry Applications*, vol.48, no.5, pp.1507-1515, Sep.-Oct. 2012.
- [7] Yu Zhang, Pragasen Pillay, Maged Ibrahim, and Ming-C. Cheng “Magnetic Characteristics and Core Losses in Machine Laminations: High Frequency Loss Prediction from Low Frequency Measurements,” *IEEE Transactions on Industrial Applications*, Vol. 48, No. 2, pp. 623 - 629 Mar. /Apr. 2012.
- [8] Lesedi Masisi, Maged Ibrahim and Pragasen Pillay “The Effect of the Three Level Neutral Point Clamped (NPC) Inverter on the Core Loss of a Synchronous Reluctance Machine (SynRM)”, in the second round of review, *IEEE Transactions on Industry Applications*.
- [9] Lesedi Masisi, Maged Ibrahim and Pragasen Pillay “Control Strategy of a Variable Flux Machine Using AlNiCo Permanent Magnets”, in the second round of review, *IEEE Transactions on Industry Applications*.

### ***Conference Papers***

- [10] Maged Ibrahim and Pragasen Pillay, "Novel Equipment for the Measurement of High Frequency Core Losses in Laminations for Advanced Machines," International Electrical Machines and Drives Conference (IEMDC), Niagara Falls, Canada, May 2011.
- [11] Maged Ibrahim and Pragasen Pillay, "Advanced Testing and Modeling of Magnetic Materials Including a New method of Core Loss Separation" Energy Conversion Congress and Exposition conference (ECCE), Phoenix, Arizona, USA, Sep. 2011.
- [12] Maged Ibrahim and Pragasen Pillay, "Prediction and Measurement of Core Losses in Laminations Exposed to Non-Sinusoidal Excitations," 20th International Conference on Soft Magnetic Materials (SMM), Kos Island, Greece, Sep. 2011.
- [13] Maged Ibrahim and Pragasen Pillay, "Core Loss Prediction in Electrical Machine Laminations Considering Skin Effect and Minor Hysteresis Loops," Energy Conversion Congress and Exposition conference (ECCE), Raleigh, North Carolina, USA, Sep. 2012.
- [14] Maged Ibrahim and Pragasen Pillay, "A Hybrid Model for Improved Hysteresis Loss Prediction in Electrical Machines," Energy Conversion Congress and Exposition

(ECCE), Denver, Colorado, USA, Sep. 2013.

- [15] Maged Ibrahim and Pragasen Pillay, "Modeling of Hysteresis Dependent Magnetization Inductance for a Brushless Exciter Model," Electric Machines and Drives Conference (IEMDC), Chicago, Illinois, USA, May 2013.
- [16] Maged Ibrahim and Pragasen Pillay, "Design of Variable Flux Permanent Magnet Machine for Reduced Inverter Rating," International Conference on Electrical Machines (ICEM), Berlin, Germany, 2-5 Sep. 2014.
- [17] Maged Ibrahim and Pragasen Pillay, "Design of High Torque Density Variable Flux Permanent Magnet Machine Using Alnico Magnets," Energy Conversion Congress and Exposition conference (ECCE), Pittsburg, Pennsylvania, USA, 14-18 Sep. 2014.
- [18] Lesedi Masisi, Maged Ibrahim and Pragasen Pillay "The Effect of the Three Level Neutral Point Clamped (NPC) Inverter on the Core Loss of a Synchronous Reluctance Machine (SynRM)", Electric Machines and Drives Conference (IEMDC), Coeur d'Alène, Idaho, USA, 10-13 May 2015.
- [19] Lesedi Masisi, Maged Ibrahim and Pragasen Pillay "Control Strategy of a Variable Flux Machine Using AlNiCo Permanent Magnets", Energy Conversion Congress and Exposition conference (ECCE), Montreal, QC, Canada, 20-24 Sep. 2015.

	<p>[20] Maged Ibrahim and Pragasen Pillay, "Design of Variable Flux Permanent Magnet Machines for Improved Field Weakening Operation," Energy Conversion Congress and Exposition conference (ECCE), Milwaukee, Wisconsin, USA, Sep. 2016.</p> <p>[21] Amir Masoud, Maged Ibrahim and Pragasen Pillay, "Torque ripple reduction of a variable flux motor," Energy Conversion Congress and Exposition conference (ECCE), Milwaukee, Wisconsin, USA, September 2016.</p>
<p><b>Academic Research interests:</b></p>	<ul style="list-style-type: none"> <li>• Design, modeling and control of electric machines</li> <li>• Finite element simulation of electromagnetic devices</li> <li>• Electric and hybrid electric vehicles</li> <li>• Renewable energy sources including wind and solar energy</li> <li>• Power electronic converters</li> <li>• Hysteresis modeling of magnetic materials</li> </ul>