Shimaa Eissa, Ph.D.

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EDUCATION

- **Ph.D.** in Material Science **2015**
  - Visiting researcher at Université du Québec à Montréal (UQAM), Quebec, Canada **2013-2015**
  - Université du Québec, Institut national de la recherche scientifique – Énergie, Matériaux et Télécommunications (INRS-EMT), Canada **2011-2013**
- **M. Sc.** in Analytical Chemistry **2010**
  - Faculty of Science, Damietta, Mansoura University, Egypt.
- Preliminary postgraduate studies for the master degree **2006**
  Faculty of Science Damietta, Mansoura University, Egypt.
- **Diploma** in Biochemistry **2005**
  Faculty of Science Damietta, Mansoura University, Egypt.
- **B. Sc.** in Chemistry **2004**
  Chemistry Dept., Faculty of Science, Damietta, Mansoura University, Egypt.

RESEARCH INTEREST

- Design and characterization of electrochemical biosensors for various environmental and biomedical applications.
- Selection and characterization of aptamers as new recognition receptors against various targets including small molecules and proteins and their biosensing applications.
- Studying the performance of carbon nanomaterials such as different graphene materials in electrochemical biosensors and their applications.

AWARDS & SCHOLARSHIPS

- **Master degree scholarship** **2005-2010**
  Faculty of Science, Damietta, Mansoura University, Egypt
- **Travel award** **2010-2012**
  The NSERC-CREATE Training Program in Integrated Sensor Systems (ISS), Canada
- **Ph.D. scholarship** **2011-2014**
  INRS-EMT, Quebec, Canada
- **International fees exemption scholarship** **2011-2014**

University of Quebec- INRS-EMT, Canada

- **Travel award for 98th CSC conference** **2015**
  Université du Québec à Montréal, Canada
- **Travel grant for 227th ECS Meeting** **2015**
  ECS–The Electrochemical Society
  Pennington, NJ, USA
- **Travel grant: Graphene and Beyond-2D Materials symposium** **2015**
  B06 symposium organizer, ECS meeting, USA

PROFESSIONAL AFFILIATIONS

- Member, Canadian Society of Chemistry (CSC) **2011-2015**
- Member, American Chemical Society (ACS) **2014-2015**
- Member, Electrochemical Society (ECS) **2014-2015**
- Member, Centre québécois sur les matériaux fonctionnels (CQMF) **2013-2015**

PUBLICATIONS

1- Shimaa Eissa, Mohamed Siaj, Mohammed Zourob, Aptamer-Based Competitive Electrochemical Biosensor for Brevetoxin-2, *Biosens. Bioelectron.,* 2015, 69, 148–154.

2- Shimaa Eissa, Gaston Contreras Jimenez, Farzaneh Mahvash, Abdeladim Guermoune, Chaker Tlili, Thomas Szkopek, Mohammed Zourob, and Mohamed Siaj, Functionalized CVD monolayer graphene for label-free impedimetric biosensing, *Nano research*, 2015, 8, 1698-1709.

3- Gaston Contreras, Shimaa Eissa, Andy Ng, Mohammed Zourob and Mohamed Siaj, Aptamer-Based Label-Free Impedimetric Biosensor for the Detection of Progesterone, *Anal. Chem.*, 2015, 87, 1075–1082.

4- Shimaa Eissa, Andy Ng, Mohamed Siaj, Mohammed Zourob, Label-free voltammetric aptasensor for the sensitive detection of microcystin-LR using graphene-modified electrodes, *Anal. Chem*., 2014, 86, 7551−7557.

5- Shimaa Eissa, Andy Ng, Mohamed Siaj, Ana C. Tavares, Mohammed Zourob, Selection and identification of DNA aptamers against okadaic acid for biosensing application, *Anal. Chem*., 2013, 85, 11794−11801.

6- Shimaa Eissa, Lamia L'Hocine, Mohamed Siaj, Mohammed Zourob, Graphene-based label free voltammetric immunosensor for sensitive detection of the egg allergen ovalbumin, *Analyst,* 2013, 138, 4378−4384.

7- Irina Stateikina, Shimaa Eissa, Mohammed Zourob, Design and fabrication of integrated multi-analyte sensing platform with magnetic micro-coils, *J. Microelectromech. Syst.,* 2013, 22, 1339–1346.

8- Shimaa Eissa, Mohammed Zourob, A graphene-based electrochemical competitive immunosensor for the sensitive detection of okadaic acid in shellfish, *Nanoscale*, 2012, 4, 7593–7599.

9- Andy Ng, Raja Chinnappan, Shimaa Eissa, Hechun Liu, Chaker Tlili, Mohammed Zourob, Selection, Characterization and Biosensing Application of High Affinity Congener-Specific Microcystin-Targeting Aptamers, *J. Environ. Sci. Technol.*, 2012, 46, 10697−10703. (A.N., R.C., and S.E. contributed equally to this work).

10- Shimaa Eissa, Chaker Tlili, Lamia L'Hocine, Mohammed Zourob, Electrochemical immunosensor for the milk allergen β-lactoglobulin based on electrografting of organic film on graphene modified screen-printed carbon electrodes, *Biosens. Bioelectron.*, 2012, 38, 308–313.
11- Abd-Elgawad Radi, Shimaa Eissa, Voltammetric and spectrophotometric studies on the inclusion complex of glipizide with β-cyclodextrin, *Eurasian J. Anal. Chem.*, 2011, 6, 13−21.
12- Abd-Elgawad Radi, Shimaa Eissa, Electrochemical study of indapamide and its complexation with β-cyclodextrin, *J. Incl. Phenom. Macrocycl. Chem.*, 2011, 71, 95−102.
13- Abd-Elgawad Radi, Shimaa Eissa, Electrochemical study of glimepiride and its complexation with β-cyclodextrin, *Collect. Czech. Chem. Commun.*, 2011, 76, 13–25.
14- Abd-Elgawad Radi, Shimaa Eissa, Electrochemistry of Cyclodextrin Inclusion Complexes of Pharmaceutical Compounds, *The Open Chem. Biomed. Meth. J.,* 2010, 3, 74– 85.
15- Abd-Elgawad Radi, Shimaa Eissa, Electrochemical Study of Gliclazide and Its Complexation with β-Cyclodextrin, *Electroanalysis*, 2010, 22, 2991–2996.
16- Abd-Elgawad Radi, Shimaa Eissa, Voltammetric and spectrophotometric study on the complexation of glibenclamide with β-cyclodextrin, *J. Incl. Phenom. Macrocycl. Chem.*, 2010, 68, 417– 421.

BOOK CHAPTERS

1- Shimaa Eissa, Mohammed Zourob, Graphene-based biosensors for food safety, In "Food Biosensors", Minhaz U. Ahmed 2016, *In press*.
2- Shimaa Eissa, Raja Chinnappan, Mohammed Zourob, Biosensors for food allergen detection, In "Food allergy methods of detection and clinical studies", Anas Abdul Rahman 2016, *In preparation*.

CONFERENCES

1- Mohamed Siaj, Shimaa Eissa and Ana C. Tavares, "Electrochemical biosensors based on graphene for foodborne contaminants", Graphene and 2D Materials International Conference and Exhibition, Montreal, Quebec, Canada, October 14-16, 2015.
2- Shimaa Eissa, Jeanne N'diaye, Ana C. Tavares and Mohamed Siaj, "Effect of graphene oxide sheet size on the sensitivity of label-free electrochemical biosensors", 98th Canadian Chemical Society Conference, Ottawa, Ontario, Canada, June 13-17, 2015.
3- Gaston Contreras, Shimaa Eissa, Andy Ng, Mohammed Zourob and Mohamed Siaj, "Electrochemical ssDNA Aptasensors to detect hormones in water", 98th Canadian Chemical Society Conference, Ottawa, Ontario, Canada, June 13-17, 2015.
4- Shimaa Eissa, Mohamed Siaj, Mohammed Zourob "Aptamer-Based Electrochemical Biosensor for Marine Toxins", ECS 227th meeting, Chicago, IL, USA, May 24-28, 2015.
5- Shimaa Eissa, Mohamed Siaj, Mohammed Zourob, "Selection, Characterization, and Application of High Affinity Microcystin-Targeting Aptamers in a graphene-based biosensing platform", ECS 227th meeting, Chicago, IL, USA, May 24-28, 2015.
6- Gaston Contreras, Shimaa Eissa, Andy Ng, Mohammed Zourob and Mohamed Siaj, "Development of Electrochemical Aptamer-Based Biosensors for the Detection of Hormonal Contaminants in Water", ECS 227th meeting, Chicago, IL, USA, May 24-28, 2015.
7- Shimaa Eissa, Mohammed Zourob and Mohamed Siaj, "Aptamer-Based Competitive Electrochemical Biosensor for Brevetoxin-2", Pittcon, New Orleans, LA, USA, March 08-12, 2015.

8- Gaston Contreras, Shimaa Eissa, Andy Ng, Mohammed Zourob and Mohamed Siaj, "Aptamer-based electrochemical biosensing platform for detection of hormonal pollutants in water", Pittcon, New Orleans, LA, USA, March 08-12, 2015.
9- Shimaa Eissa, Jeanne N'diaye, Ana C. Tavares and Mohamed Siaj, "Graphene oxide sheet sizes exhibit strong influence on the sensitivity of biosensors", CQMF 2014 annual Symposium, Shawinigan, Quebec, Canada, Nov. 06-07, 2014.
10- Mohammed AL-Ahmadi, Shimaa Eissa, Gaston Contreras and Mohamed Siaj, "Graphene-coated magnetic nanoparticles for biosensing applications", CQMF 2014 annual Symposium, Shawinigan, Quebec, Canada, Nov. 06-07, 2014.
11- Gaston Contreras, Shimaa Eissa, Andy Ng, Mohammed Zourob and Mohamed Siaj, "Aptamer-based electrochemical biosensing platform for detection of hormonal pollutants in water", CQMF 2014 annual Symposium, Shawinigan, Quebec, Canada, Nov. 06-07, 2014.
12- Gaston Contreras, Shimaa Eissa, Andy Ng, Mohamed Siaj and Mohammed Zourob, "Aptamer-based electrochemical biosensing platform for detection of progesterone in water", 97th Canadian Chemical Society Conference, Vancouver, British Columbia, Canada, June 01-05, 2014.
13- Shimaa Eissa, Mohamed Siaj, Mohammed Zourob, Ana C. Tavares and Andy Ng, "Label-Free Impedimetric Aptasensor for the Sensitive Detection of the Marine Toxin Okadaic Acid", Pittcon, Chicago, IL, USA, March 02-06, 2014.
14- Shimaa Eissa, Mohamed Siaj and Mohammed Zourob, Ana Tavares, "Label-free voltammetric aptasensor for the sensitive detection of microcystin-LR using graphene-modified electrodes", 96th Canadian Chemical Society Conference, Quebec, Quebec, Canada, May 26-30, 2013.
15- Shimaa Eissa, Mohammed Zourob, Ana Tavares, and Mohamed Siaj, "Label-free voltammetric aptasensor for the sensitive detection of microcystin-LR using graphene-modified electrodes", Joint workshop on functional materials and surfaces (Canada-Germany), Université de Montréal, Canada, May 23, 2013.
16- Shimaa Eissa, Chaker Tlili and Mohammed Zourob, "Graphene-based label free electrochemical immunosensor for the sensitive detection of food allergens", 95th Canadian Chemical Society Conference, Calgary, Canada, May 26-30, 2012.
17- Shimaa Eissa, and Mohammed Zourob, "A graphene array platform for the ultrasensitive label-free multiplexed electrochemical detection of allergens in food" Biosensor Conference, Cancun, Mexico, May 15-18, 2012.
18- Shimaa Eissa, Chaker Tlili, Lamia L'Hocine, Mohammed Zourob, "Graphene-based label-free voltammetric immunosensor for the sensitive detection of multiple food allergens", Seventh Workshop on Food Allergen Methodologies, Montreal, Canada, May 6- 9, 2012.
19- Shimaa Eissa, Chaker Tlili and Mohammed Zourob, "Graphene-based label-free voltammetric immunosensor for the sensitive detection of multiple food allergens", NanoQuébec Conference, Montreal, Canada, March 20-21, 2012.