



**Chemistry Department  
Faculty of Science  
Tanta University**

## CURRICULUM VITAE



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Lecturer of Physical Chemistry

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Google scholar: <https://scholar.google.com/citations?user=9FCnGs4AAAAJ&hl=en>

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## Personal Data

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<b>Date of Birth</b>	July 15, 1984.
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## Summary

- From June 1, 2019-till May 30, 2021 Postdoctoral Researcher, Jiangsu Key Laboratory of Electrochemical Energy-Storage Technologies, College of Materials Science and Technology, Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing 210016, China
- From May 1, 2019-till April 30, 2021 Visiting Researcher, Prof. Yusuke Yamauchi, Mesoscale Material Chemistry group, MANA, National Institute for Material Sciences (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan  
Research Theme “QCM study using functional porous materials”
- From May 1, 2019-till April 30, 2021 Research Academic, Prof. Yusuke Yamauchi, Australian Institute for Bioengineering and Nanotechnology, The University of Queensland (UQ), Brisbane Qld 4072, Australia.
- From January 1, 2018-till December 31, 2018 Visiting Researcher, Prof. Yusuke Yamauchi, Mesoscale Material Chemistry group, MANA, National Institute for Material Sciences (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan  
Research Theme “QCM study using functional porous materials”
- From December 16, 2018-till April 30 Visiting Reseracher, Dr. Hisashi Tanaka, Nanoprticle Functional Design group (NPF), National Institute of Advanced Industrial Science and Technology (AIST), 1-1-1 Higashi, Tsukuba 305-8565, Japan
- From June 1, 2017-till March 31, 2019 AIST Postdoctoral Research Fellow, Prof. Tohru Kawamoto, Nanoprticle Functional Design group (NPF), National Institute of Advanced Industrial Science and Technology (AIST), 1-1-1 Higashi, Tsukuba 305-8565, Japan
- October 2014-present Lecturer of Physical Chemistry, Chemistry Department, Faculty of Science, Tanta University, Egypt.
- April 2014-May 2014 Postdoctoral researcher, Prof. Yusuke Yamauchi, National Institute for Material Sciences (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan
- April 2011-March 2014 Junior researcher, National Institute for Material Sciences (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan. And

- PhD student (School of Advanced Science and Engineering, Waseda University, 1-104 Totsukamachi, Shinjuku-ku, Tokyo, 169-8050, Japan).
- July 2010-September 2014 Ass. Lecturer, Chemistry Department, Faculty of Science, Tanta University, Egypt.
- November 2005-July 2010 Demonstrator, Chemistry Department, Faculty of Science, Tanta University, Egypt.
- December 2005-present A member of teaching staff, Chemistry Department, Faculty of Science, Tanta University, Egypt.

### Special Scientific Grants

- Visiting researcher at Prof. Yusuke Yamauchi's group from November 1, 2010 to January 29, 2011. World Premier International (WPI) Research Center for Materials Nanoarchitectonics (MANA), National Institute for Material Sciences (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan.

### Education

#### Academic Qualifications

- 2014, Doctor of Philosophy of Science and Engineering (Ph.D.) School of Advanced Science and Engineering, Waseda University, Tokyo, Japan.  
"Title: Synthesis of Nanoporous Carbons by Thermal Treatment of Metal-Organic-Frameworks" (National Institute for Material Sciences (NIMS) and Waseda University program).
- 2010, Master of Science of Physical Chemistry (M.Sc.) Chemistry Department, Faculty of Science, Tanta University, Egypt.  
"Title: Sensor Based on Quartz Crystal Microbalance Coated with Thin Polyaniline Films"
- 2005, Bachelor of Chemistry Sciences (B.Sc.) Chemistry Department, Faculty of Science, Tanta University, Egypt.

#### Postgraduate Studies

- 2006, Postgraduate Studies in Physical and Inorganic Chemistry Chemistry Department, Faculty of Science, Tanta University, Egypt.

### Experiences and Research Activities

#### Nanoscience

I am interested in many scientific aspects ranging from fundamental chemistry to industrial-scale production. My research target is rational design of nanoporous materials with controlled composition and morphology.

- Synthesis of nanoporous carbons (NPCs) with controlled particle sizes, highly crystalline and well-dispersed metal nanoparticles, having high graphitization degree (high content of  $sp^2$ -bonded carbons) *via* one-step direct carbonization of porous coordination polymers (PCPs) and metal-organic frameworks (MOFs) without any additional carbon sources for supercapacitors applications.

- Size- and shape-controlled synthesis of Prussian blue (PB) and PB analogues nanoparticles *via* batch synthesis method with microporous crystalline shells by utilizing a controlled self-etching for environmental applications.
- Establishment of a synthesis method using a micro-mixer technique to synthesize PCPs with different vacancies for improved r-Cs adsorption performance and a large scale practical use for decontamination of seawater in Fukushima area.
- Synthesis of novel inorganic nanoporous materials by utilizing various self-assembly processes.
- Synthesis, characterization and applications of conducting polymers using chemical methods. Synthesis, characterization and applications of nanofibers and nanotubes of conducting polymers and their nanocomposites with gold, silver, platinum and palladium nanoparticles for adsorption and biological applications.

### Monitoring systems experience

- Inductively coupled plasma mass spectrometry (ICP-MS) for monitoring of trace elements concentration in seawater and drinkable water.
- Microwave assisted-decomposition system.
- Microwave Plasma-Atomic Emission Spectrometer (MP-AES) analytical technique.

### Nanotechnology of Sensing

Development of advanced nanotechnological products for environmental remediation. Development of nanoporous materials with novel nanoarchitectures integrated into QCM technique by drop-coating, dip-coating, layer-by-layer (LbL) self-assembly, *in-situ* film formation to realize efficient detection systems in nanogram-level of toxic target analytes.

### Publications

1. Rational Design of Nanoporous MoS<sub>2</sub>/VS<sub>2</sub> Heteroarchitecture for Ultrahigh Performance Ammonia Sensors  
S. Zhang, J. Wang, **Nagy L. Torad**, W. Xia, M. A. Aslam, Y. V. Kaneti, Z. Hou, Z. Ding, B. Da, A. Fatehmulla, A. M. Aldhafiri, W. A. Farooq, J. Tang, Y. Bando, and Y. Yamauchi, *Small* **2019**, 1901718, <https://doi.org/10.1002/sml.201901718>.
2. Advanced nanoporous material based QCM devices: A new horizon of interfacial mass sensing technology  
**Nagy L. Torad**, S. Zhang, W. A. Amer, M. M. Ayad, M. Kim, J. Kim, B. Ding, X. Zhang, T. Kimura, Y. Yamauchi, *Adv. Mater. Interfaces* **2019**, 1900849, <https://doi.org/10.1002/admi.201900849>.
3. Decontamination of very dilute Cs in seawater by a coagulation-precipitation method using a nanoparticle slurry of copper hexacyanoferrate  
**Nagy L. Torad**, A. Takahashi, M. Kawakami, T. Kawamoto, H. Tanaka, *Environ. Sci.: Water Res. Technol.* **2019**, 5, 1328–1338.
4. A wide range sensor of a 3D mesoporous silica coated QCM electrodes for the detection of volatile organic compounds  
M. M Ayad, **Nagy L Torad**, I. M. Minisy, R. Izriq, E.M. Ebeid, *J. Porous Mater.* **2019**, 1-11 <https://doi.org/10.1007/s10934-019-00765-3>.
5. A facile synthesis of hematite nanorods from rice starch and their application to lead ions removal

- M. I. U. Hoque, Y. Yamauchi, R. Naidu, R. Holze, S. Rahman, Q. Qu, M. M. Rahman, **Nagy L. Torad**, M. S. A. Hossain, J. Kim, S. H. A. Ahmad, A. U. Rehman, M. S. H. Firoz, U. Luba, S. Chowdhury, A.-N. Chowdhury, *Chemistry Select* **2019**, 4, 3730–3736.
6. Fabrication of nanoporous carbon materials with hard and Soft-templating approaches: A review  
V. Malgras, J. Tang, J. Kim, **Nagy L. Torad**, S. Dutta, K. Ariga, Md. S. A. Hossain, Y. Yamauchi, K. C. W. Wu, *J. Nanosci. & Nanotechnol.*, **2019**, 19, 3673–3685.
  7. Cyclodextrin functionalized mesoporous silica for environmental remediation of methylene blue dye  
**Nagy L. Torad**, M. M. Ayad, Rajaa Azriq, *J. Nanosci. & Nanotechnol.*, **2019**, 19, 770–779.
  8. Synthesis of nanoporous calcium carbonate spheres using double hydrophilic block copolymer poly(acrylic acid-*b*-N-isopropylacrylamide)  
S. Guragain, **Nagy L. Torad**, Y. G. Alghamdi, A. A. Alshehri, J. Kim, B. P. Bastakoti, Y. Yamauchi, *Mater. Lett.* **2018**, 230, 143–147.
  9. pH-responsive sulphonated mesoporous silica: a comparative drug release study  
M. M. Ayad, N. A. Salahuddin, **Nagy L. Torad**, A. Abu El-Nasr, *RSC Adv.* **2016**, 6, 57929–57940.
  10. Amine-functionalized mesoporous silica KIT-6 as a controlled release drug delivery carrier  
M. M. Ayad, N. A. Salahuddin, A. Abu El-Nasr, **Nagy L. Torad**, *Micro. Meso. Mater.* **2016**, 229, 166–177.
  11. Hydrogels containing Prussian Blue nanoparticles toward removal of radioactive cesium ions  
Y. Kamachi, M. B. Zakaria, **Nagy L. Torad**, T. Nakato, T. Ahamad, S. M. Alshehri, V. Malgras, Y. Yamauchi, *J. Nanosci. Nanotechnol.* **2016**, 16, 4200–4204.
  12. Fabrication of asymmetric supercapacitors based on coordination polymer derived nanoporous materials  
R. R. Salunkhe, M. Zakaria, Y. Kamachi, **Nagy L. Torad**, J. H. Kim, Y. Yamauchi, *Electrochimica Acta* **2015**, 183, 94–99.
  13. Adsorption of copper ion from aqueous solution by nanoporous carbon derived from MOF  
N. Bakhtiari, S. Azizian, **Nagy L. Torad**, Y. Yamauchi, *Microporous and Mesoporous Materials* **2015**, 217, 173–177.
  14. Dual soft-template system based on colloidal chemistry for the synthesis of hollow mesoporous silica nanoparticles  
Yunqi Li, B. P. Bastakoti, M. Imura, J. Tang, A. Aldabahi, **Nagy L. Torad**, Y. Yamauchi, *Chemistry-A European Journal* **2015**, 21, 6375–6380.
  15. Thermal conversion of core-shell metal-organic frameworks: a new method for selectively functionalized nanoporous hybrid carbon  
J. Tang, R. R. Salunkhe, J. Liu, **Nagy L. Torad**, M. Imura, S. Furukawa, Y. Yamauchi, *Journal of the American Chemical Society* **2015**, 137, 1572–1580.
  16. Fabrication of symmetric supercapacitors based on MOF-derived nanoporous carbons  
R. R. Salunkhe, Y. Kamachi, **Nagy L. Torad**, S. M. Hwang, Z. Sun, S. X. Dou, J. H. Kim, Y. Yamauchi, *Journal of Materials Chemistry A* **2014**, 2, 19848–19854.
  17. Towards vaporized molecular discrimination: a quartz crystal microbalance (QCM) sensor system using cobalt-containing mesoporous graphitic carbon  
J. Tang, **Nagy L. Torad**, R. R. Salunkhe, J.-H. Yoon, M. S. Al Hossain, S. X. Dou, J. H. Kim, T. Kimura, Y. Yamauchi, *Chemistry-An Asian Journal* **2014**, 9, 3238–3244.
  18. Nanoarchitected graphene-based supercapacitors for next-generation energy-storage applications  
R. R. Salunkhe, Y.-H. Lee, K.-H. Chang, J.-M. Li, P. Simon, J. Tang, **Nagy L. Torad**, C.-C. Hu, Y. Yamauchi, *Chemistry-A European Journal* **2014**, 20, 13838–13852.

19. Tailored design of functional nanoporous carbon materials toward fuel cell applications  
J. Tang, L. Liu, **Nagy L. Torad**, T. Kimura, Y. Yamauchi, *Nano Today* **2014**, 9, 305–323.
20. Trace-level gravimetric detection promoted by surface interactions of mesoporous materials with chemical vapors  
T. Kimura, **Nagy L. Torad**, Y. Yamauchi, *Journal of Materials Chemistry A*, **2014**, 2, 8196–8200.
21. Electric double-layer capacitors based on highly graphitized nanoporous carbons derived from ZIF-67  
**Nagy L. Torad**, R. R. Salunkhe, Y. Li, H. Hamoudi, M. Imura, Y. Sakka, C.-C. Hu, Y. Yamauchi, *Chemistry-A European Journal* **2014**, 20, 7895–7900.
22. Synthesis of nanoporous carbon-cobalt oxide hybrid electrocatalysts by thermal conversion of metal-organic frameworks  
W. Chaikittisilp, **Nagy L. Torad**, C. Li, M. Imura, N. Suzuki, S. Ishihara, K. Ariga, Y. Yamauchi, *European Journal of Inorganic Chemistry* **2014**, 20, 4217–4221.
23. MOF-derived nanoporous carbon as intracellular drug delivery carriers  
**Nagy L. Torad**, Y. Li, S. Ishihara, K. Ariga, Y. Kamachi, H.-Y. Lian, Y. Sakka, W. Chaikittisilp, K. C.-W. Wu, Y. Yamauchi, *Chemistry Letters* **2014**, 43, 717–719.
24. Direct synthesis of MOF-derived nanoporous carbon with magnetic Co nanoparticles toward efficient water treatment  
**Nagy L. Torad**, M. Hu, S. Ishihara, H. Sukegawa, A. Belik, M. Imura, Y. Yamauchi, *Small* **2014**, 10, 2096–2107.
25. Highly crystallized nanometer-sized zeolite A with large Cs adsorption capability for the decontamination of water  
**Nagy L. Torad**, M. Naito, J. Tatami, A. Endo, S.-Y. Leo, K. C.-W. Wu, T. Wakihara, Y. Yamauchi, *Chemistry-An Asian Journal* **2014**, 9, 759–763.
26. Polymeric micelles assembly for direct synthesis of Pt-decorated mesoporous TiO<sub>2</sub> toward highly selective sensing of acetaldehyde  
B. P. Bastakoti, **Nagy L. Torad**, Y. Yamauchi, *ACS Applied Materials & Interfaces* **2014**, 6, 854–860.
27. Replication of mesoporous silica films from block copolymer films through a chemical vapor approach  
**Nagy L. Torad**, N. Suzuki, M. Matsuura, K. Maekawa, H. Tanabe, K. C.-W. Wu, Y. Yamauchi, *Chemistry-A European Journal* **2013**, 19, 10478–10481.
28. Facile synthesis of nanoporous carbons with controlled particle sizes by direct carbonization of monodispersed ZIF-8 crystals  
**Nagy L. Torad**, M. Hu, Y. Kamachi, K. Takai, M. Imura, M. Naito, Y. Yamauchi, *Chemical Communications* **2013**, 49, 2521–2523.
29. Preparation of mesoporous titania thin films with well-crystallized frameworks by using thermally stable triblock copolymers  
M. B. Zakaria, N. Suzuki, **Nagy L. Torad**, M. Matsuura, K. Maekawa, H. Tanabe, Y. Yamauchi, *European Journal of Inorganic Chemistry* **2013**, 2330–2335.
30. Synthesis of highly strained mesostructured SrTiO<sub>3</sub>/BaTiO<sub>3</sub> composite films with robust ferroelectricity  
N. Suzuki, M. B. Zakaria, **Nagy L. Torad**, K. C.-W. Wu, Y. Nemoto, M. Imura, M. Osada, Y. Yamauchi, *Chemistry-A European Journal* **2013**, 19, 4446–4450.
31. Large Cs adsorption capability of nanostructured Prussian Blue particles with high accessible surface areas  
**Nagy L. Torad**, M. Hu, M. Imura, M. Naito, Y. Yamauchi, *Journal of Materials Chemistry* **2012**, 22, 18261–18267.

32. Novel block copolymer templates for tuning mesopore connectivity in cage-type mesoporous silica films  
Nagy L. Torad, H.-Y. Lian, K. C.-W. Wu, M. B. Zakaria, N. Suzuki, S. Ishihara, Q. Ji, M. Matsuura, K. Maekawa, K. Ariga, T. Kimura, Y. Yamauchi, *Journal of Materials Chemistry* **2012**, 22, 20008–20016.
33. Preparation of various Prussian Blue analogue hollow nanocubes with single crystalline shells  
H. Ming, Nagy L. K. Torad, Y. Yamauchi, *European Journal of Inorganic Chemistry* **2012**, 4795–4799.
34. Size- and shape-controlled synthesis of Prussian Blue nanoparticles by a polyvinylpyrrolidone-assisted crystallization process  
H. Ming, Nagy L. K. Torad, Y.-D. Chiang, K. C.- W. Wu, Y. Yamauchi, *Crystal Engineering Communication* **2012**, 14, 3387–3396.
35. Direct carbonization of Al-based porous coordination polymer for synthesis of nanoporous carbon  
M. Hu, J. Reboul, S. Furukawa, Nagy L. Torad, Q. Ji, P. Srinivasu, K. Ariga, S. Kitagawa, Y. Yamauchi, *Journal of the American Chemical Society* **2012**, 1347, 2864–2867.
36. Quartz crystal microbalance sensor for detection of aliphatic amines vapours  
Mohamad M. Ayad, Nagy L. Torad, *Sensors and Actuators B Chem.* **2010**, 147, 481–487.
37. Alcohol vapours sensor based on thin polyaniline salt film and quartz crystal microbalance"  
Mohamad M. Ayad, Nagy L. Torad, *Talanta* **2009**, 78, 1280–1285.
38. A sensor of alcohol vapours based on thin polyaniline base film and quartz crystal microbalance  
Mohamad M. Ayad, Gad El-Hefnawey, Nagy L. Torad, *Journal of Hazardous Materials* **2009**, 168, 85–88.
39. Quartz crystal microbalance sensor coated with polyaniline emeraldine base for determination of chlorinated aliphatic hydrocarbons  
Mohamad M. Ayad, Gad El-Hefnawey, Nagy L. Torad, *Sensors and Actuators B Chem.* **2008**, 134, 887–894.

## Citations

- My research papers are cited more than 3870 times in Google scholar.
- h-index: 24.

The *h*-index considers Google scholar articles published since 2008.

Google scholar: <https://scholar.google.com/citations?user=9FCnGs4AAAAJ&hl=en>

Researchgate: [https://www.researchgate.net/profile/Nagy\\_Torad](https://www.researchgate.net/profile/Nagy_Torad)

## Conferences

### • Contributed

1. Development of monitoring method for diluted radioactive cesium in seawater  
The 98th CSJ Annual Meeting (2018), College of Science and Technology, Nihon University- Funabashi Campus, Japan, March 20th - March 23rd, 2018, Nagy L. Torad, Hisashi Tanaka, Kimitaka Minami, Tohru Kawamoto, Ramon Kanai, Kohei Ishikawa, Ryuichi Kamimura
2. pH-Responsive sulphonated mesoporous silica: A comparative drug release study  
The International Conference on Recent Trends in Chemistry (ICRTC-2017), Chemistry Department, Faculty of Science, Tanta University, Tanta, Hurghada, Egypt, April 25-28, 2017, Mohamad M. Ayad, Nehal A. Salahuddin, Nagy L. Torad and Ahmed Abu El-Nasr

3. Thermal Conversion of Core–Shell Metal–Organic Frameworks: A New Method for Selectively Functionalized Nanoporous Hybrid Carbon

The 3rd International Conference of Advanced Applied Sciences (ICAAS-III), Faculty of Postgraduate Studies for Advanced Sciences (PSAS), Beni-Suef University, Hurghada, Egypt, November 17-20, 2015, J. Tang, **Nagy L. Torad**, Y. Yamauchi *et al.*

4. Workshop on “Prospects of Nano Crystals Basics and Application” Poster session- Center of Nanotechnology and Nanophotonics Labo.- Faculty of Science- Kafrelsheikh University

5. Electric Double-Layer Capacitors Based on Nitrogen-Containing Nanostructured Carbons with Well-Defined Shapes

The 5<sup>th</sup> NIMS (MANA)-Waseda International Symposium, Tsukuba, Japan, March 24, 2014, **Nagy L. Torad**, Y. Yamauchi *et al.*

6. Synthesis of nanoporous carbons by thermal treatment of metal-organic-frameworks

Japan-Taiwan Joint Workshop on Nanospace Materials, Fukuoka Institute of Technology (FIT), Fukuoka, Japan, March 11-12, 2014, **Nagy L. Torad**, Y. Yamauchi *et al.*

7. Synthesis of MOF-derived nanoporous carbons with magnetic Co nanoparticles for efficient water treatment

The 8<sup>th</sup> International Mesoporous Materials Symposium (IMMS2013), Hyogo, Japan, May 20, 2013, **Nagy L. Torad**, Y. Yamauchi *et al.*

8. Direct carbonization of monodispersed ZIF-8 crystals for synthesis of microporous carbons

The 4<sup>th</sup> NIMS (MANA)-Waseda International Symposium, Tsukuba, Japan, March 11, 2013, **Nagy L. Torad**, Y. Yamauchi *et al.*

9. Continuous mesoporous silica films consisting of cage-type spherical mesopores by using newly designed amphiphilic diblock copolymer

The 3<sup>rd</sup> NIMS (MANA)-Waseda International Symposium, Tokyo, Japan, November 1, 2011, **Nagy L. Torad**, Y. Yamauchi *et al.*

10. Quartz Crystal Microbalance Sensor for Detection of Aliphatic Amines Vapours

The 10<sup>th</sup> Arab International Conference of Polymer Science and Technology, Ain El-Sokhna, Egypt, December 14-7, 2009.

11. Determination of Chlorinated Aliphatic Hydrocarbons in Air Using Polyaniline Coated Quartz Crystal Microbalance Sensor

The 10<sup>th</sup> International Conference on Chemistry and Its Role in Development, Chemistry Department, Faculty of Science, Mansoura University, March 16-21, 2009.

• **Organized**

1. The International Conference on Recent Trends in Chemistry (ICRTC-2017), Chemistry Department, Faculty of Science, Tanta University, Tanta, Hurghada, Egypt, April 25-28, 2017.

2. The Second Conference of Postgraduate Students in Science (PSS-II), Chemistry Department, Faculty of Science, Tanta University, October 13,14, 2015.

3. First Symposium on Nile Delta Development: Role of the Faculty of Science (SNDD-1), Faculty of Science, Tanta University, September 26, 2015, [www.sndd.tanta.edu.eg](http://www.sndd.tanta.edu.eg)



## Reviewer for Scholarly Journals

### • Reviewing International Journals

#### 1. Scientific Reports

##### I. Manuscript No.: SREP-17-02777

Title: Data-driven nanomechanical sensing: specific information extraction from a complex system

##### II. Manuscript No.: SREP-15-03286

Title: Facile synthesis of carbon nanosphere/NiCo<sub>2</sub>O<sub>4</sub> core-shell sub-microspheres for high performance supercapacitors

##### III. Manuscript No.: SREP-15-25057

Title: Quantitative image analysis for evaluating the abrasion resistance of nanoporous silica films on glass

#### 2. Colloids and Surfaces A: Physicochemical and Engineering Aspects

##### I. Manuscript No.: COLSUA-D-19-02528R1

Title: Enhanced adsorption of phenol from an aqueous solution by calcined trace ZIF-8 decorated activated carbon pellets

#### 3. Microporous & Mesoporous Materials

##### I. Manuscript No.: MICMAT-D-17-01287R1

Title: Fabrication of oriented-macroporous-carbon incorporated with gamma-Al<sub>2</sub>O<sub>3</sub> for high performance lithium-sulfur battery

##### II. Manuscript No.: MICMAT-D-17-00263

Title: Soft-template carbonization approach of MOF-5 to mesoporous carbon nano-spheres as excellent electrode materials for supercapacitors

#### 4. Progress in Organic Coatings

##### I. Manuscript No.: POC-D-15-0049

Title: Detection and Kinetics of Methylamine on Chitosan Film Coated Quartz Crystal Microbalance Electrode

## Thesis Supervision

Thesis	Thesis title	Name of student
Ph.D degree	Synthesis and application of newly developed nanoporous material-based optical chemical sensors for efficient water treatment	Huda Ibrahim Ahmed (Suez Canal University)
M.Sc degree	Structure and properties of self-assembly layer-by-layer of chitosan/active molecules	Hadir M. Sharaf (Tanta University)
Ph.D degree	Functionalized mesoporous hosts and their applications	Ahmed Abu El Nasr (Tanta University), Awarded
Ph.D degree	Synthesis of functional mesoporous silica, KIT-6 for environment-related areas	Rajaa I. Krefit (Libya) (Tanta University), Awarded

## Sponsored Research Projects

1. A project sponsored by the Science and Technology Funding Agency (STDF), Egypt, “**Exceptional Hollow Nanoporous Hybrid Carbons by Thermal Conversion of Metal-Organic Frameworks for Enhanced Energy Storage**”, Project ID 30125, Basic & Applied Grants. Prof. Mohamad. M. Ayad (PI),

**Dr. Nagy L. Torad** (Co-PI) and Dr. Wael A. Amer (member), Chemistry Department- Faculty of Science- Tanta University- Tanta, Egypt (2020-2022).

2. A bilateral research project within the Executive Programme Czech Republic-Egypt sponsored by the Egyptian Academy of Scientific Research and Technology “**Controlled adsorption of water pollutants by conducting polymer composites**”. The Egyptian project members are Dr. Wael A. Amer (EPI), Prof. Mohamad M. Ayad (Co-PI) and **Dr. Nagy L. Torad** (Member), Chemistry Department- Faculty of Science- Tanta University- Tanta, Egypt (2019-2022). The Czech Republic team are Ing. Patrycja Magdalena Bober (FPI), Prof. Jaroslave Stejskal (Memebr), Prof. Jiri Pflieger (Memebr), Prof. Miroslava TRCHOVA (Memebr), Dr. Konstantin A. Milakin (Member), Dr. Francesco Piana (Member), Mr. Islam M. Minisy (Member) and Mr. Udit Acharya (Memebr), Institute of Macromolecular Chemistry, Czech Academy of Sciences, Czech Republic.
3. A project sponsored by the Science and Technology Funding Agency (STDF), Egypt, “**Design of a Smart Plant Nano-Delivery System to Improve Plant Defense**”, Project ID 30209 Young Grant. **Dr. Nagy L. Torad** (PI), Chemistry Department- Faculty of Science- Tanta University- Tanta, Egypt (2019-2021) and Dr. Mohamed El-shetehy (Co-PI), Botany Department- Faculty of Science- Tanta University- Tanta, Egypt.
4. A bilateral research project within the Executive Programme Italy-Egypt sponsored by the Egyptian Academy of Scientific Research and Technology “**Development of innovative magnetically recoverable three-component nanocatalysts (MRTCNs) for wastewater treatment**”. The Egyptian project members are Dr. Wael A. Amer (EPI), **Dr. Nagy L. Torad** (ECo-PI) and Prof. Mohamad M. Ayad (Member), Chemistry Department- Faculty of Science- Tanta University- Tanta, Egypt (2016-2018). The Italian team are Prof. Cristina Della Pina (FPI), Dr. Ermelinda Falletta (Memer) and Prof. Alessandro Ponti (Memer), Consiglio Nazionale delle Ricerche (CNR), Università degli Studi di Milano.
5. A project sponsored by the University of Tanta “**In-situ Interfacial Mass Detection of Pollutants in Water using Quartz Crystal Microbalance**”. The main researcher is Prof. M.M. Ayad, Department of Chemistry- Faculty of Science- Tanta University- Tanta, Egypt (2007-2009). Project completed and accepted in November, 2009. The project ended with the following publication:
  - M.M. Ayad, G. El-Hefnawey and **Nagy L. Torad**, "A Sensor of Alcohol Vapours Based on Thin Polyaniline Base Film and Quartz Crystal Microbalance", Journal of Hazardous Materials, 168 (2009) 85-88.
6. A project sponsored by the Egyptian Academy of Science and Technology “**Sensors based on conducting polymer nano-films**”. The Egyptian coordinator is Prof. M.M. Ayad, Chemistry Department- Faculty of Science- University of Tanta - Tanta, Egypt and the Czech coordinator is Prof. Jaroslav Stejskal, Institute of Macromolecular Chemistry- Academy of Sciences of the Czech Republic-Prague, Czech Republic (2007-2009). Project completed and accepted in 20th October, 2009. The project ended with the following publications:
  - M.M. Ayad, G. El-Hefnawey and **Nagy L. Torad**, "Chlorinated hydrocarbon vapors sensor using polyaniline coated quartz crystal microbalance sensor". Sensors & Actuators B 134 (2008) 887–894.
  - M.M. Ayad and **Nagy L. Torad**, "Quartz crystal microbalance sensor for detection of aliphatic amines vapours", Sensors & Actuators B 147 (2010) 481-487.

## Teaching Activity

- Teaching of some chemistry courses, such as advanced inorganic chemistry, general chemistry and instrumental analysis for the postgraduate studies, foundation and senior students of the Faculty of Science and Faculty of Education.

- Shared in teaching of all practical physical and inorganic chemistry courses for the undergraduate students from the Faculty of Dentistry, Faculty of Science and Faculty of Education.

## Teaching Experience

- **Chemistry Department, Faculty of Science, Tanta University**

- ✚ **Courses Taught**

- Undergraduate Students**

- CH 1111 General Chemistry Fall 2015 and 2016
      - CH 2244 Instrumental Analysis (I) Spring 2015, 2016 and 2017
      - CH 4218 Supramolecular Chemistry Spring 2015, 2016 and 2017  
Summer 2015 and 2016

- Postgraduate Students (Chemistry Program)**

- CH 4218 Advanced Inorganic Chemistry Spring 2015, 2016 and 2017  
Summer 2015 and 2016

- **Faculty of Education, Tanta University (Biology section and General Science section)**

- CH 1111 General Chemistry Fall 2014 and 2015  
Spring 2017

- ✚ **Practical Courses (undergraduate and postgraduate students)**

- **Chemistry Department, Faculty of Science, Tanta University**

- CH 1111 General Chemistry Fall 2015, 2016 and 2017
  - CH 1201 General Physical Chemistry Fall 2014  
Spring 2015
  - CH 2244 Instrumental Analysis (I) Spring 2015 and 2016
  - CH 3109 Instrumental Analysis (II) Fall 2014 and 2015
  - CH 4101 Practical Physical Chemistry (I) Fall 2015 and 2016  
Spring 2015 and 2016
  - CH 4202 Practical Physical Chemistry (II) Spring 2016

- **Faculty of Dentistry, Tanta University**

- CH 1111 General Chemistry Fall 2016
  - CH 1201 General Physical Chemistry Spring 2015

- **Faculty of Education, Tanta University (General and English programs)**

- CH 1111 General Chemistry Fall 2016 and 2017
  - CH 2244 Instrumental Analysis (I) Fall 2016
  - CH 3109 Instrumental Analysis (II) Fall 2014 and 2015

## Awards and Honors

- 2018 Short-term research mission award, Egypt-Japan Education Partnership (EJEP), Culture-Affairs-Missions, Ministry of Higher Education and Scientific Research, Egypt.
- 2017 Postdoctoral Fellowship award, National Institute of advanced Industrial Science and Technology (AIST), 1-1-1 Higashi, Tsukuba, Central 5, 305-8565, Japan.
- 2011 NIMS/Waseda University graduate program scholarship, National Institute for Material Sciences (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan.
- 2010 Misr El Kheir Foundation award for scientific publication during 2009.
- 2006 Student Promotion Award of the Faculty of Science, Tanta University, Egypt.

2005 Student Promotion Award of the Egyptian Syndicate of Scientific Professions, Tanta University, Egypt.

## Training Sessions and workshops

- **Academic projects**

A member in project sponsored by the Tanta University, title: "Quality assurance and accreditation", Faculty of Science from 2010.

- **Sessions**

- Oct. 2014 "How to Write A Research Project", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Sep. 2014 "Ethics of Scientific Research", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Sep. 2014 "Effective Presentation", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Sep. 2014 "Time and Conference Management", International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Sep. 2014 "Code of Ethics", International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Aug. 2014 "Use of Technology in Teaching", International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Jul. 2010 "Credit Hour System", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Jul. 2010 "Time Management and Meetings", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Aug. 2008 "Organization of Scientific Conferences", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Jul. 2007 "Modern Trends in Teaching", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Jun. 2007 "Skills of Effective Thinking", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.
- Apr. 2007 "Effective Teaching", The International Center for Faculty and Leadership Development Project (FLDP), FLDP Center of Tanta University, Tanta, Egypt.

## References

- **Prof. Yusuke Yamauchi** (PhD supervisor, Research reference)  
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- **Prof. El-Refai S. Kenawy** (Research and Teaching reference)

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- **Prof. Hisashi Tanaka** (Research reference)

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