

Enas Taha Sayed Ali
Chemical Engineering Department, Minia University
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Professional Profile

Dr. Enas Taha Sayed is currently working as associate professor at chemical engineering department, Minia university, Egypt. In 2012, Dr Enas Taha has got her PhD in bio-electrochemical systems (Microbial Fuel Cell, MFC) from chemical and environmental engineering department, Gunma university, Gunma, Japan. During the PhD study, Dr Enas investigated the catalytic activity with *S. cerevisiae*, Baker's yeast, in a mediatorless MFC and the effect of the different anode materials on cell performance. Currently, Dr. Enas' research focuses on the fabrication of high conductive, high surface area, and biocompatible electrodes of the MFCs for simultaneous wastewater treatment and electricity generation. Dr Enas has strong background in teaching, where she involved before PhD in teaching four different courses and she instructed six different courses after PhD. Dr. Enas has a good experience in academic accreditation systems and requirements, being involved in the accreditation process at chemical engineering department at Minia University, Egypt, according to the Egyptian standards.

Main Research Experience:

1. Microbial fuel cell fabrication (membrane electrode assembly, MEA) for simultaneous wastewater treatment and electricity generation.
2. The evaluation of the different materials ex-situ (using the three electrode cell structure) and in-situ (using MEA assembly in the actual MFC application).
3. Use of different electrochemical techniques for the evaluation of different prepared catalyst such as cyclic voltammetry and other common electrochemical techniques.
4. The analysis of the XRD, FE-SEM, and FE-TEM for the characterization of the different prepared materials.
5. Preparation of graphene that could be used in very wide applications.
6. Development of non-precious catalyst for direct urea fuel cells.

Career Summary

Jan. 2003 – Dec. 2006

Teaching Assistant, Chemical Engineering Department, Faculty of Engineering, Minia University, Egypt.

Jan. 2007- May 2013

Teaching Associate, Chemical Engineering Department, Faculty of Engineering, Minia University, Egypt.

June 2013 – Aug. 2018

Assistant professor, Chemical Engineering Department, Faculty of Engineering, Minia University, Egypt.

Associate professor since Sep. 2018

Associate professor, Chemical Engineering Department, Faculty of Engineering, Minia University, Egypt.

Education

PhD Degree: Sep. 2012 (Gunma University, Japan)

Ph.D. Degree in Chemical Engineering (Bio-electrochemical systems), entitled "study on a microbial fuel cell using Baker's yeast as catalyst"

M. Sc. Degree: Nov. 2006 (Minia University, Egypt)

M.Sc. Degree in Chemical Engineering (wastewater treatment), entitled "A Design Approach for Air Flotation of an Industrial Effluent to Recover Wool Wax".

B. Sc. Degree: May 2001 (Minia University, Egypt)

B.Sc., Chemical Engineering. Final year grade (Distinction, 90.5%), Overall average grade (Very good, 81%)

Teaching experience:

During work as assistant professor, since 2013, Dr. Enas has got a deep experience instructing the following courses:

- Courses taught after PhD

1. Industrial Biochemical Engineering.
2. New and Renewable Energy.
3. Organic Engineering Industries.
4. Wastewater Treatment.
5. Fluid and Heat Transfer.
6. Pollution

Attending the following workshops:

Dr Enas has attended several workshops that are related to the teaching and research such as:

- **Ethics of Scientific Research**
Information technology center - Beni suef university, 1-2 /8/2017
- **Creating self-websites, 16-17/8/2017**
Information technology center - Minia university
- **Research in scientific databases and management of scientific references**
Information technology center - Minia university, 31/8/2017 – 3/9/2017
- **Effective presentation**
Information technology center - Minia university, 2013
- **Effective communication**
Information technology center - Minia university, 2013
- **Quality work in higher educational institutions**

- Information technology center - Minia university, 2013
- **Advanced word processing, spreadsheets, Advanced PowerPoint**
Information technology center - Minia university, 16-18/9/2014, and 21-28/9/2014

Referee in the following international journals:

1. Energy
2. Yeast
3. Applied energy

Publications:

- **International journals**

1. **Enas Taha Sayed**, T. Eissa, H. Mohamed, M. A. Abdelkareem, A. Allagui, T. Chae, Direct Urea Fuel Cells: Challenges and Opportunities, Power Source 417 (2019) 159-175.
2. H. Rezk, A. M. Nassef, A. Inayat, **Enas Taha Sayed**, M. Shahbaz, A.G. Olabi, Improving the Environmental Impact of Palm Kernel Shell through Maximizing its Production of Hydrogen and Syngas using Advanced Artificial Intelligence, science of the total environment, 658 (2018) 1150-1160.
3. M. A . Abdelkareem, W. Tanveer, **Enas Taha Sayed**, M E. Assad, A. Allagui, On the Technical Challenges Affecting the Performance of Direct Internal Reforming Biogas Solid Oxide Fuel Cells, Renewable and sustainable energy reviews, 101 (2019) 361-375.
4. AM Nassef, A Fathy, **Enas Taha Sayed**, MA Abdelkareem, H Rezk, WH Tanveer, A.G. Olabi , Maximizing SOFC Performance through Optimal Parameters Identification by Modern Optimization Algorithms, Renewable Energy 38 (2019) 458-464.
5. A. M. Nassef, **Enas Taha Sayed**, H. Rezk, M. A. Abdelkareem, C. Rodriguezg, and A.G. Olabie, Fuzzy-modeling with Particle Swarm Optimization for enhancing the production of biodiesel from Microalga, energy sources, part A: recovery, utilization, and environmental effects 41(2019) 2094-2103.
6. M A. Abdelkareem, M. E. Assad, **Enas Taha Sayed**, B. Soudan, Recent progress in the use of renewable energy sources to power water desalination plants, Desalination, 435 (2018) 97-113.
7. **Enas Taha Sayed**, Nobuyoshi Nakagawa, Critical Issues in the Performance of Yeast Based Microbial Fuel Cell, Journal of Chemical Technology and Biotechnology, 93 (2018) 1588-1594.

8. H. O. Mohamed, **Enas Taha Sayed**, H. Cho, M. Park, M. Obaid H. Y. Kim, N. A. M. Barakat, Effective strategies for anode surface modification for power harvesting and industrial wastewater treatment using microbial fuel cells, *Journal of Environmental Management*, 206 (2018) 228-235.
9. H. O. Mohamed, M. Obaid, **Enas Taha Sayed**, M. A. Abdelkareem, M. Park, Y. Liu, H. Y. Kim, N. A.M. Barakat, Graphite sheets as high-performance low-cost anodes for mediator-less microbial fuel cells using real food wastewater, *Journal of Chemical Technology and Biotechnology*, 40 (2017) 2243–2250.
10. H. O. Mohamed, M. Obaid, **Enas Taha Sayed**, M. A. Abdelkareem, M. Park, Y. Liu, H. Y. Kim, N. A.M. Barakat, Graphite sheets as high-performance low-cost anodes for mediator-less microbial fuel cells using real food wastewater, *Journal of Chemical Technology and Biotechnology*, 40 (2017) 2243–2250.
11. H. O. Mohamed, M. Obaid, **Enas Taha Sayed**, Y. Liu, J. Lee, M. Park, N. A. M. Barakat, H. Y. Kim, Electricity generation from real industrial wastewater using a single-chamber air cathode microbial fuel cell with an activated carbon anode, *Bioprocess and Biosystem Engineering* 40 (2017) 1151–1161.
12. **Enas Taha Sayed**, N. A. M. Barakat, M. A. Abdelkareem, Yeast Extract as Effective and Safe Mediator for the Baker's Yeast-Based Microbial fuel Cell, *J. of Industrial & Engineering Chemistry Research*, 54 (2015) 3116-3122.
13. M. A. Abdelkareem, **Enas Taha Sayed**, N Nakagawa, E. A. M. Abdelghani, A. A. Elzatahry, K. A. Khalil, N. A. M. Barakat, Enhancement of the Passive Direct Methanol Fuel Cells Performance by Modification of the Cathode Microporous Layer Using Carbon Nanofibers, *Fuel Cells*, 14 (2014) 607–614.
14. Emad A.M. Abdelghani, N. A. M. Barakat, **Enas Taha Sayed**, Effect of humidification conditions and adding 3 μm -size superfine powders on circulation rates of binary Geldart A–C mixtures in a semi-batch circulating fluidized bed, *J. Powder Technology* 256 (2014) 25-32.
15. M. A. Abdelkareem, M. S. Masdar, T. Tsujiguchi, N. Nakagawa, **Enas Taha Sayed**, N. AM Barakat, Elimination of toxic products formation in vapor-feed passive DMFC operated by absolute methanol using air cathode filter, *J. of Chemical Engineering* 240 (2014) 38-44.

16. **Enas Taha kasem**, Takuya Tsujiguchi, Nobuyoshi Nakagawa, “Effect of Metal Modification to Carbon Paper Anodes on the Performance of Yeast-Based Microbial Fuel Cells”, Part I: In the Case without Exogenous Mediator, *Key Engineering materials*, Vol. 534 (2013) 76-81.
17. **Enas Taha Sayed**, Takuya Tsujiguchi, Nobuyoshi Nakagawa, “Effect of Metal Modification to Carbon Paper Anodes on the Performance of Yeast-Based Microbial Fuel Cells”, Part II: In the Case with Exogenous Mediator, Methylene Blue, *Key Engineering materials*, Vol. 534 (2013) 82-87.
18. **Enas Taha Sayed**, Takuya Tsujiguchi, Nobuyoshi Nakagawa, “Catalytic activity of baker's yeast in a mediatorless microbial fuel cell”, *Bioelectrochemistry* 86 (2012) 97–101.
19. **Enas Taha Sayed**, Yuka Saito, Takuya Tsujiguchi, Nobuyoshi Nakagawa, “Catalytic activity of yeast extract in biofuel cell”, *Journal of Bioscience and Bioengineering*, 114(2012)521-525.
- **Book Chapter**
20. **Enas Taha Sayed**, Mohammad Ali Abdelkareem, *Yeast as biocatalyst in microbial fuel cells, "Old Yeasts New Questions"*, InTechOpen, 2017, <https://www.intechopen.com/books/old-yeasts-new-questions/yeast-as-a-biocatalyst-in-microbial-fuel-cell>.
- **International Conferences**
21. **Enas Taha Sayed**, Asfour, H.M., Abdelwahab, M.Z. and Hashem, M.A., *Recovery of Wool Wax from Industrial Effluent by a Batch Air Flotation Technique*, 3rd International conference on chemical and Environmental engineering, 16-18 May 2006 Military Technical College, Egypt.
22. **Enas Taha Sayed**, Yuka Saito, Takuya Tsujiguchi, Nobuyoshi Nakagawa, *Effect of Anode Material on the Performance and Characteristics of Yeast Operated Microbial Fuel Cell*, Second International Conference, ICEE, Aswan, Egypt, December, 27-29, 2010.
23. **Enas Taha Sayed**, Takuya Tsujiguchi, Nobuyoshi Nakagawa, “Metal Sputtered Carbon Paper as Anode in a Mediatorless Yeast-based Biofuel Cell”, *Third International Conference on Advanced Micro-Device Engineering, AMDE*, Kiryu, Japan, December 8, 2011.
24. **Enas Taha Sayed**, Yuka Saito, Takuya Tsujiguchi, Nobuyoshi Nakagawa, “Direct glucose fuel cell using yeast extract as a complete media for anode”, *chemical engineering meeting No. 42*, Doshisha University, Kyoto, Japan, sep. 2010.

Name: Enas Taha Sayed Ali Kasem

Nationality: Egyptian

Birth Date: Aug. 1, 1978

Gender: Female

Marital Status: Married

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