

Curriculum Vitae

Dr. Ahmed Shawky Mohammed Ghareeb



A. Personal Data:

- *Nationality:* Egyptian
- *Date of Birth:* May 8th, 1985
- *Languages:* Arabic, English, Japanese (fair)

Researchgate profile: <https://www.researchgate.net/profile/Ahmed-Shawky-7/research>

Scopus profile: <https://www.scopus.com/authid/detail.uri?authorId=55128122700>

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

ORCID: <https://orcid.org/0000-0001-7590-8548>

B. Permanent Address:

- *Institute:* Central Metallurgical R&D Institute, Advanced Materials institute
- *Department:* Nanomaterials and Nanotechnology
- *Address:* Tebbin, Helwan 11421, Cairo, Egypt
- Tel: (+20)-100-2764-377
- Fax: (+2) 02-27142451
- E-mail: phyashawky@cmrdi.sci.eg; phyashawky@gmail.com

C. Education:

Degree	Field	University and Title	Date
B. Sc.	Materials Physics	Ain Shams University Egypt	Aug. 2006
M. Sc.	Solid State Physics/Chemistry	Ain Shams University/ Hokkaido University Egypt/Japan	Nov. 2007 Aug. 2012

Ph. D.	Physical Chemistry (Nanomaterials)	Hokkaido University Japan	Dec. 2012
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D. Employment History:

Date	Organization	Position
9/2023~present	Pyramids Higher Institute of Engineering and Technology	Associate Professor and <i>Head of Basic Science department</i>
12/2022~present	Central Metallurgical R & D institute (CMRDI)	Associate Professor
11/2019~2/2021	The University of Tokyo	Senior researcher/JSPS Visiting Scholar
10/2017~10/2019	The University of Tokyo	JSPS Postdoc. Researcher
2/2015~8/2015	The University of Tokyo	Visiting Postdoc. Researcher
9/2013~Present	Central Metallurgical R & D institute (CMRDI)	Researcher
10/2009~9/2012	Hokkaido University	Res. Assist. / PhD candidate
10/2008~4/2009	Hokkaido University	Research Student/M. Sc.
11/2006~9/2013	CMRDI	Researcher Assistant

E. Personal experience

I- General Field of Specialization

1. Teaching Engineering Physics I (Properties of matter and thermodynamics) and Physics II (Electricity and Magnetism) courses for first-year undergraduate students.

2. Growth of nanocarbons, transition metal dichalcogenides, metal and metal oxides by CVD, PVD, Sol-gel, Hydrothermal/Solvothermal, Electrodeposition, Coprecipitation, Micro-emulsion and Spin coating.
3. Applications of nanomaterials as light harvesters in both energy (solar cells) and environmental (photocatalysis) applications.
4. Fabrication and evaluation of organic-inorganic hybrid perovskite solar cells.
5. Physical characterization of nanomaterials by different techniques including X-Ray Diffraction (XRD), Electron Diffraction (ED), Transmission Electron Microscopy, Scanning Electron Microscopy, energy dispersive X-ray spectroscopy (EDX), X-ray photoelectron spectroscopy (XPS), Scanning Probe Microscopy (SPM), Raman Spectroscopy, UV-Vis-NIR spectrophotometry, FT-IR Spectroscopy, Photoluminescence spectroscopy, Thermal Analysis (DSC, DTA/TG) and electrical properties measurement and evaluation (4- probe measurement and Hall effect).
6. Data analysis, interpretation and manuscript writing.
7. Project proposal preparation.
8. Conference organization and presentation.

II- Fine Specialization

- 1- Design and engineering of functional nanomaterials
2. Applications of nanomaterials as light harvesters in both energy (solar cells) and environmental (photocatalysis) applications.

III- Current research Interest

- Single wall carbon nanotubes as alternative charge carriers and electrodes in emerging solar cells.
- Nanomaterials in energy (water splitting, CO₂ reduction) and environmental (water treatment) photocatalysis.
- 2D semiconductor nanostructures as light harvesters in energy and environmental applications.
- Synthesis of new 1D and 2D van der Waals heterostructures.

F. Supervision of Scientific Thesis

1- Ph.D. Thesis

Student Name	Thesis title	University	Time	Status
Ahmed Helal Amin	Preparation and characterization of BiVO ₄ /polymer nanocomposite for advanced application	CMRDI/Mansoura	2015	Awarded in Feb. 2019

2- M.SC. Thesis

Student Name	Thesis title	University	Time	Status
Sabrin Mohamed Abdo	Preparation and Characterization of Nano Kaolinite/Nano Titania Composite for Photocatalytic Applications	Aswan/CMRDI	2013	Awarded in March 2017
Amira Gaber Mohamed Abdo	Removal of environmental pollutants using modified nanographene oxide and/or reduced graphene oxide nanocomposites	Mansoura/CMRDI	2015	Awarded in March 2019
Islam Mohamed Hegazy	Advanced nanostructured photocatalyst for recycling CO ₂ into renewable fuels under solar light	Helwan	2015	Awarded in March 2019

Rabea Mohamed Yousuf	Nanostructured materials for development of emerging photovoltaics	Ain Shams	2017	Awarded in Feb. 2023
Mohamed Rabigh	Carbon based materials for energy and environmental applications	Cairo	2017	Ongoing

G. Awards and Honors

1- Local

- 1- Short Term Postdoctoral Fellow, Government of Egypt (2014).
- 2- Partnership and Ownership Agreement for young researchers, Government of Egypt (2007).

2- International

- 1- JSPS long-term invitational fellowship, JSPS L20503 (2020)
- 2- JSPS postdoctoral fellowship, JSPS grant-in-aid for postdoctoral researchers, P17364 (2017)
- 3- PhD fellowship, Asian graduate School of Chemistry and Materials Science (AGS) and Hokkaido University global center of Excellence scholarship (2009)

H. Contribution in Research and Development Projects

Participating in several industrial projects in the fields of Solar cells and photocatalysis

Project Title	Organization/Role	FY
Novel MXene encrypted sodium based layered oxide nanocomposite cathode materials for energy storage	Project for Applied sciences, Science Technology Development Fund Cairo,Egypt. member team project.	~65000 USD
Development of high performance and stable emerging solar cell with CNT derived film	JSPS long term invitational fellowship # L20503/PI	~2,000 USD
Fabrication of innovative perovskite-type solar cells with carbon nanotube film.	JSPS grant for postdoctoral researchers, grant No. 17F17364/PI	~20,000 USD
Preparation of Transition Metal-Doped ZnO/CNT Nanocomposites as Enhanced Photocatalyst for Industrial Wastewater Remediation.	Deanship of Scientific Research (DSR) at King Abdulaziz University, Jeddah, grant No. G-114-130-1438/Co-I	~20,000 USD
An environmental friendly systematic strategy for eliminating red tide algal cells and toxins from marine and freshwater sources.	Egyptian-US joint research project No. 229/Co-I	100,000 USD
Synthesis and Characterization of Multi-functional MgO Nanostructures for Environmental Applications.	Deanship of Scientific Research (DSR) at King Abdulaziz University, Jeddah, grant No. G-214-130-1436/Co-I	~20,000 USD
Influence of doped palladium nanoparticles on the photocatalytic performance of Zinc indium sulfide species in the synthesis of methanol from photocatalytic reduction of carbon dioxide.	Deanship of Scientific Research (DSR) at King Abdulaziz University, Jeddah, grant No. 130-649- D 1435/Co-I	~20,000 USD

Full project list can be given upon request

I. Training Activities:

Design and conducted

Place	Type	Time
CMRDI	Training courses for Science and applications of nanomaterials	2015-2017 (July-Aug)
CMRDI	Engineering undergraduate students The New Trends of Nanotechnology	Aug. 22 nd , 2017
CMRDI	Workshop Nanotechnology for sustainable development workshop	Oct. 25 th , 2017
CMRDI	Synthesis, Characterization and applications of nanomaterials	6 th Sept. 2015

J. Fellowship and scholarship:

Place	Position	Time
Japan, The University of Tokyo, Graduate School of Engineering	(JSPS) invited Scholar	4/2020 (11 months)

Japan, The University of Tokyo, Graduate school of Engineering	(JSPS) Postdoctoral researcher	10/2017 (2 years)
Japan, The University of Tokyo, Graduate school of Engineering	(Egyptian government) short-term postdoctoral fellowship	2/2015 (6 months)
Japan, Hokkaido University, Graduate School of Science	GCOE Advanced graduate School for Materials Science and Hokkaido University Scholarship for PhD students	10/2009 (3 years)
Japan, Hokkaido University, Graduate School of Science	(Egyptian government) Partnership and Ownership Agreement (ParOwn)for young researchers	10/2008 (6 months)

K. Professional Society Affiliations (Member)

- **Japanese Chemical Society (2009-2012)**
- **Fullerene, Nanotube, and Graphene Society**
- **Egyptian Syndicate of Scientists**
- **Materials Research Society**
- **Nanoscience community**

L. Reviewer for Scientific Journals:

Materials today Sustainability, Molecules, Inorganic Chemistry Communication, Journal of Hazardous Materials, Journal of Alloys and Compounds, Arabian Journal of Chemistry, Journal of Environmental Chemical Engineering, Environmental pollution, Composites Part B, Catalysis Today, ACS applied nanomaterials, Chemical Engineering Journal, Applied Nanoscience, Applied Surface Science, Journal of the Taiwan Institute of Chemical Engineers, Materials and Design, Surfaces and Interfaces, Fuel processing Technology, Catalysis Letters, Catalysis Surveys from Asia, Chemistry select, Diamond and Related Materials, Crystal Research and Technology, Ceramics International,

Materials Research bulletin, Materials Research Express, International journal of Environmental Science and Technology, Journal of Nanomaterials, Nanoscience and Nanotechnology Letters, Physica B, Journal of Inorganic and Organometallic Polymers and Materials, Journal of Physics and Chemistry of Solids, International Journal of Nanoparticles, Egyptian journal of Chemistry, Journal of Electrical Engineering, Revista Mexicana de Ingeniería Química.

M. List of Publications

(‡) indicate the co-first author and (*) indicate the corresponding author

Scopus (H-index: 35, Citations: 3096) :
<https://www.scopus.com/authid/detail.uri?authorId=55128122700>

Google scholar (H-index 36, Citations: 3324) :
https://scholar.google.com/citations?hl=en&user=ZJfqefQAAAAJ&view_op=list_works&sortby=pubdate

1. Gamal Hassan Sewify, **A. Shawky**^{*}, Solvothermal-based growth of iron phosphate sub-micron rods supported with lithium manganese oxide nanoparticles for efficient photocatalytic oxidation of tetracycline antibiotic under visible light irradiation, *Ceramics International* (2025), in press, DOI: 10.1016/j.ceramint.2024.12.123.
 2. E. S. Alsolami, I. A. Mkhaliid, **A. Shawky**^{*}, M. A. Hussein, Metal oxide-combined sol-gel synthesized ceria nanoparticles: An operative photocatalyst for visible-light-driven mineralization of ciprofloxacin antibiotic in water, *Journal of Physics and Chemistry of Solids* 195 (2024) 112289
 3. R. M. Mohamed, **A. Shawky**^{*}, Z. I. Zaki, Exploring silver oxide-loaded yttrium vanadate nanocomposite for visible-light-driven photooxidation of ciprofloxacin antibiotic in water, *Ceramics International* 50 (2024) 39458-39466.
 4. R. M. Mohamed, **A. Shawky**^{*}, Rapid and recyclable photocatalytic reduction of hexavalent chromium ions over copper oxide-decorated
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- hydrothermally-prepared tungsten trioxide nanorods under visible-light. *Journal of Water Process Engineering* 57 (2024) 104612.
5. N.Y. Tashkandi, **A. Shawky***, Enhanced visible-light photocatalytic remediation of atrazine over CuAl_2O_4 -modified BaSnO_3 nanoplatelets synthesized by sol-gel route, *Journal of Alloys and Compounds* 968 (2023) 171826.
 6. Gamal Hassan Sewify, **A. Shawky***, Enhanced photoreduction of mercury (II) ions over MnCo_2O_4 -modified wrinkled BaSnO_3 nanosheets prepared by solvothermal method under visible light, *Journal of Environmental Chemical Engineering* 11 (2023) 110720.
 7. H. M. Alanazi, M. AlHaddad, **A. Shawky***, R. M. Mohamed, CuO-coupled CeO_2 nanocubes: simple preparation and efficient visible-light mineralization of atrazine with considerable reusability, *Journal of Materials Science: Materials in Electronics* 34 (2023) 1430, 1/11.
 8. Tariq R. Sobahi, **A. Shawky***, Yttrium vanadate coupled with cobalt ferrite nanocrystals for enhanced photocatalytic H_2 production under visible light irradiation *Ceramics International* 49 (2023) 29879-29886.
 9. E. S. Alsolami, I. A. Mkhaliid, **A. Shawky***, M. A. Hussein, Sol-gel assisted growth of nanostructured NiS/CeO_2 p-n heterojunctions for fast photooxidation of ciprofloxacin antibiotic under visible light, *Applied Nanoscience* 13 (2023) 6445–6455.
 10. Gamal Hassan Sewify, **A. Shawky***, Solvothermal-based synthesis of barium stannate nanosheets coupled with copper manganate nanoparticles for efficient photooxidation of tetracycline under visible light, *Journal of colloids and Interface Science*, 648 (2023) 348–356.
 11. Tariq R. Sobahi, **A. Shawky***, Promoted photocatalytic H_2 evolution over $\text{NiS}/\text{BaSnO}_3$ nanocomposite photocatalyst prepared by modified sol-gel method, *Surfaces and Interfaces* 39 (2023) 102979.
 12. R. M. Mohamed, **A. Shawky***, Ag_2O -decorated WO_3 Nanorods Synthesized by Soft-template-aided Solvothermal Route for Endorsed Visible-light Photoreduction of CO_2 Into Methanol, *Journal of Environmental Chemical Engineering* 11 (2023) 110167.
 13. R. M. Mohamed, **A. Shawky***, Improved photocatalytic oxidation of ciprofloxacin by NiS -coupled WO_3 nanorods synthesized by solvothermal
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- method under visible light, *Ceramics International* 49 (2023) 217862–21870.
- 14.E. S. Alsolami, I. A. Mkhalid, **A. Shawky***, M. A. Hussein, Efficient visible-light photooxidation of ciprofloxacin antibiotic over CoTiO₃-impregnated 2D CeO₂ nanocomposites synthesized by a sol-gel-based process, *Materials Science in Semiconductor Processing* 162 (2023) 107487.
 - 15.E. S. Alsolami, I. A. Mkhalid, **A. Shawky***, M. A. Hussein, AgVO₃-anchored 2D CeO₂ nanocrystals prepared by solution process for visible-light-driven photooxidation of ciprofloxacin antibiotic in water, *Journal of Photochemistry and Photobiology A: Chemistry* 441 (2023) 114725.
 - 16.H. M. Alanazi, M. AlHaddad, **A. Shawky***, R. M. Mohamed, Promoted photocatalytic mineralization of atrazine over visible-light active Ag₂O/CeO₂ nanocomposites with sustainable reusability, *Materials Research Bulletin* 164 (2023) 112248.
 - 17.H. M. Alanazi, M. AlHaddad, **A. Shawky***, R. M. Mohamed, Platinum oxide-supported sol-gel prepared CeO₂ nanocubes for promoted photodestruction of atrazine under visible light irradiation, *Catalysis Communications* 177 (2023) 106646.
 - 18.M. M. M. Mostafa , **A. Shawky*** , S. F. Zaman, K. Narasimharao, M. Abdel Salam, A. A. Alshehri, N. H. Khadry, S. Al-Faifi, A. D. Chowdhury, Enhanced and recyclable CO₂ photoreduction into methanol over S-scheme PdO/GdFeO₃ heterojunction photocatalyst under visible light, *Journal of Molecular Liquids* 377 (2023) 121528.
 - 19.R. M. Mohamed, **A. Shawky***, Promoted visible-light-driven H₂ production over hydrothermally synthesized YVO₄ nanorods coupled with Pt/AgInS₂ nanospheres, *Ceramics International* 49 (10) (2023) 15015–15023.
 - 20.R. M. El-Shishtawy, **A. Shawky***, H.S. Alorfi, M.A. Hussein, R. M. Mohamed, Efficient visible-light-driven H₂ evolution over sol-gel processed Bi₂WO₆ nanocrystals anchored with Ag₂O support, *Ceramics International* 49 (2023) 14274–14280.
 - 21.R. M. El-Shishtawy, **A. Shawky***, R. M. Mohamed, An efficient visible-light-driven photoconversion of nitrobenzene to aniline over PtO-decorated
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- WO₃ nanocrystals prepared by a soft template-based method, *Journal of the Taiwan Institute of Chemical Engineers* 142 (2023) 104634.
22. A. S. Basaleh, **A. Shawky***, M. H. H. Mahmoud, CdO-supported ZrO₂ heterojunctions: facile synthesis and rapid visible-light oxidation of atrazine herbicide with superb recyclability, *Nanotechnology* 34 (2023) 035701
23. M. M. M. Mostafa, **A. Shawky***, S. F. Zaman, K. Narasimharao, M. Abdel Salam, A. A. Alshehri, N. H. Khday, S. Al-Faifi, A. D. Chowdhury, Visible-Light-Driven CO₂ Reduction into Methanol Utilizing Sol-Gel-Prepared CeO₂-Coupled Bi₂O₃ Nanocomposite Heterojunctions, *Catalysts* 12 (2022) 1479.
24. M. Mokhtar, **A. Shawky***, Enhanced visible-light-driven H₂ evolution over sol-gel prepared Nd₂O₃ supported with PtO nanoparticles, *Ceramics International* 48 (2022) 36670–36667.
25. M. R. Alotaibi, **A. Shawky***, Z. I. Zaki, Mesoporous MoS₂ incorporated zirconia nanocomposites: Simple synthesis, characterization and photocatalytic desulfurization of thiophene under visible light, *Ceramics International* 48 (2022) 36697–36705.
26. M. Alhaddad, **A. Shawky***, Z. I. Zaki, Photocatalytic Oxidative Desulfurization of Thiophene by Exploiting a Mesoporous V₂O₅-ZnO Nanocomposite as an Effective Photocatalyst, *Catalysts* 12 (2022) 933 (*Editor's Choice*).
27. S. M. Abdo, S. I. El-Hout, **A. Shawky***, M. N. Rashed, S. M. El-Sheikh, Visible-light-driven photodegradation of organic pollutants by simply exfoliated kaolinite nanolayers with enhanced activity and recyclability, *Environmental Research* 214 (2022) 113960.
28. M. W. Kadi, S. I. El-Hout, **A. Shawky***, R. M. Mohamed, Enhanced mercuric ions reduction over mesoporous S-scheme LaFeO₃/ZnO p-n heterojunction photocatalysts, *Journal of the Taiwan Institute of Chemical Engineers* 138 (2022) 104476.
29. **A. Shawky***, R. M. Mohamed, S-scheme heterojunctions: emerging designed photocatalysts toward green energy and environmental remediation redox reactions, *Journal of Environmental Chemical Engineering* 10 (2022) 108249
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30. W. T. Alsaggaf, **A. Shawky***, M.H.H.Mahmoud, S-scheme CuO/ZnO p-n heterojunctions for endorsed photocatalytic reduction of mercuric ions under visible light, *Inorganic Chemistry Communications* 143 (2022) 109778.
31. R. M. Youssef, A.M.S.Salem, **A. Shawky***, S. Ebrahim, M. Soliman, M. S. A. Abdel-Mottaleb, S. M. El-Sheikh, Solution-processed quantum dot SnO₂ as an interfacial electron transporter for stable fully-air-fabricated metal-free perovskite solar cells, *Journal of Materiomics* 8 (2022) (6), 1163-1174.
32. **A. Shawky***, N.Y. Tashkandi, Visible-light photooxidation of ciprofloxacin utilizing metal oxide incorporated sol-gel processed La-doped NaTaO₃ nanoparticles: A comparative study, *Environmental Research* 213 (2022) 113718
33. S. Z. Alsheheri, **A. Shawky***, W. T. Alsaggaf, Z. I. Zaki, Visible-light responsive ZnSe-anchored mesoporous TiO₂ heterostructures for boosted photocatalytic reduction of Cr (VI), *Nanotechnology* 33 (2022), 305701
34. **A. Shawky***, Soad Z. Alsheheri, Wejdan T.Alsaggaf, L.A.Al-Hajji, Z.I. Zaki, Promoted hexavalent chromium ion photoreduction over visible-light active RuO₂/TiO₂ heterojunctions prepared by solution process, *Journal of Photochemistry and Photobiology A: Chemistry* 429 (2022) 113906.
35. **A. Shawky***, Soha Albukhari, Design of Ag₃VO₄/ZnO nanocrystals as visible-light-active photocatalyst for efficient and rapid oxidation of ciprofloxacin antibiotic waste, *Journal of the Taiwan Institute of Chemical Engineers* Vol. 133 (2022) 104268.
36. **A. Shawky***, R.M. Mohamed, N. Alahmadi, Z.I. Zaki, Enhanced photocatalytic reduction of hexavalent chromium ions over S-Scheme based 2D MoS₂-supported TiO₂ heterojunctions under visible light, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* Vol. 641 (2022) 128564.
37. S. Seo, K. Akino, J-S. Nam, **A. Shawky**, H-S. Lin, H. Nagaya, E. I. Kauppinen, R. Xiang, Y. Matsuo, I. Jeon, S. Maruyama, Multi-Functional MoO₃ Doping of Carbon-Nanotube Top Electrodes for Highly Transparent and Efficient Semi-Transparent Perovskite Solar Cells, *Advanced Materials Interfaces* 9 (2022) 2101595
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38. R.M. Mohamed*, **A. Shawky***, Visible-light-driven hydrogen production over ZIF-8 derived $\text{Co}_3\text{O}_4/\text{ZnO}$ S-scheme based p-n heterojunctions, *Optical Materials* Vol. 124 (2022) 112012.
39. **A. Shawky***, N. Alahmadi, R.M. Mohamed, Z.I. Zaki, Bi_2S_3 -sensitized TiO_2 nanostructures prepared by solution process for highly efficient photoreduction of hexavalent chromium ions in water under visible light, *Optical Materials* Vol. 124 (2022) 111964.
40. **A. Shawky***, H. Alshaikh, Cobalt ferrite-modified sol-gel synthesized ZnO nanoplatelets for fast and bearable visible light remediation of ciprofloxacin in water, *Environmental Research* Vol. 205 (2022) 112462.
41. H. Alshaikh, **A. Shawky***, L. S. Roselin, Templated synthesis of CuCo_2O_4 -modified g- C_3N_4 heterojunctions for enhanced photoreduction of Hg^{2+} under visible light, *Journal of the Taiwan Institute of Chemical Engineers* Vol. 123 (2022) 104114.
42. H. Alshaikh, **A. Shawky***, L. S. Roselin, Promoted visible-light photocatalytic reduction of Hg^{2+} over CuAl_2O_4 -decorated g- C_3N_4 nanoheterojunctions synthesized by solution process, *Journal of Environmental Chemical Engineering* Vol. 9 (2021) (6) 106778.
43. **A. Shawky***, S. M. Albukhari, N. Y. Tashkandi, Z. I. Zaki, Photoactivity enhancement of La-doped NaTaO_3 nanocrystals by CuO decoration toward fast oxidation of Ciprofloxacin under visible light, *Ceramics International* Vol. 47 (2021) 28884–28891.
44. M. S. Soltan, N. Ismail*, H. M. A. Hassan*, **A. Shawky***, E. A. El-Sharkawy, R. M. Youssef, S. Maruyama, R. F. M. El-Shaarawy, Copper nanoparticle-decorated RGO electrodes as hole-transport-layer of perovskite solar cells enhancing efficiency and shelf stability, *Journal of Materials Research and Technology* Vol. 14 (2021) 631–638.
45. S. M. Albukhari, **A. Shawky***, $\text{Ag}/\text{Ag}_2\text{O}$ -decorated sol-gel-processed TeO_2 nanojunctions for enhanced H_2 production under visible light, *Journal of Molecular Liquids* Vol. 336 (2021) 116870.
46. **A. Shawky***, S. M. Albukhari, N. Y. Tashkandi, Z. I. Zaki, Sol-gel synthesis of photoactive $\text{Ag}_2\text{O}/\text{Y}_3\text{Fe}_5\text{O}_{12}$ nanojunctions for promoted degradation of ciprofloxacin under visible light, *Applied Nanoscience* Vol. 11 (2021), (7) 2103–2112.
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47. **A. Shawky***, S. M. Albukhari, M. S. Amin, Z.I. Zaki, Mesoporous V₂O₅/g-C₃N₄ nanocomposites for promoted mercury (II) ions reduction under visible light, *Journal of Inorganic and Organometallic Polymers and Materials* Vol. 31 (2021) 4209–4221.
48. **A. Shawky***, N. Y. Tashkandi, S. M. Albukhari, Z. I. Zaki, Ag₂O/BaFe₁₂O₁₉ nanoheterojunctions for rapid photoelimination of atrazine herbicide in water under visible light, *Ceramics International* Vol. 47 (2021) 25721-25728.
49. M. Al-Haddad*, **A. Shawky***, I. A. Mkhaldid, Highly active ZIF-8 derived CuO@ZnO p-n heterojunction nanostructures for fast visible-light-driven photooxidation of antibiotic waste in water, *Journal of the Taiwan Institute of Chemical Engineers* Vol 123C (2021) 163–171.
50. A. S. Basaleh, **A. Shawky***, Z. I. Zaki, La-doped NaTaO₃ nanoparticles: sol-gel synthesis and synergistic effect of CdO decoration toward efficient visible-light degradation of ciprofloxacin in water, *Ceramics International* Vol. 47 (2021) (15) 21350–21357.
51. H. Alshaikh, **A. Shawky***, R.M. Mohamed*, J. G. Knight, L. S. Roselin, Solution-based synthesis of Co₃O₄/ZnO p-n heterojunctions for rapid visible-light-driven oxidation of ciprofloxacin, *Journal of Molecular Liquids* Vol. 334 (2021) 116092.
52. **A. Shawky**, J.-S. Nam, K. Kim, J. Han, J. Yoon, S. Seo, C. S. Lee, R. Xiang, Y. Matsuo, H. M. Lee, S. Maruyama, I. Jeon, Controlled Removal of Surfactants from Double-Walled Carbon Nanotubes for Stronger p-Doping Effect and its Demonstration in Perovskite Solar Cells, *Small Methods* Vol. 5 (2021) 2100080, *selected as front cover*.
53. A. S. Basaleh, **A. Shawky***, Z. I. Zaki, Visible light-driven photodegradation of ciprofloxacin over sol-gel prepared Bi₂O₃-modified La-doped NaTaO₃ nanostructures, *Ceramics International* Vol. 47 (2021) 19205–19212.
54. W. Jang, B. G. Kim, S. Seo, **A. Shawky**, M. S. Kim, K. Kim, B. Mikladal, E. I. Kauppinen, Shigeo Maruyama, I. Jeon, D. H. Wang, Strong dark current suppression in flexible organic photodetectors by carbon nanotube transparent electrodes, *Nano Today* Vol. 37 (2021) 101081.
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- 55.M. Alhaddad, **A. Shawky***, La-doped NaTaO₃ perovskite nanocrystals supported with α -Fe₂O₃ for sustainable visible-light-driven elimination of ciprofloxacin in water, *Ceramics International* Vol. 47 (2021) 10688.
- 56.M. Alhaddad, **A. Shawky***, Pt-decorated ZnMn₂O₄ nanorods for effective photocatalytic reduction of CO₂ into methanol under visible light, *Ceramics International* Vol. 47 (2021) 9763.
- 57.M. Alhaddad, **A. Shawky***, Z. I. Zaki, Reduced graphene oxide-supported PbTiO₃ nanospheres: Improved ceramic photocatalyst toward enriched photooxidation of thiophene by visible light, *Molecular Catalysis*, Vol. 499 (2021) 111301.
- 58.S. I. El-Hout, S. G. Mohamed, A. Gaber, S. Y. Attia, **A. Shawky**, S.M. El-Sheikh, High electrochemical performance of rGO anchored CuS nanospheres for supercapacitor applications, *Journal of Energy Storage*, Vol. 34 (2021) 102001.
- 59.I. A. Mkhallid, **A Shawky***, Cu-supported Cu₂O nanoparticles: Optimized photodeposition enhances the visible light photodestruction of atrazine, *Journal of Alloys and Compounds*, Vol. 853 (2021) 157040.
- 60.C. Lee, S-W. Lee, S. Bae, **A. Shawky**, V. Devaraj, A. Anisimov, E. I. Kauppinen, J-W. Oh, Y. Kang, D. Kim, I. Jeon, S. Maruyama, H-S. Lee, Carbon Nanotube Electrode-Based Perovskite–Silicon Tandem Solar Cells, *Solar RRL* Vol. 4 (2020) 2000353.
- 61.S. I. El-Hout, S.M. El-Sheikh, A. Gaber, **A. Shawky**, A. I. Ahmed, Highly efficient sunlight-driven photocatalytic degradation of malachite green dye over reduced graphene oxide-supported CuS nanoparticles, *Journal of Alloys and Compounds*, Vol. 849 (2020) 156573.
- 62.M. Alhaddad, **A. Shawky***, CuS assembled rGO heterojunctions for superior photooxidation of atrazine under visible light, *Journal of Molecular Liquids*, Vol. 318 (2020) 114377.
- 63.Il Jeon[‡], **A. Shawky[‡]**, Seungju Seo, Yang Qian, Anton S. Anisimov, Esko Kauppinen, Yutaka Matsuo, and Shigeo Maruyama, Carbon nanotubes to outperform metal electrodes in perovskite solar cells via dopant engineering and hole-selectivity enhancement, *Journal of Materials Chemistry A*, Vol. 8 (2020) 11141-11147.
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N. Patents:

- Kei Murkoshi, Satoshi Yasuda, **Ahmed Shawky**, *Method for producing carbon nanotube*, US patent, Pub. No.: WO/2011/111791, Pub. Date: 2011.9.15

O. Conferences:

1- Organizer/Scientific Committee

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1. Workshop on Advanced Materials for Sustainable Development, Holiday inn hotel (Cairo, 16/6/2021)
 2. Nanotechnology Challenges, Pyramiza hotel (Cairo, 17-20/4, 2014)
 3. Egyptian-Italian Workshop on Materials for Renewable energy, Pyramiza hotel (Cairo, 17-19/10/2016)
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2- Presenter

A- Oral presentations (last 5 years)

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1. **Ahmed Shawky**, *Nanostructured carbon Allotropes for sustainable Perovskite-based Solar Cells*, **4th international world energy conference** (December 6~8, 2024, Kayseri, Turkey)
 2. **Ahmed Shawky**, *Nanocarbon Allotropes-coupled Nanomaterials for High*
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Performance and Stable Perovskite-based Solar Cells, Solar cells current technologies and new trends workshop, (Year: 2023, Month: 2, Cairo University NILES, Cairo, Egypt).

3. Ahmed Shawky, *Nanocarbon Allotropes for High Performance and Stable Perovskite-based Solar Cells, 4th International Research Institute Conference of the Advanced Materials Technology and Mineral Resources*, (Year: 2023, Month: 2, National Research Center, Cairo, Egypt).
4. Ahmed Shawky, *Carbon Nanotubes: A Superior Alternative Electrodes in High Performance and Stable Emerging Perovskite-based Solar Cells, Regional Workshop on “Advanced Materials and Manufacturing Technologies for Africa and Middle East Development”* (Year: 2022, Month: 6, Holiday inn hotel, Cairo, Egypt).
5. Ahmed Shawky, *Sol-gel synthesis of oxide-based nanostructures for water treatment via photocatalytic oxidation under visible light, Workshop on Advanced Materials for Sustainable Development*, (Year: 2021, Month: 6, Holiday inn hotel, Cairo, Egypt)
6. Ahmed Shawky, Il Jeon, Rong Xiang, Taiki Inoue, Yutaka Matsuo, Shigeo Maruyama (invited), *High Performance Carbon Nanotube–Laminated Perovskite Solar Cells, 235th ECS Meeting*, (Year:2019, Month: 5, Dallas, US).
7. Ahmed Shawky, Rong Xiang, Il Jeon, Taiki Inoue, Yongjia Zheng, Shohei Chiashi, Esko I. Kauppinen, Yutaka Matsuo, Shigeo Maruyama, *Improving Single walled Carbon Nanotubes via Coaxial Wrapping and Durable Doping: Toward Applicable Devices, ATI Nanocarbon Zao meeting*, (Year:2018, Month: 8, Zao, Japan).

B- Poster presentations (last 5 years)

1. A. Shawky, K. Akino, T. Inoue, E. Kauppinen, S. Chiashi, H. Sai, T. Matsui, S. Maruyama, *Utilization of transparent SWCNT films in 4-terminal perovskite-silicon tandem solar cells, The 59th Fullerenes-Nanotubes-Graphene General Symposium (online)* (Year: 2020, Month: 9, Kyushu University, Japan)
2. Ahmed Shawky, Il Jeon, Esko I. Kauppinen, Shigeo Maruyama, Yutaka Matsuo, *Li-Endohedral Fullerenes on Top of Laminated Carbon Nanotube Electrode-based Perovskite solar Cells Induce Exceptional Stability, Twentieth international conference on the science and applications of nanotubes (NT19)* (Year: 2019 Month: 7, Würzburg, Germany).

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3. A. Shawky*, R.M Mohamed, *CNT Supported Mn-doped ZnO Nanoparticles as Competent Visible Light- Active Photocatalyst, Twentieth international conference on the science and applications of nanotubes (NT19), (Year: 2019 Month: 7, Würzburg, Germany).*
 4. Ahmed Shawky, Il Jeon, Hiroshi Ueno, Hiroshi Okada 1, Esko I. Kauppinen, Shigeo Maruyama, and Yutaka Matsuo, *Enhancing the Stability of Perovskite Solar Cells via Lithium-ion Endohedral Fullerenes on Top of Laminated Carbon Nanotube Electrodes, The 56th Fullerenes-Nanotubes-Graphene General Symposium, and CIAiS International Symposium 2019 (Year 2019, Month 3, The University of Tokyo, Japan)*
 5. Ahmed Shawky, Il Jeon, Rong Xiang, Taiki Inoue, Yongjia Zheng, Yang Qian1, Shohei Chiashi1, Esko I. Kauppinen, Yutaka Matsuo, Shigeo Maruyama, *Cultivating SWCNTs by Robust Doping and Coaxial Wrapping: Toward Applicable Devices The 9th A3 Symposium on Emerging Materials: Nanomaterials for Energy and Electronics, (Year 2018, Month 10, Kyoto University, Japan)*
 6. Ahmed Shawky, Il Jeon, Esko I. Kauppinen, Yutaka Matsuo, Shigeo Maruyama, *SWNT films doped with Trifluoromethanesulfonic acid as durable electrode in perovskite solar cells, The 55th Fullerenes-Nanotubes-Graphene General Symposium, (Year 2018, Month 9, Tohoku University, Japan)*
 7. A. Shawky*, R.M Mohamed, *CNT Supported Mn-doped ZnO Nanoparticles as Efficient Visible Light- Active Photocatalyst for Malachite Green Dye Degradation, The 54th Fullerenes-Nanotubes-Graphene General Symposium, (Year 2018, Month 3, The University of Tokyo, Japan)*
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References:

1. **Prof. Shigeo Maruyama**, Department of Mechanical Engineering, The University of Tokyo, Japan,
E-mail: maruyama@photon.t.u-tokyo.ac.jp
2. **Prof. Taha Mattar**, Professor of Materials, Galala University, Egypt,
E-mail: tahamattar23@gmail.com, taha.mattar@gu.edu.eg
3. **Prof. Kei Murakoshi**, Division of Chemistry, Graduate School of Science, Hokkaido University, Japan,

E-mail: kei@sci.hokudai.ac.jp.

4. **Prof. Farid. A. Harraz**, Promising Centre for Sensors and Electronic Devices (PCSED), Advanced Materials and Nano-Research Centre, Najran University, P.O. Box: 1988, Najran, 11001, Saudi Arabia,
E-mail: faharraz@nu.edu.sa