C.V.	السيرة الذاتية

السيرة الذاتية

Curriculum Vita

Name (Arabic)	أ.د. عصام الدين مصطفى حسين فرعلي	الاسم (عربي)
Name (English)	Prof. Dr. Essam M. Hussein	الاسم (إنجليزي)
Academic Title	Professor of Organic Chemistry	الوظيفة

City	Postal Code	Country
Assiut	71516	Egypt

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University	Country	College	Department
Assiut University	Egypt	Science	Chemistry

Nationality	Date of Birth	Country of Birth
Egypt	June 30, 1978	Egypt

LANGUAGES	
Arabic	English
Major field	**Specialization field**
Organic Chemistry	Synthetic Organic Chemistry

PhD THESIS TITLE

Synthesis and Reactions of Some New Spiroheterocycles

MSc THESIS TITLE

Design, Synthesis and Reactions of Some New Spiroheterocycles

KEYWORDS THAT DESCRIBE MY FIELD

1,3-Dipolar cycloaddition	Spiroheterocycles	DFT indices	Fluorescence

QUALIFICATIONS

Degree	Date awarded	Institute/University	Country
Bachelor's degree in chemistry (BSc)	1999	Faculty of Science, Assiut University	Egypt
Master's degree in chemistry, (Organic Chemistry (MSc)	2006	Faculty of Science, Assiut University	Egypt
Ph. D. in Chemistry, (Organic Chemistry)	2009	Faculty of Science, Assiut University	Egypt

WORK EXPERIENCE

Date: From - To	Position	Institute/University	Country
1999-2006	Demonstrator	Assiut University	Egypt
2006-2009	Lecturer	Assiut University	Egypt
2009-2015	Assistant Professor	Assiut University	Egypt
2013-2016	Assistant Professor	Umm Al-Qura University	Saudi Arabia
2015-2021	Associate Professor	Assiut University	Egypt
2016-2025	Associate Professor	Umm Al-Qura University	Saudi Arabia
2021-yet	Full Professor	Assiut University	Egypt

RESEARCH INTEREST and SCIENTIFIC ACTIVITY

1. Design and synthesis of biologically active heterocyclic compounds.
2. 1,3-Dipolar cycloaddition (32CA).
3. Physical Organic Chemistry.
4. Theoretical Chemistry.
5. Photophysical Chemistry.
6. Multi-component reactions (MCR's).
7. Green Chemistry.

TRAINING PROGRAMS

1. Writing the Self-Study Report: Umm Al-Qura University, May 11, 2025.
2. Measuring Program Learning Outcomes: Umm Al-Qura University, May 7, 2024.

3. Measuring Course Learning Outcomes: Umm Al-Qura University, May 6, 2024.
4. Designing and Constructing an End-of-Program Test: Umm Al-Qura University, January 17, 2024.
5. National Index for Data Management: Umm Al-Qura University, January 15, 2024.
6. Design and Production of Digital Content: Alexandria University, July 14-15, 2021.
7. ProQuest® Online Database: Umm Al-Qura University, April 29, 2020.
8. Protection Ambassador-Corona virus: Umm Al-Qura University, June 6, 2020.
9. Executive Leadership Development: Alexandria University, July 8-9, 2019.
10. Leadership and Strategic Thinking: Alexandria University, July 9-10, 2019.
11. University Laws and Regulations: Alexandria University, June 26-27, 2019.
12. E-Exams: Alexandria University, June 12, 2019.

OTHER ACTIVITIES

1. Refereeing Articles:

I am a referee in the following journals:

1. ACS Omega [ISSN: 2470-1343 (print); 2470-1343 (web)]
2. Research on Chemical Intermediates [ISSN: 0922-6168 (print), ISSN: 1568-5675 (Online)].
3. ChemistrySelect [ISSN: 2365-6549].
4. Synthetic Communications [ISSN: 0039-7911 (print); 1532-2432 (web)]
5. Medicinal Chemistry Research [ISSN: 1054-2523 (print), ISSN: 1554-8120 (Online)].
6. International Journal of Applied Ceramic Technology [ISSN: 1546-542X (print), ISSN: 1744-7402 (Online)].
7. Polycyclic Aromatic Compounds [ISSN: 1040-6638].
8. Journal of Heterocyclic Chemistry (JHC) [ISSN: 1943-5193].
9. Archiv der Pharmazie [ISSN: 0365-6233(Print), ISSN: 1521-4184 (Online)].
10. Phosphorus, Sulfur, and Silicon and the Related Elements [ISSN: 1042-6507].
11. Chemistry Journal (CJ) [ISSN 2049-954X].
12. International Journal of Chemistry and Material Science.
13. Letters in Organic Chemistry [ISSN: 1875-6255].

2. Journal Editorial Boarding:

1. Associate editor of Journal of Umm Al-Qura University for Applied Sciences (JUAS).
2. **I am a member of the editorial board of the following journals:**
   a. Chemistry Journal (CJ) [ISSN 2049-954X].
   b. Heterocyclic Letters (*HL*) [ISSN: 2231–3087(Print), ISSN: 2230-9632 (Online)].

c. International Journal of Chemistry and Material Science.

3. Projects:

1. I participated as *Vice-manager* of the Faculty of Science Development Project (FASCDP) (Faculty of Science, Assiut University 1/1/2008-30/6/2011). Budget: Universities Development Funding Project (UDFP).
2. Thermally reversible photochromic di- and tetrahydroindolizines: Synthesis, Characterization and Kinetic studies. Project No. 43405029, Umm Al-Qura University, (Started in April 2016-2018).
3. Synthesis of photochromic di and tetrahydroindolizines with multiaddressable photophysical properties and applications. Project No. 15-SCI-3-1-00-10, Deanship of the Scientific Research (DSR), Umm Al-Qura University, (Started in March 2017-2019).
4. Design and synthesis of novel thiazolidinedione derivatives for anti-diabetic, antioxidant and antiglycation activities. Project No. 18-SCI-1-01-0009, Deanship of the Scientific Research (DSR), Umm Al-Qura University, (Started in March, 2019-2021).
5. Development of advanced Nano-Hybrids with enhanced medicinal efficacy, project no. 18-SCI-1-01-0024, Deanship of the Scientific Research (DSR), Umm Al-Qura University, (Started in March, 2019-2021).
6. Understanding the Interfacial Dynamics of Hybrid Materials for Potential Application Solar Cells and Water Splitting. Project No. 19-SCI-1-01-0008, Deanship of the Scientific Research (DSR), Umm Al-Qura University, (Started in March, 2020-2021).

4. Conferences:

1. 10th Ibn Sina International Conference on Pure and Applied Heterocyclic Chemistry (ISIC), Feb. 17-20, 2007, Luxor – Egypt as (As Participant and Organizing Committee).
2. 1st Conference for Young Scientists in Basic Science and Technology, May 5-6, 2007, Assiut, Egypt.
3. The fifth Saudi Conference in Science, Apr. 16-18, 2012, Makka al Mukarrama, Saudi Arabia.
4. 12th Ibn Sina International Conference on Pure and Applied Heterocyclic Chemistry (ISIC), Feb. 16-19, 2013, Luxor – Egypt (As Participant and Organizing Committee).

SUPERVISION OF SCIENTIFIC THESES

A. MSc. Theses

1. **Ahmed S. Mohammed**. Design, Synthesis, Characterization of Some Novel Gemini and Oligomeric Surfactants and Their Applications in Nanotechnology. 2018. Assiut University.
2. **Shaimaa A. M. Sindi**. Synthesis and Kinetic Evaluation of Michael Acceptors based-Indoline-2,3-dione Derivatives. 2018. Umm Al-Qura University.
3. **Abdulaziz S. M. Alwuthaynani**. Synthesis and Biological Activity of Some Sensitive Organic Fluorophores. 2023. Umm Al-Qura University.

4. **Khalid A. Alfaidi**. Exploiting New Heterocyclic Compounds as Potential Bioactive Agents. 2023. Umm Al-Qura University.
5. **Fawaz M. AL-Zahrani**. 1,3-Dipolar Cycloaddition Approach to Some New Spiroheterocycles: Experimental and Theoretical Insights. 2025. Umm Al-Qura University.

B. Ph.D. Theses

1. **Munira M. Al-Rooqi**. Design, Synthesis and Biological Evaluation of Some New N^4-Substituted-Sulfonamide Derivatives. 2020. Umm Al-Qura University.
2. **Reem I. A. Alsantali**. Fluorene-Based Heterocycles: Synthesis, Characterization and Biological Activity. 2020. Umm Al-Qura University.

PUBLICATIONS

A. Research Articles

1. Abdulrahman A. Alsimaree, Reem I. Alsantali, Mohd Washid Khan, **Essam M. Hussein**, Jan Mohammad Mir, Rabab S. Jassas, Saleh A. Ahmed. Next-gen thiazole-sulphonamide hybrids as anti-lung cancer agents deciphered through *in vitro*, DFT, and docking synergy. *J. Indian Chem. Soc.* (**2025**) 102, 102202. https://doi.org/10.1016/j.jics.2025.102202.

2. Mustafa S. Alluhaibi, Mohamed Sharaf, Amr H. Moustafa, Aly Abdou, Mounir A. A. Mohamed, Abdulrahman A. Alsimaree, Ziad Moussa, **Essam M. Hussein**, Munirah M. Al-Rooqi, Omran A. Omran, Saleh A. Ahmed. Synthesis and Computational Analysis of Novel Carboximidamide/ Benzothiazole and 1,2,4-Oxadiazole/Benzothiazole Hybrid Compounds for Biological Applications. *J. Mol. Struct.* (**2025**) *1344*, 142967. https://doi.org/10.1016/j.molstruc.2025.142967.

3. Ehsan Ullah Mughal, Syeda Fariha Kainat, Abdulaziz M. Almohyawi, Nafeesa Naeem, **Essam M. Hussein**, Amina Sadiq, Ahmad Abd-El-Aziz, Ning Ma, Alaa S. Abd-El-Aziz, A. Timoumi, Ziad Moussa, Nermeen Saeed Abbas, Saleh A. Ahmed. Thermally activated delayed fluorescence materials: innovative design and advanced application in biomedicine, catalysis and electronics. *RSC Adv.* (**2025**) *15*, 7383–7471. https://doi.org/10.1039/D5RA00157A.

4. Mohammed B. Hawsawi, Omran A. Omran, Aly Abdou, Moumen S. Kamel, Abdulaziz M. Almohyawi, Mustafa S. Alluhaibi, Reem I. Alsantali, Ziad Moussa, A. Timoumi**, Essam M. Hussein**, Abdelrahman S. Khder, Sameer S.A. Natto, Saleh A. Ahmed. High Nonlinear Optical Performance of *p*-Tert-Butylthiacalix[4]arene Derivatives: Synthesis, Characterization, and Theoretical Validation. *Opt. Mater.* (**2025**) *160*, 116642. https://doi.org/10.1016/j.optmat.2025.116642.

5. **Essam M. Hussein**, Ziad Moussa, Rami J. Obaid, Ahmad Abd-El-Aziz, Hatem M. Altass, Khaled Elbanna, Hussein H. Abulreesh, Meshal Almalki, Amrita Banerjee, Arpita Chattopadhyay, Samir Kumar Pal, Saleh A. Ahmed. Deep Eutectic Solvent (DES)-Mediated Green Approach for Synthesis of Benzothiazole Tethered Pyrazoles: Antimicrobial Properties and Molecular Docking Insights. *ChemistrySelect* (**2024**) *9*, e202401009. https://doi.org/10.1002/slct.202401009.

6. Syeda Fariha Kainat, Mohammed B. Hawsawi, Ehsan Ullah Mughal, Nafeesa Naeem, Abdulaziz M. Almohyawi, Hatem M. Altass, **Essam M. Hussein**, Amina Sadiq, Ziad Moussa, Alaa S. Abd-El-Azizf, Saleh A. Ahmed. Recent developments in the synthesis and applications of terpyridine-based metal complexes: a systematic review. *RSC Adv.* (**2024**) *14*, 21464-21537. https://doi.org/10.1039/D4RA04119D.
7. Rabab S. Jassas, Omran A. Omran, Aly Abdou, Moumen S. Kamel, Ziad Moussa, Ahmad Abd-El-Aziz, Ning Ma, Hatem M. Altass, Abdelrahman S. Khder, **Essam M. Hussein**, A. Timoumi, Sameer S. A. Natto, Saleh A. Ahmed. Design and DFT calculations of optoelectronic material based on thiazolobenzimidazole-coupled isatin derivatives. *Mater. Chem. Phys.* (**2024**) *325*, 129689. https://doi.org/10.1016/j.matchemphys.2024.129689.
8. **Essam M. Hussein**, Ziad Moussa, Jabir H. Al-Fahemi, Munirah M. Al-Rooqi, Rami J. Obaid, M. Shaheer Malik, Alaa Abd-El-Aziz, Saleh A. Ahmed. Study on regio- and diastereoselectivity of the 1,3-dipolar cycloaddition reaction of azomethine ylide with 2-(benzo[d]thiazol-2-yl)-3-(aryl)acrylonitrile: Synthesis, spectroscopic and computational approach. *ACS Omega* (**2024**) *9*, 23802−23821. https://doi.org/10.1021/acsomega.4c01552.
9. M. Shaheer Malik, Hossa F. Alshareef, Khalid A. Alfaidi, Hissana Ather, Zainularifeen Abduljaleel**, Essam M. Hussein**, Ziad Moussa, Saleh A. Ahmed. Exploring the untapped pharmacological potential of imidazopyridazines. *RSC Adv.* (**2024**) *14*, 3972−3984. https://doi.org/10.1039/D3RA07280K.
10. Ehsan Ullah Mughal, Ahlam Roufieda Guerroudj, Ebru Bozkurt, Nafeesa Naeem, Amina Sadiq, Jabir H. Al-Fahemi, Rabab S. Jassas, **Essam M. Hussein**, Nourdine Boukabcha, Abdelkader Chouaih, Saleh A. Ahmed. Investigation of Photophysical and Electronic Properties of Aurone Derivatives: Insights from Spectroscopic Techniques and Density Functional Theory Calculations. *Spectrochim. Acta A* (**2023**) *302*, 123130. https://doi.org/10.1016/j.saa.2023.123130.
11. Aly Abdou, Omran A. Omran, Jabir H. Al-Fahemi, Rabab S. Jassas, Munirah M. Al-Rooqi, **Essam M. Hussein**, Ziad Moussa, Saleh A. Ahmed. Lower rim thiacalixarenes derivatives incorporating multiple coordinating carbonyl groups: synthesis, characterization, ion-responsive ability and DFT computational analysis. *J. Mol. Struct.* (**2023**) *1293*, 136264. https://doi.org/10.1016/j.molstruc.2023.136264.
12. M. Shaheer Malik, Hissana Ather, Shaik Mohammad Asif Ansari, Ayesha Siddiqua, Qazi Mohammad Sajid Jamal, Ali H. Alharbi, Munirah M. Al-Rooqi, Rabab S. Jassas, **Essam M. Hussein**, Ziad Moussa, Rami J. Obaid, Saleh A. Ahmed. Novel Indole-Tethered Chromene Derivatives: Synthesis, Cytotoxic Properties, and Key Computational Insights. *Pharmaceuticals* (**2023**) *16*(3), 333. https://doi.org/10.3390/ph16030333.
13. Munirah M. Al-Rooqi, Ehsan Ullah Mughal, Qandeel Alam Raja, **Essam M. Hussein**, Nafeesa Naeem, Amina Sadiq, Basim H. Asghar, Ziad Moussa, Saleh A. Ahmed. Flavonoids and related privileged scaffolds as potential urease inhibitors: a review. *RSC Adv.* (**2023**) *13*, 3210−3233. https://doi.org/10.1039/D2RA08284E.

14. Nizar El Guesmi, **Essam M. Hussein**, Ziad Moussa, Afnan H. Alkhuzaee, Abdullah Y. A. Alzahrani, Rabab S. Jassas, Munirah M. Al-Rooqi, Rami J. Obaid, Saleh A. Ahmed. Spectroscopic, computational and mechanistic studies on regio- and stereoselectivity of the 1,3-dipolar cycloaddition reaction in the synthesis of dispiro[indoline-3,2′-pyrrolidine-3′,3"-indolines] festooned with pyrene moiety. *J. Mol. Struct.* (**2022**) *1264*, 133283. https://doi.org/10.1016/j.molstruc.2022.133283.

15. Ehsan Ullah Mughal, Jamshaid Ashraf, **Essam M. Hussein**, Yasir Nazir, Abdulaziz S. Alwuthaynani, Nafeesa Naeem, Amina Sadiq, Reem I. Alsantali, Saleh A. Ahmed. Design, Synthesis, and Structural Characterization of Thioflavones and Thioflavonols as Potential Tyrosinase Inhibitors: In Vitro and In Silico Studies. *ACS Omega* (**2022**) *7*, 17444−17461. https://doi.org/10.1021/acsomega.2c01841.

16. **Essam M. Hussein**, Ziad Moussa, Uttam Pal, Reem I. Alsantali, Abdullah Y. A. Alzahrani, Rami J. Obaid, Fawaz M. Alzahrani, Munirah M. Al-Rooqi, Meshari A. Alsharif, Nizar El Guesmi, Rabab S. Jassas, M. Shaheer Malik, Hatem M. Altass, Samir K. Pal, Tanusri Saha Dasgupta, Saleh A. Ahmed. Regio- and stereoselectivity of the 1,3-dipolar cycloaddition of azomethine ylides to (*E*)-3-(2-oxo-2-(pyren-1-yl)ethylidene)indolin-2-ones: A combined experimental and theoretical study. *Arab. J. Chem.* (**2022**) *15*, 103855. https://doi.org/10.1016/j.arabjc.2022.103855.

17. M. Shaheer Malik, Reem A. Alsantali, Abdullah Y.A. Alzahrani, Qazi Mohammad Sajid Jamal, **Essam M. Hussein**, Khalid A. Alfaidi, Munirah M. Al-Rooqi, Rami J. Obaid, Meshari A. Alsharif, Syed Farooq Adil, Rabab S. Jassas, Ziad Moussa, Saleh A. Ahmed. Multicomponent synthesis, cytotoxicity, and computational studies of novel imidazopyridazine based *N*-phenylbenzamides. *J. Saudi Chem. Soc.* (**2022**) *26*:101449. https://doi.org/10.1016/j.jscs.2022.101449.

18. M. Shaheer Malik, Reem I. Alsantali, Qazi Mohammad Sajid Jamal, Zaki S. Seddigi, Moataz Morad, Meshari A. Alsharif, **Essam M. Hussein**, Rabab S. Jassas, Munirah M. Al-Rooqi, Zainularifeen Abduljaleel, Ahmed O. Babalgith, Hatem M. Altass, Ziad Moussa, Saleh A. Ahmed. New imidazole-Based *N*-phenylbenzamide derivatives as potential anticancer agents: Key computational insights. *Front. Chem.* (**2022**) *9*:808556. https://doi.org/10.3389/fchem.2021.808556.

19. **Essam M. Hussein**, M. Shaheer Malik, Reem I. Alsantali, Basim H. Asghar, Moataz Morad, Mohammad Azam Ansari, Qazi Mohammad Sajid Jamal, Abdulrahman A. Alsimaree, Ashraf N. Abdalla, Al-Anoud S. Al-Qarni, Rabab S. Jassas, Hatem M. Altass, Saleh A. Ahmed. Bioactive fluorenes. Part IV: Design, synthesis, and a combined *in vitro, in silico* anticancer and antibacterial evaluation of new fluorene-heterocyclic sulfonamide conjugates. *J. Mol. Struct.* (**2021**) *1246*, 131232. https://doi.org/10.1016/j.molstruc.2021.131232.

20. **Essam M. Hussein**, Nizar El Guesmi, Tuhin K. Maji, Rabab S. Jassas, Abdulrahman A. Alsimaree, Hatem M. Altass, Ziad Moussa, Samir K. Pal, Saleh A. Ahmed. Synthesis and photophysical properties of benzimidazoles grafted pyrazole-containing pyrene or fluorene moiety: A combined spectroscopic and computational study. *J. Photochem. Photobiol., A.* (**2021**) *419*, 113465. https://doi.org/10.1016/j.jphotochem.2021.113465.

21. **Essam M. Hussein**, Nizar El Guesmi, Saleh A. Ahmed. Distinctive tunable photophysical properties of versatile environmentally-sensitive tribranched cyanopyridine fluorophores. *Spectrochim. Acta A* (**2021**) *248*, 119169. https://doi.org/10.1016/j.saa.2020.119169.

22. **Essam M. Hussein**, Nizar El Guesmi, Ziad Moussa, Uttam Pal, Samir K. Pal, Tanusri Saha Dasgupta, Saleh A. Ahmed. Unprecedented regio- and stereoselective synthesis of pyrene-grafted dispiro[indoline-3,2′-pyrrolidine-3′,3″-indolines]: Expedient experimental and theoretical insights into polar [3 + 2] cycloaddition. *ACS Omega* (**2020**) *5,* 24081−24094. https://doi.org/10.1021/acsomega.0c03510.

23. Ali Sayqal, Saleh A. Ahmed, **Essam M. Hussein**, Mohammed A. Kassem. Development a spectrofluorometric micellar supported encapsulated method for micro determination of silver ion using new 2,6-disubstituted pyridine derivatives. *Spectrochim. Acta A* (**2020**) *242*, 118711. https://doi.org/10.1016/j.saa.2020.118711.

24. **Essam M. Hussein**, Reem I. Alsantali, Moataz Morad, Rami J. Obaid, Hatem M. Altass, Ali Sayqal, Mohamed A. S. Abourehab, Amal A. Elkhawaga, Ahmed S. M. Aboraia and Saleh A. Ahmed. Bioactive fluorenes. Part III: 2,7-dichloro-9*H*-fluorene-based thiazolidinone and azetidinone analogues as anticancer and antimicrobial against multidrug resistant strains agents. *BMC Chemistry* (**2020**) *14*:42. https://doi.org/10.1186/s13065-020-00694-2.

25. Shaimaa Sindi, Nizar El Guesmi, Basim H. Asghar, **Essam M. Hussein**. Structure-reactivity relationships on Michael additions of secondary cyclic amines with 3-cyanomethylidene-2-oxindoline derivatives. *Arab. J. Chem.* (**2020**) *13*, 5487-5500. https://doi.org/10.1016/j.arabjc.2020.03.027.

26. Reem I. Alsantali, **Essam M. Hussein**, Rami J. Obaid, Moataz Morad, Hatem M. Altass, Ahmed Alharbi, Ahmed M. Hameed, Rabab.S. Jassas, Mohamed A. S. Abourehab, Basim H. Asghar, Ziad Moussa, Saleh A. Ahmed. Bioactive Fluorenes. Part II. Unprecedented biologically active thiazole derivatives based-2,7-dichlorofluorene as competent DHFR inhibitors: Design, synthesis, and molecular docking approaches. *Arab. J. Chem.* (**2020**) *13*, 5451-5462. https://doi.org/10.1016/j.arabjc.2020.03.024.

27. **Essam M. Hussein**, Munirah M. Al-Rooqi, Amal A. Elkhawaga, Saleh A. Ahmed. Tailoring of novel biologically active molecules based on N^4-substituted sulfonamides bearing thiazole moiety exhibiting unique multi-addressable biological potentials. *Arab. J. Chem.* (**2020**) *13*, 5345-5362. https://doi.org/10.1016/j.arabjc.2020.03.014.

28. Nizar El Guesmi, **Essam M. Hussein**, Basim H. Asghar, Rami J. Obaid, Rabab S. Jassase, Ahmed Alharbi, Hatem M. Altass, Ismail I. Althagafi, Moataz Morad, Ziad Moussa, Saleh A. Ahmed. Nucleophilicity and solvent effects on the kinetics of 4-(pyren-1-yl)thiazol-2-amine interaction with 4,6-dinitrobenzofuroxan. *Arab. J. Chem.* (**2020**) *13*, 3702-3713. https://doi.org/10.1016/j.arabjc.2019.12.016.

29. **Essam M. Hussein**, Nizar El Guesmi, Saleh A. Ahmed. Exploiting a multicomponent domino reaction strategy for the tailoring of versatile environmentally sensitive fluorophore-based nicotinonitriles incorporating pyrene and fluorene moieties. *RSC Advances* (**2019**) *9*, 40118-40130. https://doi.org/10.1039/C9RA09379F.

30. **Essam M. Hussein**, Munirah M. Al-Rooqi, Shimaa M. Abd El-Galil, Saleh A. Ahmed. Design, synthesis, and biological evaluation of novel N^4-substituted sulfonamides: acetamides derivatives as dihydrofolate reductase (DHFR) inhibitors. *BMC Chemistry* (**2019**) *13*:91. https://doi.org/10.1186/s13065-019-0603-x.

31. **Essam M. Hussein**, Reem I. Alsantali, Shimaa M. Abd El-Galil, Rami J. Obaid, Ahmed Alharbi, Mohamed A.S. Abourehab, Saleh A. Ahmed. Bioactive fluorenes. Part I. Synthesis, pharmacological study and molecular docking of novel dihydrofolate reductase inhibitors based-2,7-dichlorofluorene. *Heliyon* (**2019**) *5*, e01982. https://doi.org/10.1016/j.heliyon.2019.e01982.

32. Nizar El Guesmi, **Essam M. Hussein**, Saleh A. Ahmed. MCM-SO_3H catalyzed synthesis of environment-sensitive fluorophores incorporating pyrene moiety: Optimization, fluorescence emission and theoretical studies. *J. Photochem. Photobiol. A.* (**2019**) *371*, 306–314. https://doi.org/10.1016/j.jphotochem.2018.11.036.

33. Metwally Abdallah, Saleh A. Ahmed, Hatem M. Altass, Ishaq A. Zaafarany, M. Salem, A. I. Aly, **Essam M. Hussein**. Competent inhibitor for the corrosion of zinc in hydrochloric acid based on 2,6-bis-[1-(2-phenylhydrazono)ethyl]pyridine. *Chem. Eng. Commun.* (**2019**) *206*, 137-148. https://doi.org/10.1080/00986445.2018.1477761.

34. **Essam M. Hussein**, Ziad Moussa, Saleh A. Ahmed. Exclusive regioselective 1,3-dipolar cycloaddition of 9-diazo-9*H*-fluorene and diphenyldiazomethane to 2-arylideneindane-1,3-diones: new approach toward effective synthesis of novel spiropyrazole derivatives. *Monatsh. Chem.* (**2018**) *149*, 2021–2030. https://doi.org/10.1007/s00706-018-2249-0.

35. **Essam M. Hussein**, Ziad Moussa, Nizar El Guesmi, Saleh A. Ahmed. Facile access to regio- and stereoselective synthesis of highly functionalized spiro[indoline-3,2'-pyrrolidines] incorporating a pyrene moiety: experimental, photophysical and theoretical approach. *RSC Advances* (**2018**) *8*, 24116–24127. https://doi.org/10.1039/C8RA04312D.

36. Waleed A. El-Said, Ahmed S. Moharram, **Essam M. Hussein**, Ahmed M. El-Khawaga. Synthesis, Characterizations and Applications of Some New Trimeric-Type Cationic Surfactants. *J. Surfact. Deterg.* (**2018**) *21*, 343–353. https://doi.org/10.1002/jsde.12041.

37. Waleed A. El-Said, Ahmed S. Moharram, **Essam M. Hussein**, Ahmed M. El-Khawaga. Design, synthesis, anticorrosion efficiency, and applications of novel Gemini surfactants for preparation of small-sized hollow spheres mesoporous

silica nanoparticles. *Mater. Chem. Phys.* (**2018**) *211*, 123-136. https://doi.org/10.1016/j.matchemphys.2018.02.013.

38. **Essam M. Hussein**, Saleh A. Ahmed. An efficient and green synthesis of polyfunctionalized spirothiazolidin-4-ones using sulfonated mesoporous silica as a reusable catalyst. *Chem. Heterocycl. Compd.* (**2017**) *53*, 1148–1155. https://doi.org/10.1007/s10593-017-2185-7.

39. **Essam M. Hussein**, Saleh A. Ahmed, Ismail I. Althagafi. A convenient regioselective synthesis of novel spirooxindolinopyrrolizidines incorporating the pyrene moiety through [3+2]-cycloaddition reaction. *Heterocycl. Commun.* (**2017**) *23*, 379–384. https://doi.org/10.1515/hc-2017-0036.

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