

Research Lab Sheet

Lab Name	Synthetic Organic Chemistry Research Laboratory
Academic Year	2021 - 2022

Basic Information	
Department	Organic Chemistry
Location	Building 2 - first floor
Head of the Lab	Prof.Dr/ Ahmed Mohamed Mohamed Soliman
Total area (m²)	50

Lab Members				
No. of Prof.	No. of Ass. Prof.	No. of Lect.	No. of Ass. Lect. & Demonst.	No. of technicians
1	2	0	2	0

Staff members

No.	Name	Scientific degree	e-mail	Specializations	C.V
1	Prof.Dr/ Ahmed Mohamed Soliman	Professor	a_sol2000@yahoo.com	Organic Chemistry	https://staffsites.sohag-univ.edu.eg/cv/258?p=cv
2	Ass. Prof./ Omer Mohamed El Hady	Assistant Professor	el7ady_Omar@yahoo.com	Organic Chemistry	https://staffsites.sohag-univ.edu.eg/omar_saleem
3	Ass. Prof./ Mahmoud Abd El Aleem Ali Ali El-Remaly	Assistant Professor	msremaily@yahoo.com	Organic Chemistry	http://staffsites.sohag-univ.edu.eg/cv/1248?p=cv

Ass. Lecturers & Demonstrators

No.	Name	Scientific degree	e-mail	Specializations	C.V
1	Mostafa Rabie Mohamed	PhD Student	Mostafabalal984@yahoo.com	Polymer Chemistry	http://staffsites.sohag-univ.edu.eg/cv/1748?p=cv
2	Alaa Alaraby Mahmoud	M.Sc	aalaraby349@gmail.com	Organic Chemistry	

Theses produced by the Lab

M Sc Thesis

No.	Title	Approval date
1	Synthesis of some New Spiro and Fused Heterocyclic Systems	2003
2	Synthesis of Some New Pyrazole Derivatives	2009
3	Mimic analogues and their toxicological aspects on spodopetra littoralis	2017
4	Improvement of Paints Characteristics Using Active Nano particles for Treating Wood/Plastic Composites (WPCs)	2019
5	Design, Structural inspection, Pharmaceutical, Interaction with DNA Studies and Catalytic Properties of Some Transition Metal Chelates Derived from Pyrano(2,3-d)Thiazol-2- one Ligand.	2021
Ph.D. Thesis		
1	Synthesis and Reactions of 1,3-Benzodiazepines and Application of,1-Disubstituted Cycloalkanes in Heterocyclic Syntheses	2010
2	Novel Series of Modified guanidines: Syntheses, Reactions and Biological Assessment	2013
3	Synthesis of some new heterocycles compounds and studying their optoelectronic properties	2021

Articles produced by the Lab

Year 2022

- 1 **Omar M. Elhady** , Erian. S. Mansourb , M. M. Elwassimya , Sameh A. Zawamc and Ali M. Drar., Synthesis and characterization of some new tebufenozide analogues and study their toxicological effect against *Spodoptera littoralis* (Boisd.), licensee Growing Science, Current Chemistry Letters 11 (2022) 63–68., doi: 10.5267/j.ccl.2021.009.005.

Year 2021

- 1 Shaaban K. Mohamed, Mahmoud. A. A.Elremaily., Soliman, A.M., and Abdel-Ghany, H., Review of using of Cyanoguanidine in Synthesis of Compounds have expected Biological activities, under review of Chemical research, 2021.
- 2 Mohamed Shaker S.Adam, **Omar M.El-Hady** Mohamed M.Makhlouf AbrarBayazeed Nashwa M.El-Metwaly Ahmad Desoky M.Mohamad., Effect of oxy-vanadium (IV) and oxy-zirconium (IV) ions in O,N-bidentate arylhydrazone complexes on their catalytic and biological potentials that supported via computerized usages., Journal of the Taiwan Institute of Chemical Engineers (2021) 104168., doi.org/10.1016/j.jtice.2021.104168
- 3 Ahmed Khodery, Erian S. Mansour, **Omar M. Elhady**& Ali M. Drar., Synthesis of Neonicotinoid analogues and study their toxicological aspects on *Spodopteralittoralis* and *Schizaphisgraminum*, International Journal of Pest Management., DOI:10.1080/09670874.2021.1943048
- 4 Mohamed Shaker S.Adam M.M.Makhlouf Farman Ullah, **Omar M.El-Hady.** Mononucleating nicotinohydrazone complexes with VO₂⁺, Cu²⁺, and Ni²⁺ ions. Characteristic, catalytic, and biological assessments, Journal of Molecular Liquids., 334 (2021) 116001., doi.org/10.1016/j.molliq.2021.116001.
- 5 E. S. H. El Ashry, M. M. Elshatanofy, M. E. I. Badawy, K. M. Kandeel, **O. M. Elhady** , and M. A. Abdel-Sayed., Synthesis and Evaluation of Antioxidant, Antibacterial, and Target Protein-Molecular Docking of Novel 5-Phenyl-2,4-dihydro-3H-1,2,4-triazole Derivatives Hybridized with 1,2,3-Triazole via the Flexible SCH₂-Bonding, , Russian Journal of General Chemistry., 2020, Vol. 90, No. 12, pp. 2419–2434.,

	doi.org/10.1021/jo00176a012
6	Ahmed M Elsayed, El-Remaily , M.A.A., Kaoud SM Salama, Antar A Abdelhamid, (2021): Utility of Pyrrole-2-thioacetohydrazide in Synthesis of new Heterocyclic Compounds with Promising Antimicrobial activities and Molecular Docking Studies, <i>Journal of Heterocyclic Chemistry</i> , doi.org/10.1002/jhet.4392.
7	Abu-Dief, A.M., El-Metwaly, N.M. , Alzahrani, S.O. , Alkhatib, F. , Abumelha, H.M., El-Dabea, T., El-Remaily, M.A.A. (2021): Structural, conformational and therapeutic studies on new thiazole complexes: drug-likeness and MOE-simulation assessments. <i>Research on Chemical Intermediates</i> , 2021, 47, 1979–2002, doi.org/10.1007/s11164-020-04380-9.
8	Abu-Dief, A.M., El-Metwaly, N.M. , Alzahrani, S.O. , Alkhatib, F. , Abualnaja, M.M. , El-Dabea, T., El-Remaily, M.A.A. (2021): Synthesis and characterization of Fe(III), Pd(II) and Cu(II)-thiazole complexes; DFT, pharmacophore modeling, in-vitro assay and DNA binding studies. <i>Journal of Molecular Liquids</i> . 2021, 326, 115277., doi.org/10.1016/j.molliq.2021.115277
9	Eman A. Ahmed, Ahmed M.M. Soliman , Ali M. Ali, El-Remaily, M.A.A. (2021): Boosting the catalytic performance of zinc linked amino acid complex as an eco- friendly for synthesis of novel pyrimidines in aqueous medium. <i>Applied Organometallic Chemistry</i> , 2021; 35: e6197, doi.org/10.1002/aoc.6197.
10	Alzahrani, S.O. , Abu-Dief, A.M., K. Alkamis, Alkhatib, F. , El-Remaily, M. A. A. , El-Metwaly, N.M., (2021): Synthesis and structural elucidation for new pyranothiazole complexes: Biological screening and effects on DNA through in-vitro and in-silico approaches. <i>Journal of Molecular Liquids</i> . 2021, 332, 115844., doi.org/10.1016/j.molstruc.2015.09.039.
11	El-Remaily, M. A. A. , Hamad, H.A., Soliman, A.M.M. , Elhady, O.M. , (2021): Boosting the catalytic performance of manganese (III)-porphyrin complex MnTSP for facile one-pot green synthesis of 1,4-dihydropyridine derivatives under mild conditions. <i>Applied Organometallic Chemistry</i> , 2021; 35: e6 238 ,doi.org/10.1002/aoc.6238.
12	H. A. Hamad, H. Nageh, H. M. El-Bery, A. Kasry, F. Carrasco-Marín, O. M. Elhady, A. M.M. Soliman, M. A. A. El-Remaily , (2021): Unveiling the exceptional synergism-induced design of Co-Mg-Al layered triple

	hydroxides (LTHs) for boosting catalytic activity toward the green synthesis of indol-3-yl derivatives under mild conditions. <i>J. Colloid and Interface Science</i> 599 (2021) 227–244., DOI: 10.1016/j.jcis.2021.04.083.
13	E. Kh Shokr, M. S. Kamel, H. Abdel-Ghany, M. A. A. El-Remaily , (2021):Optical characterization and effects of iodine vapor and gaseous HCl adsorption investigation of Novel Synthesized Organic dye Based on Thieno[2,3-b]thiophene., <i>Optik</i> ,243, 2021, 167385., DOI:10.1016/j.ijleo.2021.167385
14	El-Remaily, M.A.A. , El-Dabea, T., Al Sawat.M., Mahmoud.M.H.H., Alfi.A.A., El-Metwaly, N.M., Abu-Dief, A.M., (2021): Development of New Thiazole Complexes as Powerful Catalysts for Synthesis of Pyrazole-4-Carbonitrile Derivatives under Ultrasonic Irradiation Condition Supported by DFT Studies. <i>ACS Omega</i> 2021, 6, 32,21071-21086.
15	E. Kh Shokr, M. S. Kamel, H. Abdel-Ghany, M. A. A. El-Remaily , (2021):Optoelectronic characteristics of as-deposited, annealed and I2–Treated thin films of newly synthesized organic dye based on pyrrolo [2, 3-b] pyrrole., <i>Current Research in Green and Sustainable Chemistry</i> 2021,4, 100090.
16	El-Remaily, M.A.A. , Soliman, A.M.M. , Khalifa. M.A.,El-Metwaly, N.M., Alsoliemy.A., El-Dabea, T.,Abu-Dief, A.M., (2021):Rapidly, highly yielded and green synthesis of dihydrotetrazolo[1,5-a]pyrimidine derivatives in aqueous media using recoverable Pd (II) thiazole catalyst accelerated by ultrasonic: Computational studies. <i>Applied Organometallic Chemistry</i> ,2021;35: e6320, doi.org/10.1002/aoc.6320.
17	El-Remaily, M.A.A. , El-Metwaly, N.M., Bawazeer,T.M., Khalifa. M.A., El-Dabea, T.,Abu-Dief, A.M., (2021):Efficient and recoverable novel pyranothiazol Pd (II), Cu (II) and Fe(III) catalysts in simple synthesis of polyfunctionalized pyrroles: Under mild conditions using ultrasonic irradiation. <i>Applied Organometallic Chemistry</i> ,2021;35: e6370, doi.org/10.1002/aoc.6370.
18	Kamal I.Aly,Hany M.Abd El-Lateef, NasrYehia, A.Khodairy, Marwa M.Sayed, El-Remaily, M.A.A. , (2021): Novel polyesters based on indazole moiety: Synthesis, characterization and applicability as efficient inhibitors for acidic X-65-steel corrosion. <i>Reactive and Functional Polymers</i> , 166, 2021, 105001.
Year 2020	

1	Mai E Shoman, Moustafa O Aboelez , Montaser Sh A Shaykhon, Sanaa A Ahmed, Gamal El-Din A Abu-Rahma, <u>Omar M Elhady.</u> , New nicotinic acid- based 3,5- diphenylpyrazoles: design, synthesis and antihyperlipidemic activity with potential NPC1L1 inhibitory activity., Springer Nature Switzerland AG 2020
2	Mohamed Shaker S, Adam,Mohamed S., Mohamed Ahmed, <u>Omar M. El-Hady</u> , Saad Shaaban., Bis-dioxomolybdenum (VI) oxalyldihy-drazone complexes: Synthesis, characterization, DFT studies, catalytic epoxidation potential, molecular modeling and biological evaluations, Applied organometallic chemistry., 2020; e5573.
3	<u>El-Remaily, M. A. A., Elhady O.M.</u> , (2020): Green Bio-organic and Recoverable Catalyst Taurine (2-aminoethanesulfonic acid) for Synthesis of Bio-active Compounds 3,4-Dihydropyrimidin Derivatives in Aqueous Medium. <i>ChemistrySelect</i> , 2020, 5, 12098 –12102, DOI: 10.1002/slct.202002575.
4	<u>El-Remaily, M. A. A., Soliman, A.M.M., Elhady,O.M.</u> , (2020): "Green Method for the Synthetic Ugi Reaction by Twin Screw Extrusion without a Solvent and Catalyst" <i>ACS Omega</i> 2020, 5, 11, 6194-6198.
Year 2019	
1	Mohamed Shaker S. Adam, <u>Omar M. El-Hady</u> and Farman Ullah., Biological and catalytic potential of sustainable low and high valent metal-Schiff base sulfonate salicylidene pincer complexes., : RSC Adv., 2019, 9, 34311.
2	<u>El-Remaily, M.A.A, Elhady,O.M.</u> , (2019):Iron (III) porphyrin Complex FeTSPP as an efficient catalyst for synthesis of tetrazole derivatives via [2 + 3] cycloaddition reaction in aqueous medium. Applied Organometallic Chemistry, 2019;33:e4989, doi.org/10.1002/aoc.4989.
3	<u>El-Remaily, M. A. A., Abu-Dief, A.M, Elhady,O.M.</u> , (2019): Green synthesis of TiO ₂ nanoparticles as an efficient heterogeneous catalyst with high reusability for synthesis of 1,2-dihydroquinoline derivatives. Applied Organometallic Chemistry,2019;33:e5005, DOI: 10.1002/aoc.5005.
4	Mostafa R. Mohamed. , Hamdy M. N, R. A. El-Ghazawy, AA Amer, <u>Soliman, A.M.M</u> , Nevein O. Shaker, Usama Kandil (2019): Surface Activation of Wood Plastic Composites (WPC) for Enhanced Adhesion with Epoxy Coating., Materials Performance and Characterization., 8(1): 22-40, doi:10.1520/MPC20180034.
Year 2018	

1	Shengjun Ni, El-Remaily M. A. A. , Johan Franze'n (2018): Carbocation Catalyzed Bromination of Alkyl Arenes, a Chemoselective sp ³ vs. sp ² C-H functionalization. Advanced Synthesis & Catalysis. 2018, 360, 4197 – 4204, DOI: 10.1002/adsc.201800788.
Year 2017	
1	Mounir A. A. Mohamed, Omar M. El-Hady and Ahmed M. El-Sayed., Utility of Cyanoacetic Acid Hydrazide in Organic Synthesis: Synthesis and Characterization of Some Novel Heterocycles bearing 1,3,4-Oxadiazole Moeity, Journal of Pharmaceutical and Applied Chemistry, Accepted 2017,
2	El-Remaily, M.A.A. , Elhady, O.M., Abdel-Raheem, E.M.M. (2017): Synthesis and Antimicrobial Screening of Fused Heterocyclic Pyridines. Journal of Heterocyclic Chemistry, 2017, 54, 871-878. DOI: 10.1002/jhet.2648
Year 2016	
1	El-Remaily, M.A.A. , Omar M. Elhady. , Abo Zaid, H.S., Abdel-Raheem, E.M.M., Synthesis and in vitro antibacterial evaluation of some novel fused pyridopyrimidine derivatives. Journal of Heterocyclic Chemistry, 2016, 53, 1304–1309, ChemInform Abstract, 2016, 47(50), 142.
2	El-Remaily, M.A.A. , Omar M. Elhady , Abdel-Raheem, E.M.M., Synthesis and Antimicrobial Screening of Fused Heterocyclic Pyridines. Journal of Heterocyclic Chemistry, published online: 04 MAY 2016, DOI: 10.1002/jhet.2648,
3	M. T. M. El-Wassimy, Erian. S. Mansour, Omar M. Elhady and Ali M. Drar., Mimic Analogues and their Toxicological Aspects on Spodoptera littoralis (Boisd.), Middle East Journal of Applied Sciences., 2016, 6, 442-448,
4	Moustafa O. Aboelez, Omar M. Elhady , Montaser S. A. Shaykoon, Mai E. Shoman, Sanaa A. Ahmed and Gamal El Din A. Abuo-Rahma., Design, Synthesis and Hypolipidemic Activity of Novel Hydrazones of Nicotinic acid Hydrazide. Journal of Pharmaceutical and Applied Chemistry., 2016, 2, 147-151.
5	El-Remaily, M.A.A. Omar M. Elhady. , Cobalt (III)-porphyrin Complex CoTCPP as an efficient and recyclable homogeneous catalyst for synthesis of tryptanthrin in water. Tetrahedron letter, (2016), 57, 435-437. ChemInform Abstract, 2016, 47(20), 176.
6	El-Remaily, M. A. A. , Abu-Dief, A.M. Rafat M. El-Khatib (2016): A robust Synthesis and Characterization for Superparamagnetic CoFe ₂ O ₄ Nanoparticles as an Efficient and Reusable Catalyst for Synthesis of some

	Heterocyclic rings in aqueous media. Applied Organometallic Chemistry. 2016, 30, 12,1022-1029, DOI 10.1002/aoc.3536
7	Hany M. Abd El-Lateef and El-Remaily, M.A.A. , (2016): Divinyl Sulfone Cross-Linked β -Cyclodextrin Polymer as New and Effective Corrosion Inhibitor for Zn Anode in 3.5 M KOH. Trans Indian Inst Met, 2016, 69, 6, 1783-1792. DOI 10.1007/s12666-016-0838-3.
8	El-Remaily, M.A.A., Elhady,O.M. , Abo Zaid, H.S., Abdel-Raheem,E.M.M. (2016): Synthesis and in vitro antibacterial evaluation of some novel fused pyridopyrimidine derivatives. Journal of Heterocyclic Chemistry, 2016, 53,1304–1309
9	El-Remaily, M.A.A., Soliman. A.M.M. (2016): Epichlorohydrin cross-linked β -cyclodextrin polymer a promising method in industry for the synthesis of 2-phenylbenzthiazole in water. Journal of sulfur Chemistry, 2016, 37, 70-79. DOI: 10.1080/17415993.2015.1089874.
10	Remaily, M.A.A., Elhady,O.M. , Cobalt (III)-porphyrin Complex CoTCPP as an efficient and recyclable homogeneous catalyst for synthesis of tryptanthrin in water. Tetrahedron letter, (2016), 57, 435-437. ChemInform Abstract, 2016, 47(20), 176. DOI: 10.1002/chin.201620176.

Lab instruments						
No.	Device	quantity	Quality			
			Good	Poor	Need maintenance	malfunction
1	UV Lamp	2	1	1	1	1
2	Weight Balance	1	1	1	1	1
3	microwave synthesis workstation sineo	1	1	0		1
4	Hot Plate with stirrer	4	3	1	1	3
5	Hot Plate	4	2	2	2	2
6	Water bath	1	1	0	0	1
7	Oven	1	1	0	0	1
8	Desiccator	2	2	0		2

Instruments Description		
	Device image	Description /use
UV Lamp		A UV lamp can be used in numerous ways today and some of the most common include as a disinfection tool in water plants or for curing or oxidation in production plants. With over 40 years in the UV lamp business, Ultra light AG is ideally placed to offer its clients a customized service that recognizes their individual needs. In addition to its standard UV lamp range, the company can adapt lamps to your specifications for use in a particular process or production stage.
Hot Plate		Hot plate is a device used: • For heating samples in glass beakers, flasks, vials, bottles and other vessels. • For refluxing the organic reactions. To heat samples before chemical analysis.
Hot Plate with stirrer		Hot plate with stirrer is a device used: • For heating samples in glass beakers, flasks, vials, bottles and other vessels. • For refluxing with stirring the organic reactions. To heat samples before chemical analysis.

Water bath		Water bath is a device used for making organic reactions under vapour of water condition.
Oven		Oven is a device used for: Drying organic samples. Drying all types of glass.
Desiccator		Desiccator is a glass device used for preservation organic samples dried.
Weight Balance		A weighing balance is an instrument which is used to determine the weight or mass of an object. Available in a wide range of sizes with multiple weighing capacities they are essential tools in laboratories, commercial kitchens and pharmacies to name but a few.

microwave synthesis workstation sineo		1. Microwave power realizes inverter control through precise closed-loop PID technology during reaction process, with non-pulse microwave continuous-heating, automatic variation range of power: 0 to 1000W, and power can be automatically adjusted with temperature programming through Inverter technology and closed-loop control technology. 2. Stainless cavity with large capacity and multilayer Teflon spray. Any open mouth on microwave oven cavity is safe to human body, and microwave leakage is far lower than national standard and gets CE certification. The exhaust air rate of anti-corrosion high-power draught fan is 5.8M3/Min, realizing a fast cooling. 3. Dual-channel temperature detection (DTD) technology can detect temperature not only through Pt100 thermocouple but also non-contact infrared ray. The system automatically determines temperature measurement type, monitor and control reaction temperature in real time. The infrared temperature measurement range is 0°C to 900°C with precision of $\pm 1^\circ\text{C}$ and Pt100 thermocouple temperature measurement range is
Spin Coating		Spin coating is a procedure used to deposit uniform thin films onto flat substrates. Usually a small amount of coating material is applied on the center of the substrate, which is either spinning at low speed or not spinning at all. The substrate is then rotated at speed up to 10,000 rpm to spread the coating material by centrifugal force. A machine used for spin coating is called a spin coater, or simply spinner.

Evaluate the fulfillment of lab to appropriateness of areas, building installations, facilities and human resources standards

Areas of assessment		Indicators	Yes	Somewhat	No
Floor area and capacity	1	Adequacy of the total capacity of the lab for the number of researcher (1).	•		
Windows and doors	2	Availability of windows for adequate ventilations.	•		
	3	Ease of use of windows.	•		
	4	There are two exits (doors) at least (2).			•
	5	There are signs to locate directions of emergency exits			•
Equipment	6	Appropriate temperature during the lectures (3).	•		
	7	Availability of good ventilation (4).	•		
	8	The existence of adequate lighting (4).	•		
	9	Lab is connected to the Internet			•
	10	The existence of directions inside the Lab showing entrances and emergency exits.			•
Security and Safety	11	Existence of firefighting equipment near the hall (5).	•		
	12	Cleanliness of the room.	•		