

Resume

Personal Information

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Education and Training

2022-Present PhD Student, Department of Chemistry and Material Sciences, Interdisciplinary Graduate School of Engineering Sciences, **Kyushu University, Japan.**
2019-2020 Training at **Huazhong Agricultural University, Wuhan, China.**
2014-2018 M.S. in Organic Chemistry, **Benha University, Egypt.**
2009-2013 B.S. in Chemistry (Second class excellent honor degree), **Benha University, Egypt.**

Research Interests

My research interests lie primarily in the field of **Polymer Chemistry**, with a focus on the synthesis, characterization, and application of advanced organic materials for use in organic electronics and electro-optic devices. I am particularly interested in:

1. **Ring-Opening Metathesis Polymerization (ROMP):** Investigating the synthesis of homopolymers and copolymers based on high-strain cyclic alkenes to develop materials with tailored properties for enhanced performance in electronic applications.
2. **TADF-Based Polymers for High-Performance OLEDs:** Exploring TADF pendant polymers, exciplex systems, and **multi-resonance (MR) TADF** materials synthesized via ROMP to achieve **high color purity, narrowband emission, and enhanced efficiency**. Additionally, investigating **inkjet printing** and **solution-processable** fabrication techniques for scalable and cost-effective OLEDs production.

Work Experiences

December 2017- September 2022 Teaching assistant in the Chemistry Department, Faculty of Science, Benha University, Egypt.

March 2015- November 2017 Researcher in the Chemistry Department, Faculty of Science, Benha University, Egypt.

October 2013- February 2015 Medical Representative, PIXEL Pharmaceutical company, Egypt.

Research skills

I have strong expertise in synthesizing and characterizing organic and polymer materials, with extensive hands-on experience in key analytical techniques essential to materials science and organic electronics. My skills include:

- Polymer Characterization
- Optical and Photophysical Analysis
- Electrochemical and Quantum Yield Measurements
- OLED Device Fabrication and Characterization

Publications

First author, Corresponding author, and equally contributed research articles:

- [1] M.F. Radwan, M.E. Abdu, M.M. Elkady, **M.Z. Basyouni**, A.M. Spring, Living ROMP of N - phenothiazinyl norbornene-dicarboximide homopolymer: Synthesis , characterization , and physical behavior insights, Polymer. J. 321 (2025) 128115.
<https://doi.org/10.1016/j.polymer.2025.128115>.

- [2] **M.Z. Basyouni**, M.E. Abdu, M.F. Radwan, A.M. Spring, From monomer to polymer: Controlled synthesis and comprehensive analysis of poly(p-phenylene vinylene) via ROMP, *J. Mol. Struct.* 1310 (2024). <https://doi.org/10.1016/j.molstruc.2024.138001>.
- [3] **M.Z. Basyouni**, M.F. Radwan, M.E. Abdu, A.M. Spring, Synthesis, Characterization, and Optical Properties of Carbazole-Functionalized Poly(norbornene-dicarboximide) by ROMP, *Evergreen* 11 (2024) 207–213. <https://doi.org/10.5109/7172257>.
- [4] H.I. Mohamed, **M.Z. Basyouni**, A.A. Khalil, K.A. Hebash, A.H. Tantawy, Petroleum-dispersing and antimicrobial activity of newly synthesized polymeric surfactants tethering tetrachlorophthalimide moiety, *J. Iran. Chem. Soc.* (2020). <https://doi.org/10.1007/s13738-020-02023-9>.
- [5] **M.Z. Basyouni**, A.M. Spring, Homo and Copolymers Based on PPVs and NDI monomers through ROMP: Structure, Stability, and Optoelectronic Properties. (under review in *Polymer Bulletin*, Springer Nature).
- [6] **M.Z. Basyouni**, Keisuke Nomura, Yuto Goroumaru, Andrew M. Spring, Controlled Synthesis of PPV Oligomers by ROMP: Impact on Optical, Structural, and Thermal Properties. (Accepted in *Chemical Papers*, Springer Nature).

Joint research articles:

- [1] A.H. Tantawy, H.I. Mohamed, A.A. Khalil, K.A. Hebash, **M.Z. Basyouni**, Novel bioactive imidazole-containing polymeric surfactants as petroleum-collecting and dispersing agents: Synthesis and surface-active properties, *J. Mol. Liq.* 236 (2017) 376–384. <https://doi.org/10.1016/j.molliq.2017.04.040>.
- [2] M.E. Abdu, **M.Z. Basyouni**, A.M. Spring, Controlled Synthesis and Characterization of novel Homo- and Random Co-Polymers from Carbazolovinylene and Phenothiazinovinylene via ROMP Chemistry: GPC, UV-Vis, and DFT Analysis. (under review in *European Polymer Journal*, Elsevier).

Conferences

Oral presentation: The 10th International Exchange and Innovation Conference on Engineering & Sciences (IEICES 2024), Kyushu University, Japan. Title “Concise Review of TADF: Basic Principles, Material Design, Prospective Applications, and the Role of ROMP in Polymer Synthesis”. Mahmoud Z. Basyouni and Andrew M. Spring (2024/10).

Oral presentation: The 9th International Exchange and Innovation Conference on Engineering & Sciences (IEICES 2024), Kyushu University, Japan. Title “Conjugated Polymers and ROMP: Synthesis, Applications, and Prospects for Technological Innovations”. Mahmoud Z. Basyouni and Andrew M. Spring (2023/10).

2015 First International Conference of Applied Sciences, benha University, Egypt.

workshops

2024	International Sakura Science Event, Kyushu University, Japan
2018	Production of hydrogel using radiation technology, Atomic Energy Authority, Egypt.
2017	Ethics of Scientific Research, Scientific Writing, and University Administration, Benha University, Egypt.
2016	Teaching responsible sciences workshop, Benha University, Egypt.
2016	spectroscopy workshop, Central laboratories, Ain shams University, Egypt.

Teaching skills

- Delivering tutorials in organic synthesis to groups of undergraduate students.
- Supervise students to carry out the practical sessions of identification of simple solid and liquid organic compounds.

- Teaching spectroscopy and separation techniques, along with supporting and helping other students in the laboratory. Marking student's performance sheets.

Personal Skills

- Ability to work well under pressure.
- Team leadership abilities and hard worker.
- Good communication skills.
- Interactive and fast enough to digest any new technologies.

Languages

- Arabic: mother tongue.
- English: very good writing and speaking
- Japanese: basic level

Training Courses

- Lab rotation at Chihaya Adachi Sensei's laboratory (OPERA), Kyushu University, focusing on PL quantum yield measurements and OLED device fabrication (February–March 2025).
- Participation and contribution in the training course on spectroscopy separation techniques, insect behavior, and molecular biology at the College of Science, Huazhong Agricultural University, Wuhan, China (March 14, 2019 – February 1, 2020).

Referee

Associate Professor. **Andrew Spring**

Academic Position: Associate Professor Department of Molecular and Material Sciences (MMS) Kyushu University, Japan

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Associate Professor. **Furuno Hiroshi**

Academic Position: Associate Professor Department of IFC Faculty of Engineering Sciences, Kyushu University Room: E304, Chikushi Campus

Edu-Mail: furuno.hiroshi.770@m.kyushu-u.ac.jp

Associate Professor. **Bahaa Elgendy,**

Academic Position: Associate Professor of Medicinal Chemistry, Department of Anesthesiology & Center for Clinical Pharmacology, Washington University School of Medicine in St. Louis, 2 Pharmacy Place St. Louis, Missouri 63110

Edu-Mail: belgendy@wustl.edu

All relevant documents will be provided upon request