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Research Keywords

Chemiluminescence, Molecular sensors, Bioorganic chemistry

Academic Career

1987-1990	Technion, Haifa, Israel	Chemistry	B.Sc
1990-1997	Technion, Haifa, Israel	Organic Chemistry	Ph.D
1997-2000	The Scripps Research Institute, La Jolla, Ca.	Research-Associate	
2000-2004	Tel-Aviv University	Senior Lecturer	
2004-2005	Tel-Aviv University	Senior Lecturer (Tenure)	
2005-2009	Tel-Aviv University	Associate Professor	
2009-2016	Tel-Aviv University	Full Professor	
2016-Present	Tel-Aviv University of Chemical Processes	The Emerico Letay Chair	

Selected Publications

David, M., Leirikh, T., Naama, N., Kopp, T., Shabat, D., "Phenylamine-1,2-Dioxetanes: Promising Class of Chemiluminescent Luminophores for Aqueous Sensing and Bacterial Detection", *Angew. Chem. Int. Ed.*, 2025, doi.org/10.1002/anie.202515674.

David, M., Gutkin, S., Nithun, R.V., Jbara, M., Shabat, D., "Unprecedented Photoinduced-Electron-Transfer Probe with a Turn-ON Chemiluminescence Mode-of-Action", *Angew. Chem.*, 2024, e202417924.

Shelef, O., Kopp, T., Tannous, T., Jospe-Kaufman, M., Arutkin, M., Reuveni, S., Shabat, D., Fridman, M. "Enzymatic Activity Profiling Using an Ultra-Sensitive Array of Chemiluminescent Probes for Bacterial Classification and Characterization", *J. Am. Chem. Soc.*, 2024, 146, 5263–5273.

Tannous, R., Shelef, O., Gutkin, S., David, M., Leirikh, T., Ge, L., Jaber, J., Zhou, Q., Ma, P., Fridman, M., Spitz, U., Houk, K.N., Shabat, D., "Spirostrain-Accelerated Chemiexcitation of Dioxetanes Yields Unprecedented Detection Sensitivity in Chemiluminescence Bioassays", *ACS. Cent. Sci.*, 2024, 10, 28–42.

Hananya, N., Shabat, D., "Recent Advances and Challenges in Luminescent Imaging: Bright Outlook for Chemiluminescence of Dioxetanes in Water", *ACS Central Sci.*, 2019, 5, 949-59.

Green, O., Eilon, T., Hananya, N., Gutkin, S., Bauer, CR., Shabat, D. "Opening a Gateway for Chemiluminescence Cell Imaging: Distinctive Methodology for Design of Bright Chemiluminescent Dioxetane Probes", ACS Cent. Sci., 2017, 4, 349-58.

Why My Lab?

My lab can offer...

My lab has expertise in the design and synthesis of highly efficient chemiluminescence probes for enzymatic detection and molecular imaging.