Ramy Farouk Takieldin

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EDUCATION

Doctor of Philosophy, Faculty of Engineering, Ain Shams University, Egypt   2015
THESIS - Algebra and Its Applications to Coding Theory

Master of Science, Faculty of Engineering, Ain Shams University, Egypt   2009
THESIS - Fractals and their Applications to Signal Processing

Bachelor of Science, Electronics and Electrical Communications
Faculty of Engineering, Ain Shams University, Egypt   2002

PROFESSIONAL EXPERIENCE

Research:
My research interests focus on coding theory, in particular, the algebraic structure of cyclic, constacyclic, quasi-cyclic, quasi-twisted, and multi-twisted codes. My aim is to explore a set of generators for these codes, their Euclidean and Galois duals, and their Galois hulls. In addition to examining various combinatorial properties of these codes, such as reversibility and self-duality, and conditions to combine these properties.

Postdoctoral Fellowship:
Under the supervision of Professor Hajime Matsui, I received a one-year postdoctoral fellowship at Toyota Technological Institute, Nagoya, Japan. During the fellowship, we conducted research to identify the algebraic structure of quasi-cyclic codes as well as the conditions for combining reversibility and duality properties. By the end of the fellowship, we received the "Best paper award" by IEICE - Institute of Electronics, Information and Communication Engineers.   2019–2020

Editor and Reviewer:

- zbMATH Reviewer, Author-ID is "taki-eldin.ramy-f ".
- Associate Editor in Ain Shams Engineering Journal - Elsevier.   2020–Present
- Associate Editor in IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences.   2023–Present
- Associate Editor in International Journal of Applied Engineering Research (IJAER).   2024–Present
- I have refereed many research papers in various international journals.

Teaching experience:

- Faculty of Engineering, Ain Shams University   2002–Present
- Egypt University of Informatics (EUI)   2022–Present

- University of Hertfordshire, Egypt   2021–2022
- Universities of Canada in Egypt   2018–2019
- Misr International University   2017–2018
- The American University of Cairo   2006–2017

Courses I have taught:
- Calculus I-IV
- Ordinary Differential Equations
- Partial Differential Equations
- Complex Analysis
- Analytic Geometry
- Probability & Statistics
- Linear Programming
- Special Functions
- Numerical Analysis
- Elementary Abstract Algebra

Academic advisor for CESS Program, Faculty of Engineering, Ain Shams University   2020–2023

COMPUTER SKILLS

I have experience with Matlab, GAP, SageMath, Magma, Maple, LaTeX, Office

PUBLICATIONS

- Ramy Taki Eldin. Matrix product and quasi-twisted codes in one class. *Journal of Computational and Applied Mathematics*, 43(2):10.1007/s40314-024-02612-x, February 2024.
- Adel Alahmadi, Patrick Solé, and Ramy Taki Eldin. Lower bound on the minimum distance of single-generator quasi-twisted codes. *Mathematics*, 11(11):2539, May 2023.
- Ramy Takieldin and Patrick Solé. Generator polynomial matrices of the Galois hulls of multi-twisted codes. 2023.
- Ramy Taki Eldin. Two-sided Galois duals of multi-twisted codes. *Journal of Applied Mathematics and Computing*, 69(4):3459–3487, June 2023.
- Ramy Takieldin. Multi-twisted codes as free modules over principal ideal domains. 2022.
- Ramy Takieldin and Hajime Matsui. Linking reversed and dual codes of quasi-cyclic codes. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, E105.A(3):381–388, March 2022.
- Karim El-Abbasy, Ramy Takieldin, Salwa El Ramly, and Bassant Abdelhamid. Optimized polar codes as forward error correction coding for digital video broadcasting systems. *Electronics*, 10(17):2152, September 2021.
- Karim El-Abbasy, Ramy Takieldin, Salwa El-Ramly, and Bassant Abdelhamid. Generalized schematic successive cancellation decoding for polar codes. In *2021 IEEE International Black Sea Conference on Communications and Networking (BlackSeaCom)*. IEEE, May 2021.
- Hai Q. Dinh, Ramy Takieldin, Bac T. Nguyen, and Roengchai Tansuchat. MDS constacyclic codes of prime power lengths over finite fields and construction of quantum MDS codes. *International Journal of Theoretical Physics*, 59(10):3043–3078, August 2020.
- Ramy Takieldin and Hajime Matsui. On reversibility and self-duality for some classes of quasi-cyclic codes. *IEEE Access*, 8:143285–143293, 2020.
- Ramy Takieldin and Hajime Matsui. Run-length constraint of cyclic reverse-complement and constant GC-content DNA codes. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, E103.A(1):325–333, January 2020.
- Karim El-Abbasy, Ramy Takieldin, Salwa Elramly, and Bassant Abdelhamid. Polar codes bhattacharyya parameter generalisation. *IET Communications*, 14(11):1718–1729, July 2020.
- Abeer Samir, Wassim Alexan, Ramy Takieldin, and Ahmed El-Rafei. 3D steganography by random shuffling of image contents using residue model. In *2020 4th International Conference on Electronics, Communication and Aerospace Technology (ICECA)*. IEEE, November 2020.
- Ramy Takieldin and Hajime Matsui. Good reversible quasi-cyclic codes via unfolding cyclic codes. *IEICE Communications Express*, 9(12):668–673, December 2020.
- Hai Q. Dinh, Ramy Takieldin, and Jirakom Sirisrisakulchai. Novel indexing of cyclic codes with run-length applications. *IEEE Access*, 7:179037–179047, 2019.
- Ramy Takieldin and Hajime Matsui. Quasi-cyclic codes via unfolded cyclic codes and their reversibility. *IEEE Access*, 7:184500–184508, 2019.
- Ramy Takieldin. On the number of incongruent solutions to a quadratic congruence over algebraic integers. *International Journal of Number Theory*, 15(01):105–130, February 2019.
- Ramy Takieldin and Hajime Matsui. On constant GC-content cyclic DNA codes with long codewords. In *2018 International Symposium on Information Theory and Its Applications (ISITA)*. IEEE, October 2018.
- Ramy Takieldin and Hajime Matsui. Generating binary quasi-cyclic reversible codes. *The 2018 International Symposium on Information Theory and Its Applications (ISITA2018)*, pages 514–514, 2018.
- Ramy Takieldin. Applying modular arithmetic to diophantine equations. *Integers*, 18(A64), 2018.
- Ramy Takieldin, Rabab M. El-Hassani, and Salwa H. El-Ramly. A novel high-speed systematic encoder for long binary cyclic codes. *IEEE Communications Letters*, 17(5):984–987, May 2013.
- Ramy Takieldin, Rabab M. El-Hassani, and Salwa H. El-Ramly. Optimizing chien search usage in the BCH decoder for high error rate transmission. *IEEE Communications Letters*, 17(4):741–744, April 2013.