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1. RESEARCH INTEREST

ALGEBRA) Commutative Ring Theory : Multiplicative Ideal Theory. My most work is devoted to ϕ -Commutative Rings: a class of commutative rings that I defined and it contains the class of integral domains. My work focuses on : ϕ -Valuation domains (ϕ -Chained rings), ϕ -Pseudo-Valuation rings, ϕ -Integral Closure of rings, ϕ -Noetherian rings, ϕ -Prufer rings, ϕ -Dedekind rings, and ϕ -Krul rings. Other interests include : n -Absorbing Ideals (a concept that I defined and it is a generalization of the concept of prime ideals), Finite Fields, Zero-Divisor Graphs, Total Graphs, and π -Regular rings.

2. PUBLICATIONS

- (1) A. Badawi and A. Jaballah, " Some finiteness conditions on the set of overrings of a ϕ -ring," Houston J. Math. 34(2) (2008), 397-407.
- (2) A. Badawi and D.F. Anderson, "On the zero-divisor graph of a ring," ACCEPTED, to appear in Comm. Algebra.
- (3) A. Badawi, " On 2-absorbing ideals of commutative rings," Bull. Austral. Math. Soc. 75(2007), 417-429.
- (4) A. Badawi, " On Pseudo-almost valuation domains," Comm. Algebra 35(2007), 1167-1181.
- (5) A. Badawi and Thomas Lucas, "on ϕ -Mori rings," Houston J. Math.32(2006), 1-31.
- (6) A. Badawi and D. E. Dobbs, " Strong ring extensions and ϕ -pseudo-valuation rings," Houston J. Math.32(2006), 379-398.
- (7) A. Badawi, "Factoring nonnil ideals as a product of prime and invertible ideals," Bulletin of the London Math. Society 37(2005), 665-672.
- (8) A. Badawi and D. F. Anderson, " on ϕ -Dedekind rings and ϕ -Krull rings," Houston J. Math.31(2005), 1007-1022.
- (9) A. Badawi and D. F. Anderson,"On ϕ -Prufer rings and ϕ -Bezout rings," Houston J. Math. 30(2004), 331-343.
- (10) A. Badawi, "A Characterization of valuation domains via m -canonical ideals," Comm. Algebra 32(2004), 4363-4374.
- (11) A. Badawi, " On nonnil-Noetherian rings," Comm. Algebra 31(2003), 1669-1677.

- (12) A. Badawi and D. F. Anderson, "Divisibility conditions in commutative rings with zerodivisors," *Comm. Algebra* 38(2002), 4031-4047.
- (13) A. Badawi and E. Houston, "Powerful ideals, strongly primary ideals, almost pseudo-valuation domains, and conducive domains," *Comm. Algebra* 30(2002), 1591-1606.
- (14) A. Badawi, A. Y. M. Chin, and H. V. Chen, "On rings with near idempotent elements," *International J. of Pure and Applied Mathematics*, 1(2002), 255-261
- (15) A. Badawi, "On Divided rings and ϕ -pseudo-valuation rings," *International J. Comm. Rings (IJCR)*, Vol. 1(2002), 51-60.
- (16) A. Badawi and D. F. Anderson, "On root closure in commutative rings," *Arabian J. of Science and Engineering (Arabian J. Sci. Engrg)*, Vol. 26, 1C(2001), 17-30.
- (17) A. Badawi and David E. Dobbs, "On Locally divided rings and going down rings," *Comm. Algebra*. 29(2001), 2805-2825.
- (18) A. Badawi, "On ϕ -chained rings and ϕ -pseudo-valuation rings," *Houston J. Math* 27(2001), 725-736.
- (19) A. Badawi, "On ϕ -pseudo-valuation rings, II," *Houston J. Math*. 26(2000), 473-480.
- (20) A. Badawi, "Remarks on pseudo-valuation rings", *Comm. Algebra* 28(2000), 2343-2358.
- (21) A. Badawi, "On Chained overrings of pseudo-valuation rings," *Comm. Algebra* 28(2000), 2359-2366.
- (22) A. Badawi and D. F. Anderson and D. E. Dobbs "Pseudo-valuation rings II," *Boll. Un. Mat. Ital. B(8)3(2000)*, 535-545.
- (23) A. Badawi, "On divided commutative rings," *Comm. Algebra* 27(1999), 1465-1474.
- (24) A. Badawi, "On comparability of ideals of commutative rings," *Comm. Algebra* 26(1998), 793-802.
- (25) A. Badawi, "On Abelian π -regular rings," *Comm. Algebra* 25(1997), 1009-1021.
- (26) A. Badawi, "On domains which have prime ideals that are linearly ordered," *Comm. Algebra* 23(1995), 4365-4373.
- (27) A. Badawi, "On semicommutative π -regular rings," *Comm. Algebra* 22(1994), 151-157.
- (28) A. Badawi, " R_n contains a division ring iff R does," *Amer. Math. Monthly*, 100(1994), 679-680.
- (29) A. Badawi, "A Counter example for a question on pseudo-valuation rings," *Abelian Groups, Rings, Modules, and Homological Algebra*, Chapman & Hall/CRC, Vol. 249 (2006), 23-27.
- (30) A. Badawi and Thomas Lucas, "Rings with prime nilradical," *Arithmetical Properties of Commutative Rings and Monoids*, Chapman & Hall/CRC, Vol. 241(2005), 198-212.
- (31) A. Badawi, "On the complete integral closure of rings that admit a ϕ -strongly prime ideal," *Lecture Notes Pure Appl. Math.* Vol. 231(2002), 15-22. Marcel Dekker, New York/Basel.

- (32) A. Badawi, "Pseudo-valuation domains: A Survey," Proceedings of the Third Palestinian International Conference on Mathematics, 38-59(2002), Word Scientific Publishing Co., New York/London.
- (33) A. Badawi, "On ϕ -pseudo-valuation rings," Advances in commutative ring theory, Lecture Notes Pure Appl. Math. Vol.205(1999), 101-110, Marcel Dekker, New York/Basel.
- (34) A. Badawi, "A visit to valuation and pseudo-valuation domains," Lecture Notes Pure Appl. Math. Vol. 185(1995), 57-69, Marcel Dekker, New York/Basel.
- (35) A. Badawi and D. E. Dobbs, "Some examples of locally divided rings," Lecture Notes Pure Appl. Math., Vol. 220(2001), 73-83. Marcel Dekker, New York/Basel.
- (36) A. Badawi and D. F. Anderson, "Conditions equivalent to seminormality in certain classes of commutative rings," Lecture Notes Pure Appl. Math., Vol. 220(2001), 49-59, Marcel Dekker, New York/Basel.
- (37) A. Badawi and D. F. Anderson and D. E. Dobbs, "Pseudo-valuation rings," Lecture Notes Pure Appl. Math. Vol. 185(1997), 57-67, Marcel Dekker, New York/Basel.

3. BOOKS

- (1) A. Badawi, "Focus on Commutative Rings Research," Nova Science, New York, U. S. A. (2006), ISBN 1-60021-065-1.
- (2) A. Badawi, Mahmoud Anabtawi, David F. Anderson, and Saber Elaydi, "Mathematics Research at the Leading Edge," Nova Science, New York, U. S. A., (2005). THIS IS THE PROCEEDINGS OF THE UAE-MATH DAY WHICH WAS HELD in APRIL, 2003 at the AUS.
- (3) A. Badawi, "Abstract Algebra Manual: Problems and Solutions," published by Nova Science, 2nd Edition (New York)(2004), ISBN 1-59033-924-X.
- (4) A. Badawi (editor), Trends in Commutative Rings Research, Nova Science, New York, U. S. A., (2004), (English), ISBN 1-59033-926-6.