CURRICULUM VITAE
CV

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Education:

1985 – 1989: B.Sc. (Mathematics) - Tishreen University - Syria.

1995 – 1998: M.Sc. (On Domination Number in Graphs) - Ain Shams University - Egypt.

1998 – 2001: PhD (Domination Number in Graphs and Vizing's Conjecture) - Ain Shams University Egypt.

Working experience:

1989 – 1995: Assistant lecturer, Department of Mathematics, Tishreen University, Syria.

2001 – 2006: Assistant Professor, Department of Mathematics and Mathematical Statistics, Tishreen University, Aleppo University, Al-bath University, and Aljazeera Private University, Syria.

2006 – 2007: Visitor Doctor , Department of Pure Mathmatics and Mathematical Statistics, University of Cambridge, United Kingdom.

2007 – 2012: Visitor, Department of Mathematics, Umm Al-Qura University, Kingdom of Saudi Arabia.

2012 – 2017: Associate Professor, Department of Mathematics and Mathematical Statistics, Tishreen University, Syria.

2018 – 2022 : Professor, Department of Mathematics and Mathematical Statistics, Tishreen University, Syria.

A wards and Honours :

1995: M.Sc. Scholarship from University of **Ain Shams** - Egypt.

1998: Ph.D. Scholarship from University of **Ain Shams** - Egypt.

2006: Awards from **Kuwait Foundation**. For visiting Position in Cambridge University, (1_{st} – only one Position available for all Universities from Arabic Countries).

2018-2019-2020: Awards from **Marquis Who's Who** has selected me for our official Albert Nelson Marquis Lifetime Achievement Award. My biography accepted into Marquis Who's Who, which is comprised of the top 3% of the professionals in the world for three consecutive years 2018, 2019 and 2020.

2019-2021: Membership of the American Mathematical Society.

2021: Membership of the Universal Scientific Education and Research Network (USERN).

Publications:

1- Domination number of the product of two cycles I . 36th Science conference, Syria, 2(1996) 453-465, (with Mohamed H. El-Zahar).

2- The domination number $C_8 \times C_n$ and $C_9 \times C_n$, Journal of the Egyptian Mathematical Society, 7(2) (1999), 151-166, (with Mohamed H. El-Zahar).

3- On the domination number of the m×n Toroidal Grid Graph., Congressus Numerantium, 146 (2000) 187-200.

4- Algorithms for computing the Domination Graphs, Congressus Numerantium, 152 (2001) 215 - 221.

5- Algorithms for Finding a Dominating Set and the Domination Number of Toroidal Grid Graphs, International Journal of Applied Mathematics, Volume 8, No 3 (2002) 341-350, (with Ghaleb Fayed).

6- Bounds for the domination number of Toroidal grid graphs, Journal of the Egyptian Mathematical Society, 10 (2002), 103–113,(with Mohamed H. El- Zahar).

7- On the Domination number of the product of two cycles. Ars Combinatoria, 84(2007), 51-64, (with Mohamed H. El-Zahar).

8- Domination Number of Toroidal Grid Digraphs, J. Utilitas Mathematica 78 (2009), 175-184.

9- Bounds for the 2-Domination Number of Toroidal Grid Graphs, International Journal Computer of Mathematics, Volume 86, Issue 4(2009), 584-588.

10- On the Domination Number of Cartesian Products of Two Directed Paths., Int. J. Contemp. Math. Sciences, Vol. 7, no. 36, 1785 – 1790(2012).

11– On the 2-Domination Number of Cartesian Products of two Cycles., J. Advances and Applications in Discrete Mathematics., Vol.12, no.1, 83–108 (2013).

12- Total Domination Number of Products of Two Directed Cycles., J . Utilitas Mathematica., 92, 235-250 (2013).

13- On the Signed Domination Number of the Cartesian Products of two Directed Cycles., Open Journal of Discrete Mathematics., 5 (2015), 54-64.

14- The relation between the staircase kernel and the position of the three staircase paths of the bounded component for the complement., Tishreen University Journal

for Research and Scientific Studies - Basic Sciences Series Vol. (37) No (4) (2015), 99-114. (with Adnan Zarif, Njod Hassan).

15- The Influence of the Bounded Component for the Complement in a Starshaped Orthogonal Polygon on its Kernel, Tishreen University Journal for Research and Scientific Studies - Basic Sciences Series Vol. (37) No. (1), (2015), 91-108. (with Adnan Zarif, Njod Hassan)

16- Total Domination Number of Strong Products of Directed Cycles., J. Utilitas Mathematica., Utilitas Mathematica., 99 (2016), 89-100.

17- The Signed Domination Number of Cartesian Products of Directed Cycles., Journal of Progressive Research in Mathematics., 6(2), (2016). 770-777.

18- Specifying the staircase kernel of a two-fold connected orthogonal polygon**,** Beiträge zur Algebra und Geometrie / Contributions to Algebra and Geometry., 22 June (2016), 1-13. (with Adnan Zarif, Njod Hassan)

19- The rainbow restrained domination numbers in graphs., IEEE Access, Date of publication xxxx 00, 0000, date of current version xxxx 00, 0000. Digital Object Identifier 10.1109/ACCESS.2017.DOI, VOLUME 4, 2016.

20- Lower and upper bounds of 2- domination number of the $P_m \times P_n$ for m = 6, 7 and arbitrary n, Tishreen University Journal for Research and Scientific Studies-Basic Sciences Series Vol. (39) No. (1), (2017), 123-141. (with Suhail Mahfud, Khames Almanea)

21- On the 2-Domination Number of Complete Grid Graphs., Open Journal of Discrete Mathematics., 7 (2017), 32-50, (with Suhail Mahfud, Khames Almanea)

22- The Domination Number of $P_m \times \overrightarrow{P_n}$., Journal of Advances in Mathematics and Computer Science 20(3) (2017), 1-11, (with Mohammad Assaad).

23- Signed Domination number of Complete Directed Grid Graph., Asian Journal of Mathematics and Computer Research., 18(2): 67-75, 2017 (with Xiujun Zhang).

24- On Signed Domination Number of Cartesian Products of Directed Paths., Asian Journal of Mathematics and Computer Research., 18(3): 113-119, 2017 (with Zhiqiang Zhang)**.**

25- d-Distance Coloring of Generalized Petersen Graphs P(n, k)., Open Journal of Discrete Mathematics., 7 (2017), 185-199., (with Ziad Kanaya, Samar Jakhlab).

26- K-Domination Number of Products of Two Directed Cycles and Two Directed Paths., J. International Journal of Computing Science and Mathematics., 9(2) (2018), 197-206.

27- The rainbow restrained domination in torus network., 2018 IEEE International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery, (2018), 393-400., (with Yongsheng Rao, Pu Wu, Zehui Shao, S.M. Sheikholeslami, Lanxiang Chen).

28- On Independent Domination Numbers of Grid and Toroidal Grid Directed Graphs., Communications in Combinatorics and Optimization., 4(1) (2019), 71-77.

29- Domination and Eternal Domination of Jahangir Graph, Open Journal of Discrete Mathematics., 9 (2019), 68-81., (with Mohammad Assaad, Ali Kassem).

30- Wiener index of generalized petersen graph P(n, 4)., Tartous University Journal for Research and Scientific Studies 3(1) (2019) (with Suhail Mahfud, Qays Alhwat).

31- Game Chromatic Number of some regular Graphs, Open Journal of Discrete Mathematics., 9 (2019), 159-164., (With Ziad Kanaya, Khaled Alshehada).

32- Some Invariants of Cartesian Product of a path and a complete bipartite graph., International Journal of Discrete Mathematics., 4(2) (2019), 61-70., (With Suhail Mahfud, Qays Alhwat).

33- Game Chromatic Number Of Generalized Petersen Graphs and Jahangir Graphs., Journal of Applied Mathematics., Volume (2020), 1-4, (With Ziad Kanaya, Khaled Alshehada).

34- On Domination Number of Mixed-Grid Graph., Current Trends on Biostatistics & Biometrics., 2(3)-(2020), 221-226.

35- Erratum to "Domination in Jahangir Graph $J_{2,m}$"., International Journal of Contemporary Mathematical Sciences., Accepted (2021).

36- The Hosoya Polynomial, Wiener Index And Hyper-Wiener Index Of Jahangir Graph $J_{8,m}$., Online Journal of Analytic Combinatorics Volume 15 (2020), 1-9, (with Suhail Mahfud, Qays Alhwat).

37- Eternal Domination of Generalized Petersen Graph, Journal of Applied Mathematics., Volume (2021), 1-10, ID 6627272, (with Ali Kassem).

38- On Eternal Domination of Generalized Js,m, Journal of Applied Mathematics., Volume (2021), 1-7, ID 8882598, (with Mohammad Assaad, Ali Kassem).

39- Irreversible k-Threshold Conversion Number of Strong Product of Two Paths when k = 2, 3., Tishreen University Journal for Research and Scientific Studies Basic Science Series., 2022; 44(3): 67-82., (with Suhail Mahfud, Ali Kassem).

40- Irreversible k-Threshold Conversion Number of Circulant Graphs., Journal of Applied Mathematics, vol. 2022, Article ID 1250951, 14 pages, 2022. https://doi.org/10.1155/2022/1250951, (with Suhail Mahfud, Ali Kassem).

41- Chromatic Schultz and Gutman Polynomials of Jahangir Graphs J(2,m) and J(3, m), Journal of Applied Mathematics, Volume 2023, Article ID 4891083, 13 pages, https://doi.org/10.1155/2023/4891083 (with Suhail Mahfud, Qays Alhwat).

42- Irreversible k-threshold conversion number of some graphs. Arab Journal of Mathematical Sciences. 2022, Vol. ahead of print, No. ahead of print. Doi: https://doi.org/10.1108/AJMS-07-2021-0150., (with Suhail Mahfud, Ali Kassem).

43- Hosoya, Schultz and Gutman polynomial of generalized Petersen graph P(n,1) and P(n, 2)., Journal of Mathematics, Volume 2023, Article ID 7341285, 18 pages https://doi.org/10.1155/2023/7341285 (with Suhail Mahfud, Qays Alhwat).

44- Some topological indices and polynomials of Cartesian Product of two Paths,. Tishreen University Journal for Research and Scientific Studies Basic Science Series., 45 (2023). (with Suhail Mahfud, Qays Alhwat).

45- Chromatic Schultz polynomial of Join a Complete Graph with a Complete bipartite Graph, Tartous University Journal. 6 (2022),. (with Suhail Mahfud, Qays Alhwat).

46- [r, k]-limited domination number of graph., Submitted.

47- Erratum to "Some Domination Parameters in Generalized Jahangir Graph $J_{n,m}$., Submitted.

48- Irreversible k-Threshold Conversion Diffusion Process on Some Families of Graphs., Submitted, (with Suhail Mahfud, Ali Kassem).

49- Some indices and polynomials of Cartesian Product of complete bipartite graph $K_{1,n}$ and a Cycle C_m., Submitted, (with Suhail Mahfud, Qays Alhwat).

50- 2-Rainbow domination number of circulant graphs C(n,{1,4})., Submitted, (with Suhail Mahfud, Mohammed Adrah).

51- Irreversible K-Threshold Conversion Number of Strong Grids for K > 3., Submitted, (with Suhail Mahfud, Ali Kassem).

52- A New Invariant Regarding Irreversible k-Threshold Conversion Processes on Graphs., Submitted, (with Suhail Mahfud, Ali Kassem).

53- Hosoya, $M-$Polynomial and some topological indices of Cartesian Product of Path and Wheel., Submitted, (with Suhail Mahfud, Qays Alhwat).

54- The chromatic Schultz polynomials and the expanded Hosoya polynomial of Jahangir Graph $J_{(4,m)}$., Submitted, (with Suhail Mahfud, Qays Alhwat).

55- Some Chromatic Polynomials and indices of Jahangir Graph $J_{(5,m)}$., Submitted, (with Suhail Mahfud, Qays Alhwat).

Papers selected as chapter in international books:

1- Paper entitled "**On the Signed Domination Number of the Cartesian Product of Two Directed Cycles**"

published in Open Journal of Discrete Mathematics, 2015, 5, 54-64.

Book name: Recent Studies in Mathematics and Computer Science.

2- Paper entitled " **Signed Domination number of Complete Grid Graph**"

published in Asian Journal of Mathematics and Computer Research, 2017, 18(2): 67-75.

Book name: Theory and Applications of Mathematical Science.

3- Paper entitled "**The Domination Number of $\boldsymbol{P_m \times \overrightarrow{P_n}}$**"

published in Journal of Advances in Mathematics and Computer Science 20(3) (2017), 1-11.

Book name: Advances in Mathematics and Computer Science.

4- Paper entitled " **Game Chromatic Number of Generalized Petersen Graphs and Jahangir Graphs**"

published in Journal of Applied Mathematics Volume (2020), 1-4, Article ID 6475427.

Book name: Theory and Practice of Mathematics and Computer Science, e-Book ISBN: 978-93-90149-22-3, Print ISBN: 978-93-90149-72-8.

5- Paper entitled " **Domination and Eternal Domination of Jahangir Graph**"

published in Journal Open Journal of Discrete Mathematics, 2019, 9, 68-81.

Book name: Theory and Practice of Mathematics and Computer Science, e-Book ISBN: 978-93-90149-22-3, Print ISBN: 978-93-90149-72-8.

6- Paper entitled " **Game Chromatic Number of Some Regular Graphs**"

published in Journal Open Journal of Discrete Mathematics, 2019, 9, 159-164.

Book name: Theory and Practice of Mathematics and Computer Science, e-Book ISBN: 978-93-90149-22-3, Print ISBN: 978-93-90149-72-8.

7- Paper entitled " **On the 2-Domination Number of Complete Grid Graphs**"

published in Journal Open Journal of Discrete Mathematics, 2017, 7, 32-50.

Book name: Theory and Practice of Mathematics and Computer Science, e-Book ISBN: 978-93-90149-22-3, Print ISBN: 978-93-90149-72-8.

8- Paper entitled " **d-Distance Coloring of Generalized Petersen Graphs P(n, k)**"

published in Journal Open Journal of Discrete Mathematics, Open Journal of Discrete Mathematics, (2017), 7, 185-199.

Book name: Theory and Practice of Mathematics and Computer Science, e-Book ISBN: 978-93-90149-22-3, Print ISBN: 978-93-90149-72-8.

9- Paper entitled " **On the Signed Domination Number of the Cartesian Product of Two Directed Cycles**"

published in Journal Open Journal of Discrete Mathematics, Open Journal of Discrete Mathematics, (2015), 5, 54-64.

Book name: Theory and Practice of Mathematics and Computer Science, e-Book ISBN: 978-93-90149-22-3, Print ISBN: 978-93-90149-72-8.

10- Paper entitled " **On Signed Domination Number of Cartesian Products of Directed Paths**"

published in Journal Asian Journal of Mathematics and Computer Research, (2017), 18(3): 113-119,.

Book name: Theory and Practice of Mathematics and Computer Science,.

11- Paper entitled **"On the Domination Number of CartesianProducts of Two Directed Paths"**

published in Journal Int. J. Contemp. Math. Sciences, Vol. 7, 2012, no. 36, 1785 – 1790.

Book name: Current Topics on Mathematics and Computer Science.

12- Paper entitled **'' On the Domination Number of Cartesian Products of Two Directed Paths"**

published in Journal Int. J. Contemp. Math. Sciences, Vol. 7, 2012, no. 36, 1785 – 1790.

Book name: Recent Advances in Mathematical Research and Computer Science.

13- Paper entitled **'' The Signed Domination Number of Cartesian Products of Directed Cycles"**

published in Journal of Progressive Research in Mathematics., 6(2), (2016). 770-777.

Book name: Recent Advances in Mathematical Research and Computer Science (Series).

14- Paper entitled **'' Eternal Domination of Generalized Petersen Graph"**

published in Journal of Applied Mathematics., Volume (2021), 1-10, ID 6627272.

Book name: Recent Advances in Mathematical Research and Computer Science.

15- Paper entitled **'' d-Distance Coloring of Generalized Petersen Graphs P(n, k)"**

published in Open Journal of Discrete Mathematics., 7 (2017), 185-199.

Book name: Recent Advances in Mathematical Research and Computer Science.

Projects:

1- Domination number of Products of Directed Graphs (Project supported by Umm Al-Qura University (43005014- 129/430 – 2009)).

2- On The Domination Number of Cartesian Products of Two Directed Paths (Project supported by Saudi Basic Industries Corporation (SABIC), through the Institute of Research and Consulting Studies University of Umm Al-Qura).

Conferences:

1- On Domination number of the product of two cycles. 36th Science Conference, Aleppo University, Syria, 2(1996) 453-465.

2- The Domination number of the product of $C_7 x C_n$. 37th Science Conference, Damascus University, Syria, 2(1997) 799-810.

3- Domination in graphs and Vizing's Conjecture., Third International Scientific Conference, Al-Azhar University, Cairo, Egypt, March (1999).

4- K-Domination Number of the Grid Graphs, Conference of Informatics and Communication, Syria, Aleppo University (2003).

5- Bounds for the 2-Domination Number of Toroidal Grid Graphs, First Scientific Conference of Mathematics, Alzerqa University, Jordan, April 18-20 (2006).

6- Independent Domination Number of Cartesian Product of Directed Paths and Directed Cycles, Conference of Colourings, Independence and Domination, September 16-21 (2007), Karpacz, Poland.

7- Domination Number of Grid Digraphs, The Second International Conference on Mathematics: Trends and Developments (ICMTD 2007), December 27 – 30, 2007, Cairo, Egypt.

8- The rainbow restrained domination in torus network., 2018 IEEE International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery, October 18-20, (2018), Zhengzhou, China.

Supervisor:

- Master : Mazen Mostafa (On Domination number of Cartesian product of Directed Graphs), 2014.

- Ph.D: Njod Hassan (Development of Starshaped Sets by using Staircase Visibility), 2016.

- Master: Khames ALmanea (Study of K-Domination number of Graphs), 2017.

- Master: Samar Jakhlab (d-Distance Coloring for Some Graphs), 2018.

- Master: Qays Alhwat (Study of the Wiener Index for Some Graphs), 2019.

- Master: Ali Kassem (Eternal Domination in Graphs), 2020.

- Master: Kaled Alshehada (Game Chromatic Number of Regular Graphs), 2020.

- Master Mohamed Adrah (2-rainbow domination on some undirected graphs) 2023.

- Ph.D: Qays Alhwat (Study on chromatic indices and polynomial of some graphs).

- Ph.D: Ali Kassem (irreversible k-threshold conversion diffusion problem in **graphs).**

Reviewer of Journals:

- Permanent Reviewer of American Mathematical Society.
- Journal Discrete Mathematics.
- Journal Discrete Applied Mathematics.
- Journal Information Processing Letters.
- Journal Utilitas Mathematica.
- Journal Applied Mathematics Letters.
- Journal Computers and Mathematics with Applications.
- Asian Journal of Mathematics and Computer Research.
- International Journal of Discrete Mathematics.
- Journal of Natural and Applied Sciences Pakistan (JNASP)

Member of the Editorial Board of Journals:

- International Journal of Discrete Mathematics.
- Current Trends on Biostatistics and Biometrics (CTBB).
- Journal of Applied Mathematics and Computation

Books:

1- Graph Theory, Department of Mathematics, Tishreen University, Lattakia, Syria, 2010.

Teaching Courses:

1. Computer Programming for 1st year students, Mathematical, 3 hours per week.

2. Advanced Computer Programing for 4th year students, Computer Science, 3 hours per week.

3. Numerical Analysis for 4th year students, Computer Science, 3 hours per week.

4. Computer Programming and Advanced Algorithms for 4th year students, Computer Science, 3 hours per week.

5. Numerical Analysis for 3rd year students, Physics, 3 hours per week.

6. Computer Programming and Algorithms for 2nd year students, Statistics, 3 hours per week.

7. Computer Programming for 4th year students, Chemistry, 3 hours per week.

8. Advanced Programming for Master Students, Computer Science, 3 hours per week.

9. Computer Programming for 2nd year students, Biology, 3 hours per week.

10. Advanced Programming for Master Students, Mathematical, 3 hours per week.

11. Computer Programming for 2nd year students, Chemistry, 3 hours per week.

12. linear algebra for 1nd year students, Mathematical, 2 hours per week.

13. Set Theory for 2nd year students, Mathematical, 2 hours per week.

14. Mathematics 1 for 1nd year students of faculty of science, 3 hours per week.

15. Mathematics 2 for 1nd year students of faculty of science, 3 hours per week.

16. Calculus 1 for the preparatory year students, 4 hours per week.

17. Calculus 2 for the preparatory year students, 4 hours per week.

18. Principles of Computers Work for 1nd year students, Mathematical statistic, 2 hours per week.

19. Information and Computer for 2nd year students, Chemistry, 2 hours per week.

20. Information and Computer for 2nd year students, physics, 2 hours per week.

21. Information and Computer for 2nd year students, geology, 2 hours per week.

22. Graph Theory for 3rd year students, Mathematical, 3 hours per week.

23. Graph Theory and Algorithms for Master Students, Applied mathematics, 3 hours per week.

24. Algorithms1 for 1nd year students, Statistics, 3 hours per week.

25. Analysis of algorithms for 3rd year students, Applied mathematics, 4 hours per week.

26. Graph algorithms for 4rd year students, Applied mathematics, 4 hours per week.

27. Data base for 4rd year students, Applied mathematics, 4 hours per week.

28. Numerical Solution Methods for engineering students 2 hours per week.

29. Statistics and probability for engineering students 2 hours per week.

Dr. Ramy Shaheen
6-1-2024