

# **PROJECT 174033: GRAPH THEORY AND MATHEMATICAL PROGRAMMING WITH APPLICATIONS TO CHEMISTRY AND COMPUTER SCIENCE**

## **Publications in 2015.**

### **MONOGRAPHS AND CHAPTERS IN MONOGRAPHS**

1. Z. Stani ,  
*Inequalities for Graph Eigenvalues*,  
Cambridge University Press, LMS Lecture Note Series, 2015.

### **JOURNAL PAPERS**

#### **Subproject 1: Spectral graph theory**

1. I. Jovovi , T. Koledin, Z. Stani ,  
Non-bipartite graphs of fixed order and size that minimize the least eigenvalue,  
*Linear Algebra and its Applications*, Vol. 477, pp. 148-164, 2015.

2. L. Feng, G. Yu, A. Ili , D. Stevanovi ,  
The signless Laplacian spectral radius of bounded degree graphs on surfaces,  
*Appl. Anal. Discrete Math.*, Vol. 9, pp. 332-346, 2015.

3. D. Stevanovi , I. Gutman, M.U. Rehman,  
On Spectral Radius and Energy of Complete Multipartite Graphs,  
*Ars Math. Contemp.*, Vol. 9, pp. 109-113, 2015.

4. M. Andjeli , E. Andrade, D.M. Cardoso, C.M. da Fonseca, S.K. Simi , D.V. To-i ,  
Some new considerations on double nested graphs,  
*Linear Algebra and Its Applications*, Vol. 483, pp. 323-341, 2015.

5. F. Belardo, S.K. Simi ,  
On the Laplacian coefficients of signed graphs,  
*Linear Algebra and Its Applications*, Vol. 476, pp. 94-113, 2015.

6. D. Cvetkovi , P. Rowlinson, S.K. Simi ,  
Graphs with least eigenvalue -2: Ten years on,  
*Linear Algebra and Its Applications*, Vol. 483, pp. 504-539, 2015.

7. M. Petrović, S. Simić,  
 A note on connected bipartite graphs of fixed order and size with maximal index,  
*Linear Algebra and Its Applications*, Vol. 483, pp. 21-29, 2015.
8. S.K. Simić, M. Andjelić, C.M. da Fonseca, D. Živković,  
 Notes on the second largest eigenvalue of a graph,  
*Linear Algebra and Its Applications*, Vol. 465, pp. 262-274, 2015.
9. S.K. Simić, D. Živković, M. Andjelić, C.M. da Fonseca,  
 Reflexive line graphs of trees,  
*Journal of Algebraic Combinatorics*, DOI 10.1007/S10801-015-0640-Z, 2015.
10. S.K. Simić, M. Andjelić, C.M. da Fonseca, D. Živković,  
 On the multiplicities of eigenvalues of graphs and their vertex deleted subgraphs: old and new results,  
*Electronic Journal of Linear Algebra*, Vol. 30, Article 6, 2015.
11. F. Belardo, T. Pisanski, S.K. Simić,  
 On connected graphs with least eigenvalue greater than -2,  
*Linear and Multilinear Algebra*, DOI: 10.1080/03081087.2015.1107020.
12. I.M. Jovanović,  
 Some results on spectral distances of graphs,  
*Revista de la Unión Matemática*, Vol. 56, No. 2, pp. 95-117, 2015.

## **Subproject 2: Chemical graph theory**

1. S. Radenković, J. Toović, J. Nikolić,  
 Local Aromaticity in Naphtho-Annealed Fluoranthenes: Can the five-membered rings be more aromatic than the six-membered rings?,  
*Journal of physical chemistry A*, Vol. 119, pp. 4972-4982, 2015.
2. J. Dj. Nikolić, S. Wouters, J. Romanova, A. Shimizu, B. Champagne, T. Junkers, D. Van der Zande, D. Van Neck, M. Waroquier, V. Van Speybroeck, S. Catak,  
 PPV Polymerization through the Gilch Route: Diradical Character of Monomers,  
*Chemistry. A European Journal*, DOI: 10.1002/chem.201501900, 2015.
3. S. Radenović, T. Do-enović, T. Aleksić Lampert, Z. Golubović,  
 A note on some recent fixed point results for cyclic contractions in b-metric spaces and an application to integral equations,  
*Applied Mathematics and Computation*, Vol. 273, pp. 155-164, 2015.
4. B. Borovićanin, T. Aleksić Lampert,  
 On the maximum and minimum Zagreb indices of trees with a given number of vertices of maximum degree,  
*MATCH Communications in Mathematical and in Computer Chemistry*, Vol. 74, pp. 81-96, 2015.

5. B. Borovi anin,  
On the extremal Zagreb indices of trees with given number of segments or given number of branching vertices,  
*MATCH Communications in Mathematical and in Computer Chemistry*, Vol. 74, pp. 57-79, 2015.
6. I. Gutman, B. Furtula, X. Chen, J. Qian,  
Graphs with smallest resolvent Estrada indices,  
*MATCH Communications in Mathematical and in Computer Chemistry*, Vol. 73, pp. 267-270, 2015.
7. S. Gong, X. Li, G. Xu, I. Gutman, B. Furtula,  
Borderenergetic graphs,  
*MATCH Communications in Mathematical and in Computer Chemistry*, Vol. 74, pp. 321-332, 2015.
8. I. Gutman, B. Furtula, fi. Kovijani Vuki evi , G. Popivoda,  
On Zagreb indices and coindices,  
*MATCH Communications in Mathematical and in Computer Chemistry*, Vol. 74, pp. 5-16, 2015.
9. I. Gutman, B. Furtula, X. Chen, J. Qian,  
Resolvent Estrada index - computational and mathematical studies,  
*MATCH Communications in Mathematical and in Computer Chemistry*, Vol. 74, pp. 431-440, 2015.
10. B. Furtula,  
Assessing "pi"-electron contents of rings in polycyclic aromatic compounds,  
*Current Organic Chemistry*, Vol. 19, pp. 331-347, 2015.
11. S. Radenkovi , I. Gutman, S. or evi ,  
Strain in strainófree benzenoid hydrocarbons: The case of phenanthrene,  
*Chemical Physics Letters*, Vol. 625, pp. 69672, 2015.
12. S. Mandal, S. Pan, D. Deb, S. Giri, S. Duley, S. Radenkovi , D. L. Cooper, P. Bultinck, A. Anoop, M. Bhattacharjee, P. K. Chattaraj,  
Three-dimensional networks containing rectangular Sr4 and Ba4 units: Synthesis, structure, bonding, and potential application for Ne gas separation,  
*International Journal of Quantum Chemistry*, Vol. 115, pp. 150161509, 2015.
13. B. Furtula, I. Gutman,  
A forgotten topological index,  
*Journal of Mathematical Chemistry*, Vol. 53, pp. 1184-1190, 2015.
14. I. Gutman, B. Furtula, X. Li, Multicenter, Wiener indices and their applications,  
*Journal of the Serbian Chemical Society*, Vol. 80, pp. 1009-1017, 2015.

15. S. Marković, Lj. Mitrović, J. Đurđević, J. Točović, Z. Petrović,  
Alkylation of potassium ethyl acetoacetate: HSAB versus Marcus theory,  
*Computational and Theoretical Chemistry*, Vol. 1066, pp. 14-19, 2015.

### **Subproject 3: Mathematical programming**

1. T. Davidović, T. G. Crainic,  
Parallel Local Search to Schedule Communicating Tasks on Identical Processors,  
*Parallel Computing*, Vol. 48, pp. 1-14, 2015.
2. T. Stojanović, T. Davidović, Z. Ognjanović,  
Bee Colony Optimization for the Satisfiability Problem in Probabilistic Logic,  
*Applied Soft Computing*, Vol. 31, pp. 339-347, 2015.
3. M.D. Dražić, R. P. Lazović, V. V. Kovačević-Vujčić,  
Sparsity preserving preconditioners for linear systems in interior-point methods,  
*Computational Optimization and Applications*, Vol. 61, No. 3, pp. 557-570, 2015.
4. T. Davidović, D. Teodorović, M. Temešić,  
Bee Colony Optimization Part I: The Algorithm Overview,  
*Yugoslav Journal of Operational Research*, Vol. 25, No. 1, pp. 33-56, 2015.
5. D. Teodorović, M. Temešić, T. Davidović,  
Bee Colony Optimization Part II: The Applications Survey,  
*Yugoslav Journal of Operational Research*, Vol. 25, No. 1, pp. 185-219, 2015.
6. N. Nikolić, M. Čangalović, I. Grujić,  
Symmetry properties of resolving sets and metric bases in hypercubes,  
*Optimization letters*, DOI: 10.1007/s11590-014-0790-2.

### **Subproject 4: Structural graph theory and algorithms**

1. P. Aboulker, P. Charbit, N. Trotignon, K. Vučković, M. Pokorný, P. Heggernes, D.,  
Vertex elimination orderings for hereditary graph classes,  
*Discrete Mathematics*, Vol. 338, pp. 825-834, 2015.
2. S. Thomassé, N. Trotignon, K. Vučković,  
A polynomial Turing-kernel for weighted independent set in bull-free graphs,  
*Algorithmica*, DOI 10.1007/s00453-015-0083-x, 2015.

3. T. Divni , Lj. Pavlovi , B. Liu,  
 Extremal graphs for the Randić index when minimum, maximum degrees and order of graphs are odd,  
*Optimization*, Vol. 64, No. 9, pp. 2021-2038, 2015.
4. M. Chudnovsky, N. Trotignon, T. Trunck, K. Vu-kovi ,  
 Coloring perfect graphs with no balanced skew-partitions,  
*Journal of Combinatorial Theory B*, Vol. 115, pp. 26-65, 2015.

### **Subproject 5: Graph spectra in computer science**

1. Stevanovi , M. Milo-evi ,  
 On distance integral graphs,  
*Discrete Mathematics*, Vol. 338, pp. 1784-1792, 2015.
2. J. Sedlar, D. Stevanovi , A. Vasilyev,  
 On the inverse sum indeg index,  
*Discrete Appl. Math.*, Vol. 184, pp. 2026-212, 2015.

### **Papers in conference proceedings**

1. T. Davidovi ,  
 Bee Colony Optimization: Recent Developments and Applications,  
*Proc. Balkan Conference on Operational Research*, BALCOR 2015 Constanta, Romania,  
 Sept.9-12, 2015.  
 Mircea cel Batran Naval Academy Scienti\_c Bulletin, Volume XVIII 2015 Issue 2, Dec.  
 2015, pp. 225-235.
2. Kordi , S., Kova , N., Davidovi , T.,  
 Divide and Conquer Approach to Discrete Berth  
 Allocation Problem,  
*Proc. Balkan Conference on Operational Research*, BALCOR 2015, Constanta, Romania,  
 Sept. 9-12, 2015.  
 Mircea cel Batran Naval Academy Scienti\_c Bulletin, Volume XVIII 2015 Issue 2, Dec.  
 2015, pp. 307-316.
3. P. Jovanovi , T. Davidovi , J. Lazi , S. Mitrovi Mini ,  
 The Variable Intensity Neighborhood Search for 0-1 MIP,  
*Proc. 42nd Symposium on Operations Research, SYM-OP-IS 2015*, pp. 229-232, Srebrno  
 jezero, Sept. 15-18, 2015.
4. T. Davidovi , N. Kova , Z. Stanimirovi ,  
 VNS-based Approach to Minimum Cost Hybrid Berth Allocation Problem,

*Proc. 42nd Symposium on Operations Research, SYM-OP-IS 2015*, pp. 237-240, Srebrno jezero, Sept. 15-18, 2015.

5. B. Arsi , M. oki , V. Cvjetkovi , P. Spalevi , S. Ili ,  
Semantic Search Framework for Distributed Semantically Based Cheminformatics and  
Bioinformatics Datasets  
*5th International Conference on Information Society and Technology (ICIST 2015)*, Serbia,  
March 8-11, 2015.

6. B. Arsi , P. Spalevi , Lj. Boji , A. Crni-anin,  
Social Networks in Logistics System Decision-Making,  
*2nd Logistics International Conference (LOGIC 2015)*, Serbia, May 21-23, 2015.

7. A. Ljaji , E. Ljaji , P. Spalevi , B. Arsi , D. Vu kovi ,  
Sentiment Analysis of Textual Comments in Field of Sport,  
*24nd International Electrotechnical and Computer Science Conference (ERK 2015)*, IEEE,  
Slovenia, September 21-23, 2015.