Acta Applicandae Mathematicae
Volume 72, Issue 3, July 2002, Pages 247-294

DOI: 10.1023/A:1016290123303

Document Type: Article

Wiener index of hexagonal systems

Dobrynin, A.A., Gutman, I., Klavžar, S., Žigert, P.

Sobolev Institute of Mathematics, Russian Academy of Sciences, Siberian Branch, Novosibirsk 630090, Russian Federation

Abstract

The Wiener index W is the sum of distances between all pairs of vertices of a (connected) graph. Hexagonal systems (HS's) are a special type of plane graphs in which all faces are bounded by hexagons. These provide a graph representation of benzenoid hydrocarbons and thus find applications in chemistry. The paper outlines the results known for W of the HS: method for computation of W, expressions relating W with the structure of the respective HS, results on HS's extremal w.r.t. W, and on integers that cannot be the W-values of HS's. A few open problems are mentioned. The chemical applications of the results presented are explained in detail.

Author Keywords

Algorithm; Catacondensed hexagonal system; Congruence relation; Hexagonal chain; Hexagonal system; Hosoya polynomial; Isometric subgraph; Wiener index

References (121)

1. Balaban, T.-S., Balaban, A.T., Bonchev, D.
A topological approach to predicting properties of infinite polymers. Part VI. Rational formulas for the normalized Wiener index and a comparison with index J
(2001) *J. Molec. Struct. (Theochem)*, 535 pp. 81-92 Cited 4 times
Abstract + Refs View at Publisher

2. Bonchev, D., Gutman, I., Polansky, O.E.
Parity of the distance numbers and Wiener numbers of bipartite graphs
(1987) *Comm. Math. Chem. (MATCH)*, 22 pp. 209-214 Cited 4 times

3. Bonchev, D., Mekenyan, O., Trinajstić, N.
Topological characterization of cyclic structures
(1980) *Int. J. Quantum Chem.*, 17 pp. 845-893 Cited 28 times
View at Publisher

4. Buckley, F., Harary, F.
(1990) *Distance in Graphs*, Cited 206 times
Addison-Wesley, Redwood

5. Chazelle, B.
Triangulating a simple polygon in linear time
(1994) *Discrete Comput. Geom.*, 6 pp. 485-524 Cited 98 times

6. Chepoi, V.
On distances in benzenoid systems
(1996) *J. Chem. Inf. Comput. Sci.*, 36 pp. 1169-1172 Cited 10 times
Abstract + Refs View at Publisher

7. Chepoi, V., Klavžar, S.
The Wiener index and the Szeged index of benzenoid systems in linear time
(1997) *J. Chem. Inf. Comput. Sci.*, 37 pp. 752-755 Cited 13 times
Abstract + Refs View at Publisher

8. Chepoi, V., Klavžar, S.
Distances in benzenoid systems: Further development
(1998) *Discrete Math.*, 192 pp. 27-39 Cited 3 times
Abstract + Refs View at Publisher

9. Cyvin, B.N., Brunvoll, J., Cyvin, S.J.
Enumeration of benzenoid systems and other polyhexes
(1992) *Topics Curr. Chem.*, 162 pp. 65-180 Cited 23 times
View at Publisher

10. Dankelmann, P.
Average distance and independence numbers
(1994) *Discrete Appl. Math.*, 51 pp. 75-83 Cited 11 times
View at Publisher

11. Devillers, J., Balaban, A.T.
(1999) *Topological Indices and Related Descriptors in QSAR and QSPR*, Cited 185 times
Gordon & Breach, Amsterdam

12. Diudea, M.V.
(2001) *QSPR/QSAR Studies by Molecular Descriptors*, Cited 56 times
Nova, Huntington, New York

13. Diudea, M.V., Gutman, I.
Wiener-type topological indices
(1998) *Croat. Chem. Acta*, 71 pp. 21-51 Cited 56 times
Abstract + Refs

14. Diudea, M.V., Gutman, I., Jäntschi, L.
(2001) *Molecular Topology*, Cited 13 times
Nova, Huntington, New York

15. Dobrynin, A.A.
Distance numbers of the molecular graphs of polycyclic compounds
(1986) *Vychisl. Sistemy*, 117 pp. 114-122
in Russian

16. Dobrynin, A.A.
Graph distance of catacondensed hexagonal polycyclic systems under its transformations
(1988) *Vychisl. Sistemy*, 127 pp. 3-39 Cited 6 times
in Russian

17. Dobrynin, A.A.
Distribution of the distance numbers of unbranched hexagonal system graphs
(1990) *Vychisl. Sistemy*, 136 pp. 61-141 Cited 4 times
in Russian

18. Dobrynin, A.A.
Graphs of unbranched hexagonal systems with equal values of the Wiener index and different number of hexagons
(1992) *J. Math. Chem.*, 9 pp. 239-252 Cited 8 times
View at Publisher

19. Dobrynin, A.A.
Graph distance numbers of nonbranched hexagonal systems
(1992) *Siberian Adv. Math.*, 2 pp. 121-134 Cited 2 times

20. Dobrynin, A.A.
On decomposition of the Wiener index for graphs of catacondensed hexagonal systems
(1993) *Graph Theory Notes New York*, 25 pp. 19-22 Cited 4 times

21. Dobrynin, A.A.
Changes of distance number under local transformations of graphs with odd hexagons
(1993) *Vychisl. Sistemy*, 149 pp. 3-50
in Russian

22. Dobrynin, A.A.
Certain properties of distance number for graphs of unbranched pentagonal systems
(1993) *Vychisl. Sistemy*, 149 pp. 84-108
in Russian

23. Dobrynin, A.A.
Congruence relations for the Wiener index of hexagonal chains
(1997) *J. Chem. Inf. Comput. Sci.*, 37 pp. 1109-1110 Cited 3 times
Abstract + Refs View at Publisher

24. Dobrynin, A.A.
A new formula for the calculation of the Wiener index of hexagonal chains
(1997) *Comm. Math. Comp. Chem. (MATCH)*, 35 pp. 75-90 Cited 8 times
Abstract + Refs

25. Dobrynin, A.A.
New congruence relations for the Wiener index of cata-condensed benzenoid graphs
(1998) *J. Chem. Inf. Comput. Sci.*, 38 pp. 405-409 Cited 5 times
Abstract + Refs View at Publisher

26. Dobrynin, A.A.
Formula for calculating the Wiener index of catacondensed benzenoid graphs
(1998) *J. Chem. Inf. Comput. Sci.*, 38 pp. 811-814 Cited 3 times
Abstract + Refs View at Publisher

27. Dobrynin, A.A.
Discriminating power of the Schultz index for catacondensed benzenoid graphs
(1998) *Comm. Math. Comp. Chem. (MATCH)*, 38 pp. 19-32 Cited 7 times
Abstract + Refs

28. Dobrynin, A.A.
A simple formula for the calculation of the Wiener index of hexagonal chains
(1999) *Comput. Chem.*, 23 pp. 43-48
Abstract + Refs View at Publisher

29. Dobrynin, A.A.
Explicit relation between the Wiener index and the Schultz index of catacondensed benzenoid graphs
(1999) *Croat. Chem. Acta*, 72 pp. 869-874
Abstract + Refs

30. Dobrynin, A.A., Entringer, R., Gutman, I.
Wiener index of trees: Theory and applications
(2001) *Acta Appl. Math.*, 66 pp. 211-249 Cited 49 times
Abstract + Refs View at Publisher

31. Dobrynin, A.A., Gutman, I.
On the Szeged index of unbranched catacondensed benzenoid molecules
(1996) *Croat. Chem. Acta*, 69 pp. 845-856 Cited 15 times
Abstract + Refs

32. Dobrynin, A.A., Gutman, I.
Szeged index of some polycyclic bipartite graphs with circuits of different size
(1997) *Comm. Math. Chem. (MATCH)*, 35 pp. 117-128 Cited 11 times
Abstract + Refs

33. Dobrynin, A.A., Gutman, I.
Congruence relations for the Szeged index of hexagonal chains
(1997) *Publ. Elektrotehn. Fak. (Beograd) Ser. Mat.*, 8 pp. 106-113 Cited 4

times

34. Dobrynin, A.A., Gutman, I.
The Wiener index for trees and graphs of hexagonal systems
(1998) *Diskretn. Anal. Issled. Oper. Ser. 2*, 5 (2) pp. 34-60 Cited 4 times
in Russian

35. Dobrynin, A.A., Gutman, I.
The average Wiener index of hexagonal chains
(1999) *Comput. Chem.*, 23 pp. 571-576 Cited 3 times
Abstract + Refs View at Publisher

36. Dobrynin, A.A., Gutman, I., Dömötör, G.
A Wiener-type graph invariant for some bipartite graphs
(1995) *Appl. Math. Lett.*, 8 (5) pp. 57-62 Cited 24 times
View at Publisher

37. Dobrynin, A.A., Kochetova, A.A.
Degree distance of a graph: A degree analogue of the Wiener index
(1994) *J. Chem. Inf. Comput. Sci.*, 34 pp. 1082-1086 Cited 14 times
Abstract + Refs View at Publisher

38. Entringer, R.C.
Distance in graphs: Trees
(1997) *J. Combin. Math. Combin. Comput.*, 24 pp. 65-84 Cited 9 times

39. Entringer, R.C., Jackson, D.E., Snyder, D.A.
Distance in graphs
(1976) *Czechoslovak Math. J.*, 26 pp. 283-296 Cited 42 times

40. Estrada, E., Rodriguez, L.
Decomposition of the Wiener number into contributions coming from homodistant pairs of vertices. Definition and QSAR application
(1997) *J. Serb. Chem. Soc.*, 62 pp. 199-205 Cited 2 times
Abstract + Refs

41. Gutman, I.
Wiener numbers of benzenoid hydrocarbons: Two theorems
(1987) *Chem. Phys. Lett.*, 136 pp. 134-136 Cited 25 times
View at Publisher

42. Gutman, I.
On distances in some bipartite graphs
(1988) *Publ. Inst. Math. (Beograd)*, 43 pp. 3-8 Cited 9 times

43. Gutman, I.
Topological properties of benzenoid systems
(1992) *Topics Curr. Chem.*, 162 pp. 21-28 Cited 13 times

44. Gutman, I.
Calculating the Wiener number: The Doyle-Graver method
(1993) *J. Serb. Chem. Soc.*, 58 pp. 745-750 Cited 16 times

45. Gutman, I.
Easy method for the calculation of the algebraic structure count of phenylenes
(1993) *J. Chem. Soc. Faraday Trans.*, 89 pp. 2413-2416 Cited 26 times
View at Publisher

46. Gutman, I.
On the distance of some compound graphs
(1994) *Univ. Beograd. Publ. Elektrotehn. Fac. Ser. Mat.*, 5 pp. 29-34 Cited 2 times

47. Gutman, I.
Selected properties of the Schultz molecular topological index
(1994) *J. Chem. Inf. Comput. Sci.*, 34 pp. 1087-1089 Cited 32 times
Abstract + Refs View at Publisher

48. Gutman, I.
The topological indices of linear polyacenes
(1995) *J. Serb. Chem. Soc.*, 60 pp. 99-104 Cited 5 times

49. Gutman, I.
Wiener numbers of benzenoid isomers containing a linear polyacene fragment
(1997) *Indian J. Chem.*, 36 A pp. 644-648 Cited 5 times

Abstract + Refs

50. Gutman, I.
Comparing Wiener numbers of isomeric benzenoid hydrocarbons
(1997) *ACH Models Chem.*, 134 pp. 477-486 Cited 2 times

51. Gutman, I., Cyvin, S.J.
(1989) *Introduction to the Theory of Benzenoid Hydrocarbons*, Cited 228 times
Springer-Verlag, Berlin

52. Gutman, I., Cyvin, S.J.
Elementary edge-cuts in the theory of benzenoid hydrocarbons
(1997) *Comm. Math. Comp. Chem. (MATCH)*, 36 pp. 177-184 Cited 6 times
Abstract + Refs

53. Gutman, I., Cyvin, S.J., Ivanov-Petrović, V.
Topological properties of circumcoronenes
(1998) *Z. Naturforsch.*, 53 A pp. 699-703 Cited 3 times
Abstract + Refs

54. Gutman, I., Dobrynin, A.A.
The Szeged index - A success story
(1998) *Graph Theory Notes New York*, 34 pp. 37-44 Cited 21 times

55. Gutman, I., Dömötör, G.
Wiener number of polyphenyls and phenylenes
(1994) *Z. Naturforsch.*, 49 A pp. 1040-1044 Cited 4 times

56. Gutman, I., Dömötör, G., Lam, P.C.B., Shiu, W.C., Popović, L.
Szeged indices of benzenoid hydrocarbons
(1996) *Polycyclic Arom. Comp.*, 8 pp. 259-270 Cited 8 times
Abstract + Refs

57. Gutman, I., Jovašević, V.
Wiener indices of benzenoid hydrocarbons containing two linear polyacene fragments
(1998) *J. Serb. Chem. Soc.*, 63 pp. 31-40
Abstract + Refs

58. Gutman, I., Kennedy, J.W., Quintas, L.V.
Wiener numbers of random benzenoid chains
(1990) *Chem. Phys. Lett.*, 173 pp. 403-408 Cited 8 times
View at Publisher

59. Gutman, I., Khadikar, P.V., Khaddar, T.
Wiener and Szeged indices of benzenoid hydrocarbons containing a linear polyacene fragment
(1997) *Comm. Math. Comp Chem. (MATCH)*, 35 pp. 105-116 Cited 20 times
Abstract + Refs

60. Gutman, I., Klavžar, S.
An algorithm for the calculation of the Szeged index of benzenoid hydrocarbons
(1995) *J. Chem. Inf. Comput. Sci.*, 35 pp. 1011-1014 Cited 31 times
Abstract + Refs View at Publisher

61. Gutman, I., Klavžar, S.
A method for calculating Wiener numbers of benzenoid hydrocarbons
(1996) *ACH Models Chem.*, 133 pp. 389-399 Cited 26 times

62. Gutman, I., Klavžar, S.
Bounds for the Schultz molecular topological index of benzenoid systems in terms of the Wiener index
(1997) *J. Chem. Inf. Comput. Sci.*, 37 pp. 741-744 Cited 3 times
Abstract + Refs View at Publisher

63. Gutman, I., Klavžar, S.
Relations between Wiener numbers of benzenoid hydrocarbons and phenylenes
(1998) *ACH Models Chem.*, 135 pp. 45-55 Cited 7 times

64. Gutman, I., Klavžar, S., Petkovšek, M., Žigert, P.
On Hosoya polynomials of benzenoid graphs
(2001) *Comm. Math. Comp. Chem. (MATCH)*, 43 pp. 49-66 Cited 7 times
Abstract + Refs

65. Gutman, I., Marković, S., Luković, D., Radivojević, V., Rančić, S.
On Wiener numbers of benzenoid hydrocarbons
(1987) *Coll. Sci. Papers Fak. Sci. Kragujevac*, 8 pp. 15-34 Cited 5 times

66. Gutman, I., Marković, S., Popović, L., Spalević, Z., Pavlović, L.
The relation between the Wiener indices of phenylenes and their hexagonal squeezes
(1997) *J. Serb. Chem. Soc.*, 62 pp. 207-210 Cited 6 times
Abstract + Refs

67. Gutman, I., Polansky, O.E.
Wiener numbers of polyacenes and related benzenoid molecules
(1986) *Comm. Math. Chem. (MATCH)*, 20 pp. 115-123 Cited 13 times

68. Gutman, I., Popović, L., Pavlović, L.
Elementary edge-cuts in the theory of benzenoid hydrocarbons - An application
(1997) *Comm. Math. Comp. Chem. (MATCH)*, 36 pp. 217-229 Cited 6 times
Abstract + Refs

69. Gutman, I., Potgieter, J.H.
Wiener index and intermolecular forces
(1997) *J. Serb. Chem. Soc.*, 62 pp. 185-192 Cited 30 times
Abstract + Refs

70. Gutman, I., Šoltés, L.
The range of the Wiener index and its mean isomer degeneracy
(1991) *Z. Naturforsch.*, 46 A pp. 865-868 Cited 8 times

71. Gutman, I., Yeh, Y.N.
The sum of all distances in bipartite graphs
(1995) *Math. Slovaca*, 45 pp. 327-334 Cited 4 times

72. Gutman, I., Yeh, Y.N., Lee, S.L., Luo, Y.L.
Some recent results in the theory of the Wiener number
(1993) *Indian J. Chem.*, 32 A pp. 651-661 Cited 126 times

73. Harary, F., Harborth, H.
Extremal animals
(1976) *J. Comb. Inf. System Sci.*, 1 pp. 1-8 Cited 17 times

74. Homann, K.H.
Fullerenes and soot formation - New pathways to large particles in flames
(1998) *Angew. Chem. Int. Ed.*, 37 pp. 2435-2451 Cited 52 times
Abstract + Refs

75. Hosoya, H.
Topological index. A newly proposed quantity characterizing the topological nature of structural isomers of saturated hydrocarbons
(1971) *Bull. Chem. Soc. Jpn.*, 4 pp. 2332-2339 Cited 340 times

76. Hosoya, H.
On some counting polynomials in chemistry
(1988) *Discrete Appl. Math.*, 19 pp. 239-257 Cited 45 times
Abstract + Refs View at Publisher

77. Huang, I.W., Yang, B.Y., Yeh, Y.N.
Wiener indices of hex carpets - From hexagon models to square grids
(1996) *SEA Bull. Math.*, 20 pp. 81-102 Cited 4 times

78. Huang, W.C., Yang, B.Y., Yeh, Y.N.
From ternary strings to Wiener indices of benzenoid chains
(1997) *Discrete Appl. Math.*, 73 pp. 113-131 Cited 4 times
Abstract + Refs View at Publisher

79. Imrich, W., Klavžar, S.
(2000) *Product Graphs: Structure and Recognition*, Cited 43 times
Wiley, New York

80. Juvan, M., Mohar, B., Graovac, A., Klavžar, S., Žerovnik, J.
Fast computation of the Wiener index of fasciagraphs and rotagraphs
(1995) *J. Chem. Inf. Comput. Sci.*, 35 pp. 834-840 Cited 11 times
View at Publisher

81. Khadikar, P.V., Deshpande, N.V., Kale, P.P., Dobrynin, A., Gutman, I., Dömötör, G.

The Szeged index and an analogy with the Wiener index
(1995) *J. Chem. Inf. Comput. Sci.*, 35 pp. 547-550 Cited 103 times
View at Publisher

82. Klavžar, S.
Applications of isometric embeddings to chemical graphs
(2000) *DIMACS Ser. Discrete Math. Theo. Comput. Sci.*, 51 pp. 249-259 Cited 4 times

83. Klavžar, S., Gutman, I.
Comparison of the Schultz molecular topological index with the Wiener index
(1996) *J. Chem. Inf. Comput. Sci.*, 36 pp. 1001-1003 Cited 7 times
Abstract + Refs View at Publisher

84. Klavžar, S., Gutman, I.
Wiener number of vertex-weighted graphs and a chemical application
(1997) *Discrete Appl. Math.*, 80 pp. 73-81 Cited 9 times
Abstract + Refs View at Publisher

85. Klavžar, S., Gutman, I., Mohar, B.
Labeling of benzenoid systems which reflects the vertex-distance relations
(1995) *J. Chem. Inf. Comput. Sci.*, 35 pp. 590-593 Cited 16 times
View at Publisher

86. Klavžar, S., Gutman, I., Rajapakse, A.
Wiener numbers of pericondensed benzenoid hydrocarbons
(1997) *Croat. Chem. Acta.*, 70 pp. 979-999 Cited 5 times
Abstract + Refs

87. Klavžar, S., Žerovnik, J.
Algebraic approach to fasciagraphs and rotagraphs
(1996) *Discrete Appl. Math.*, 68 pp. 93-100 Cited 8 times
Abstract + Refs View at Publisher

88. Klavžar, S., Žigert, P., Gutman, I.
An algorithm for the calculation of the hyper-Wiener index of benzenoid hydrocarbons
(2000) *Comput. Chem.*, 24 pp. 229-233 Cited 9 times
Abstract + Refs View at Publisher

89. Klein, D., Mihalić, Z., Plavsić, D., Trinajstić, N.
Molecular topological index: A relation with the Wiener index
(1992) *J. Chem. Inf. Comput. Sci.*, 32 pp. 304-305 Cited 26 times
View at Publisher

90. Klein, D.J., Živković, T.P., Trinajstić, N.
Resonance in random π-network polymers
(1987) *J. Math. Chem.*, 1 pp. 309-334 Cited 5 times
View at Publisher

91. Konstantinova, E.V.
The discrimination ability of some topological and information distance indices for graphs of unbranched hexagonal systems
(1996) *J. Chem. Inf. Comput. Sci.*, 36 pp. 54-57 Cited 10 times
Abstract + Refs View at Publisher

92. Konstantinova, E.V., Paleev, A.A.
On sensitivity of topological indices for polycyclic graphs
(1990) *Vychisl. Sistemy*, 136 pp. 38-48 Cited 7 times
in Russian

93. Lukovits, I.
Decomposition of the Wiener topological index, application to drug-receptor interactions
(1988) *J. Chem. Soc. Perkin Trans.*, 9 pp. 1667-1671 Cited 9 times
View at Publisher

94. Lukovits, I.
Wiener indices and partition coefficients of unsaturated hydrocarbons
(1990) *Quant. Struct. Act. Relat.*, 9 pp. 227-231 Cited 16 times

Abstract + Refs

95. Lukovits, I.
Correlation between components of the Wiener index and partition coefficients of hydrocarbons
(1992) *Int. J. Quantum Chem. Quantum Biol. Symp.*, 19 pp. 217-223 Cited 11 times
View at Publisher

96. Mohar, B., Pisanski, T.
How to compute the Wiener index of a graph
(1988) *J. Math. Chem.*, 2 pp. 267-277 Cited 28 times
View at Publisher

97. Nikolić, S., Trinajstić, N., Mihalić, Z.
(1995) *The Wiener index: Developments and applications*, 68 pp. 105-129 Cited 115 times

98. Ori, O., D'Mello, M.
A topological study of the structure of the C_{76} fullerene
(1992) *Chem. Phys. Lett.*, 197 pp. 49-54 Cited 5 times
View at Publisher

99. Pavlović, L., Gutman, I.
Wiener numbers of phenylenes: An exact result
(1997) *J. Chem. Inf. Comput. Sci.*, 37 pp. 355-358 Cited 10 times
Abstract + Refs View at Publisher

100. Plesnik, J.
On the sum of all distances in a graph or digraph
(1984) *J. Graph Theory*, 8 pp. 1-21 Cited 40 times

101. Polansky, O.E., Bonchev, D.
The Wiener number of graphs. I. General theory and changes due to some graph operations
(1986) *Comm. Math. Chem. (MATCH)*, 21 pp. 133-186 Cited 27 times

102. Polansky, O.E., Bonchev, D.
Theory of the Wiener number of graphs. II. Transfer graphs and some of their metric properties
(1990) *Comm. Math. Chem. (MATCH)*, 25 pp. 3-39 Cited 10 times

103. Polansky, O.E., Randić, M., Hosoya, H.
Transfer matrix approach to the Wiener numbers of cata-condensed benzenoids
(1989) *Comm. Math. Chem. (MATCH)*, 24 pp. 3-28 Cited 9 times

104. Rouvray, D.H.
Should we have designs on topological indices?
(1983) *Chemical Application of Topology and Graph Theory*, pp. 159-177 Cited 52 times
R. B. King (ed.), Elsevier, Amsterdam

105. Rouvray, D.H.
The modelling of chemical phenomena using topological indices
(1987) *J. Comput. Chem.*, 8 pp. 470-480
View at Publisher

106. Sachs, H.
Perfect matchings in hexagonal systems
(1984) *Combinatorica*, 4 pp. 89-99 Cited 21 times

107. Schultz, H.P.
Topological organic chemistry. 1. Graph theory and topological indices of alkanes
(1989) *J. Chem. Inf. Comput. Sci.*, 29 pp. 227-228 Cited 92 times
Abstract + Refs View at Publisher

108. Shiu, W.C., Lam, P.C.B.
The Wiener number of the hexagonal net
(1997) *Discrete Appl. Math.*, 73 pp. 101-111 Cited 7 times
Abstract + Refs View at Publisher

109. Shiu, W.C., Lam, P.C.B.
Wiener numbers of pericondensed benzenoid molecule systems

(1997) *Congr. Numer.*, 126 pp. 113-124 Cited 4 times

110. Shiu, W.C., Lam, P.C.B., Gutman, I.
Wiener number of hexagonal parallelograms
(1996) *Graph Theory Notes New York*, 30 pp. 21-25 Cited 6 times

111. Shiu, W.C., Lam, P.C.B., Gutman, I.
Wiener number of hexagonal bitrapeziums and trapeziums
(1997) *Bull. Acad. Serbe Sci. Arts (Cl. Math. Natur.)*, 114 pp. 9-25 Cited 3 times

112. Shiu, W.C., Tong, C.S., Lam, P.C.B.
Wiener number of some polycyclic graphs
(1997) *Graph Theory Notes New York*, 32 pp. 10-15 Cited 6 times

113. Shiu, W.C., Tong, C.S., Lam, P.C.B.
Wiener number of hexagonal jagged-rectangles
(1997) *Discrete Appl. Math.*, 80 pp. 83-96 Cited 3 times
Abstract + Refs View at Publisher

114. Skorobogatov, V.A., Mzhelskaya, E.V., Meyrmanova, N.M.
A study of metric characteristics of cata-condensed polybenzenoids
(1988) *Vychisl. Sistemy*, 127 pp. 40-91
in Russian

115. Skvortsova, M.I., Baskin, I.I., Slovokhotova, O.I., Palyulin, V.A., Zefirov, N.S.
Inverse problem in QSAR/QSPR studies for the case of topological indices characterizing molecular shape (Kier indices)
(1993) *J. Chem. Inf. Comput. Sci.*, 33 pp. 630-634 Cited 33 times
View at Publisher

116. Slanina, Z., Chao, M.C., Lee, S.L., Gutman, I.
On applicability of the Wiener index to estimate relative stabilities of the higher-fullerene IPR isomers
(1997) *J. Serb. Chem. Soc.*, 62 pp. 211-217
Abstract + Refs

117. Todeschini, R., Consonni, V.
(2000) *Handbook of Molecular Descriptors*, Cited 372 times
Wiley-VCH, Weinheim

118. Watson, M.D., Fechtenkötter, A., Müllen, K.
Big is beautiful - "Aromaticity" revisited from the viewpoint of macromolecular and supramolecular benzene chemistry
(2001) *Chem. Rev.*, 101 pp. 1267-1300 Cited 165 times
Abstract + Refs View at Publisher

119. Wiener, H.
Structural determination of paraffin boiling points
(1947) *J. Amer. Chem. Soc.*, 69 pp. 17-20 Cited 736 times
View at Publisher

120. Zander, M.
(1995) *Polycyclische Aromaten*, Cited 29 times
Teubner, Stuttgart

121. Žigert, P., Klavžar, S., Gutman, I.
Calculating the hyper-Wiener index of benzenoid hydrocarbons
(2000) *ACH Models Chem.*, 137 pp. 83-94 Cited 4 times

Dobrynin, A.A.; Sobolev Institute of Mathematics, Russian Academy of Sciences, Siberian Branch, Novosibirsk 630090, Russian Federation; email:dobr@math.nsc.ru

Acta Applicandae Mathematicae
Volume 72, Issue 3, July 2002, Pages 247-294

results list | previous 16 of 32 next

Search Sources My Alerts My List My Profile Help Scopus Labs

About Scopus | Feedback | Terms & Conditions | Privacy Policy