

**PRINCIPAL PUBLICATIONS BY B. A. TROFIMOV
ON THE CHEMISTRY OF HETEROCYCLIC
COMPOUNDS (1980-2008)**

Monographs, Books, Collections

1. B. A. Trofimov, *Heteroatomic Derivatives of Acetylene. New Polyfunctional Monomers, Reagents, and Intermediates* [in Russian], Nauka, Moscow (1981), 319 pp.
2. B. A. Trofimov and A. I. Mikhaleva, *N-Vinylpyrroles* [in Russian], Nauka, Novosibirsk (1984), 264 pp.
3. B. A. Trofimov, L. N. Sobenina, and A. I. Mikhaleva, *Advances in the Synthesis of Pyrroles. Advances of Science and Technology. Organic Chemistry*, Vol. 7, VINITI, Moscow (1987), 78 pp.
4. B. A. Trofimov, in: R. A. Jones (editor), *The Chemistry of Heterocyclic Compounds, Pyrroles*, Vol. 48, J. Wiley, New York, 1992, Chap. 2, *Vinylpyrroles*, pp. 131-298.
5. B. A. Trofimov and N. A. Nedolya, in: A. R. Katritzky, C. A. Ramsden, E. F. V. Scriven, and R. J. K. Taylor (editors), *Comprehensive Heterocyclic Chemistry III*, Vol. 3, Elsevier, Oxford (2008), *Pyrroles and their Benzo Derivatives: Reactivity*, pp. 45-268.

Reviews

6. B. A. Trofimov and A. I. Mikhaleva, *Reactions of ketoximes with acetylene: A new general method for the synthesis of pyrroles*, *Khim. Geterotsikl. Soedin.*, 1299-1312 (1980). [*Chem. Heterocycl. Comp.*, **16**, 979-990 (1980)].
7. B. A. Trofimov, A. I. Mikhaleva, and L. V. Morozova, *Polymerization of N-vinylpyrroles*, *Uspekhi Khimii*, **54**, 1034-1050 (1985).
8. B. A. Trofimov, *New intermediates for organic synthesis based on acetylene*, *Z. Chem.*, **26**, No. 2, 41-49 (1986).
9. B. A. Trofimov and A. I. Mikhaleva, *Azirines in reactions leading to the formation of a pyrrole ring*, *Khim. Geterotsikl. Soedin.*, 1299-1312 (1987). [*Chem. Heterocycl. Comp.*, **23**, 1037-1048 (1987)].
10. L. N. Sobenina, A. I. Mikhaleva, and B. A. Trofimov, *Synthesis of pyrroles from aliphatic compounds*, *Uspekhi Khimii*, **58**, 275-333 (1989).
11. B. A. Trofimov, *Prospects of pyrrole chemistry*, *Uspekhi Khimii*, **58**, 1703-1720 (1989).
12. L. N. Sobenina A. I. Mikhaleva, and B. A. Trofimov, *Synthesis of pyrroles from heterocyclic compounds*, *Khim. Geterotsikl. Soedin.*, 291-308 (1989). [*Chem. Heterocycl. Comp.*, **25**, 237-253 (1989)].
13. B. A. Trofimov, *Preparation of pyrroles from ketoximes and acetylenes*, *Adv. Heterocycl. Chem.*, **51**, 177-301 (1999).

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14. B. A. Trofimov and A. I. Mikhaleva, *Further development of the ketoxime-based pyrrole synthesis*, *Heterocycles*, **37**, 1193-1232 (1994).
15. B. A. Trofimov, *Sulfur-containing pyrroles, phosphorus, sulfur, and silicon*, **95-96**, 145-163 (1994).
16. M. V. Sigalov and B. A. Trofimov, *1-Vinylpyrrolium ions*, *Zh. Org. Khim.*, **31**, 801- 826 (1995).
17. B. A. Trofimov and A. I. Mikhaleva, *From ketones to pyrroles in two stages*, *Zh. Org. Khim.*, **32**, 1127 1141 (1996).
18. S. E. Korostova, A. I. Mikhaleva, A. M. Vasil'tsov, and B. A. Trofimov, *Arylpyrroles: development of classical and modern methods of synthesis*, Part 1, *Zh. Org. Khim.*, **34**, 967-1000 (1998).
19. S. E. Korostova, A. I. Mikhaleva, A. M. Vasil'tsov, and B. A. Trofimov, *Arylpyrroles: development of classical and modern methods of synthesis*, Part 2, *Zh. Org. Khim.*, **34**, 1767-1785 (1998).
20. B. A. Trofimov and M. V. Sigalov, *N-Vinylpyrrolium, furanum, and thiophenium ions*, *Main Group Chem. News*, **6**, No. 2-3, 30-41 (1998).
21. B. A. Trofimov, *Reactions of unsaturated carbanions with isothiocyanates: A new avenue to fundamental heterocycles*, *J. Heterocycl. Chem.*, **36**, 1469-1490 (1999).
22. B. A. Trofimov and A. G. Mal'kina, *Acetylene-based functionalized dihydrofuranones and related biomimetic assemblies*, *Heterocycles*, **51**, 2485-2523 (1999).
23. S. E. Korostova, A. I. Mikhaleva, and B. A. Trofimov, *Bipyrroles, furyl- and thienylpyrroles*, *Uspekhi Khimii*, **68**, 506-530 (1999).
24. L. N. Sobenina, A. P. Demenev, A. I. Mikhaleva, and B. A. Trofimov, *Synthesis of C-vinylpyrroles*, *Uspekhi Khimii*, **71**, 641-671 (2002).
25. I. A. Maretina and B. A. Trofimov, *Diacetylene and its derivatives in heterocyclization reactions*, *Adv. Heterocycl. Chem.*, **82**, 157-259 (2002).
26. B. A. Trofimov, L. N. Sobenina, A. P. Demenev, and A. I. Mikhaleva, *C-Vinylpyrroles as pyrrole building blocks*, *Chem. Rev.*, **104**, 2481-2506 (2004).
27. A. I. Mikhaleva, A. B. Zaitsev, and B. A. Trofimov, *Oximes as reagents*, *Uspekhi Khimii*, **75**, 884-912 (2006).
28. B. A. Trofimov, *From the chemistry of acetylene to the chemistry of pyrrole*, *Khimiya v interesakh ustoichivogo razvitiya*, **16**, № 1, 105-118 (2008).

Papers

29. B. A. Trofimov, T. T. Minakova, T. A. Tandura, A. I. Mikhaleva, and S. E. Korostova, *Polymerization of N-vinylpyrroles*, *J. Polym. Sci.: Polym. Chem. Ed.*, 1547-1550 (1980).
30. M. V. Sigalov, B. A. Trofimov, A. I. Mikhaleva, and G. A. Kalabin, *¹H and ¹³C NMR study of conformational and electronic structure of 1-vinylpyrroles*, *Tetrahedron*, **37**, 3051-3059 (1981).
31. M. Witanowski, S. Biernat, L. Stefaniak, B. A. Trofimov, A. I. Mikhaleva, and G. A. Webb, *Nitrogen-14 nuclear magnetic resonance of some N-vinylpyrroles*, *Bull. Acad. Pol. Sci., Ser. Sci. Chem.*, **29**, 17-22 (1981).
32. A. V. Afonin, M. V. Sigalov, S. E. Korostova, I. A. Aliev, A. V. Vashchenko, and B. A. Trofimov, *Intramolecular interactions in N-vinyl-2-arylpvrroles and -2-heteroarylpyrroles by ¹H and ¹³C NMR*, *Magn. Res. Chem.*, **28**, 580-586 (1990).
33. L. N. Sobenina, A. I. Mikhaleva, M. P. Sergeeva, N. I. Golovanova, R. I. Polovnikova, and B. A. Trofimov, *Radical addition of methyl mercaptoacetate to N-vinylpyrroles*, *Sulfur Lett.*, **15**, 227-232 (1992).

34. M. V. Sigalov, E. Yu. Shmidt, A. B. Trofimov, and B. A. Trofimov, *Protonated forms of 2-(2-furyl)pyrroles and their interconversions: ¹H NMR and quantum-chemical (MNDO) study*, *J. Org. Chem.*, **57**, 3934-3938 (1992).
35. M. V. Sigalov, A. B. Trofimov, E. Yu. Shmidt, and B. A. Trofimov, *Protonation of 2-(2'-thienyl)-pyrrole and 2-(2'-thienyl)-1-vinylpyrroles*, *J. Phys. Org. Chem.*, **6**, 471-477 (1993).
36. M. V. Sigalov, S. Toyota, M. Oki, and B. A. Trofimov, *Dynamic NMR as a nondestructive method for determination of rates of dissociation. XXI. Dissociation in 1-(1-haloethyl)pyrrolium cations*, *Bull. Chem. Soc. Jpn.*, **67**, 1161-1169 (1994).
37. M. V. Sigalov, S. Toyota, M. Oki, and B. A. Trofimov, *Addition of hydrogen halides to 1,2-dialkyl-pyrrolium cations*, *Bull. Chem. Soc. Jpn.*, **67**, 1872-1878 (1994).
38. O. A. Tarasova, A. G. Mal'kina, A. I. Mikhaleva, L. Brandsma, and B. A. Trofimov, *An efficient procedure for the N-vinylation of pyrrole*, *Synth. Commun.*, **24**, 2035-2037 (1994).
39. L. Brandsma, A. G. Mal'kina, and B. A. Trofimov, *An improved procedure for N-ethynylpyrrole*, *Synth. Commun.*, **24**, 2721-2724 (1994).
40. L. N. Sobenina, A. I. Mikhaleva, M. P. Sergeeva, O. V. Petrova, T. N. Aksamentova, O. B. Kozyreva, D.-S. D. Toryashinova, and B. A. Trofimov, *Pyrrole-2-dithiocarboxylates: Synthesis of 2-(1-alkylthio-2-cyanoethenyl)pyrroles*, *Tetrahedron*, **51**, 4223-4230 (1995).
41. A. G. Mal'kina, O. A. Tarasova, H. D. Verkruisze, A. C. H. T. M. van der Kerk, L. Brandsma, and B. A. Trofimov, *Metallation and functionalization of N-vinylpyrrole*, *Rec. Trav. Chim. Pays-Bas*, **114**, No. 1, 18-21 (1995).
42. A. G. Mal'kina, R. den Besten, A. C. H. T. M. van der Kerk, L. Brandsma, and B. A. Trofimov, *Dimetallation of N-ethynylpyrrole and subsequent regiospecific derivatization*, *J. Organometal. Chem.*, **493**, 271-273 (1995).
43. O. A. Tarasova, F. Taherirastgar, H. D. Verkruisze, A. G. Mal'kina, L. Brandsma, and B. A. Trofimov, *Metallation and functionalization of 1-allenylpyrrole*, *Rec. Trav. Chim. Pays-Bas.*, **115**, 145-147 (1996).
44. L. N. Sobenina, A. I. Mikhaleva, D.-S. D. Toryashinova, and B. A. Trofimov, *Exchange of the ethylthio group in 1-ethylthio-2-cyano-3-imino-4,5,6,7-tetrahydrocyclohexa[c]-3H-pyrrolizine for an amino group*, *Sulfur Lett.*, **20**, 9-14 (1996).
45. B. A. Trofimov, L. V. Andriankova, A. G. Mal'kina, A. V. Afonin, and T. I. Vakul'skaya, *Unexpected reaction of 5-mercaptoquinoline with 4-hydroxy-2-alkynenitriles*, *Sulfur Lett.*, **20**, 23-30 (1996).
46. N. A. Nedolya, L. Brandsma, and B. A. Trofimov, *Directed synthesis of isomeric thiazole and imidazole derivatives from methyl isothiocyanate*, *Tetrahedron Lett.*, **38**, 6279-6280 (1997).
47. L. Brandsma, N. A. Nedolya, H. D. Verkruisze, N. L. Owen, Du Li, and B. A. Trofimov, *Synthesis of 2,3 dihydropyridines, cyclobutanopyrrolines, and quinolines from lithiated allenes and isothiocyanates*, *Tetrahedron Lett.*, **38**, 6905-6908 (1997).
48. O. A. Tarasova, N. A. Nedolya, V. Yu. Vvedensky, L. Brandsma, and B. A. Trofimov, *Synthesis of 2,5-bis(N,N-dialkylamino)thiophenes or 1-alkyl-2-N,N-dialkylamino-5-methylthiopyrroles from propargylic amines and isothiocyanates*, *Tetrahedron Lett.*, **38**, 7241-7242 (1997).
49. N. A. Nedolya, L. Brandsma, H. D. Verkruisze, and B. A. Trofimov, *A simple preparative method for 2-alkylthiopyrroles*, *Tetrahedron Lett.*, **38**, 7247-7248 (1997).
50. N. A. Nedolya, L. Brandsma, A. H. T. M. van der Kerk, V. Yu. Vvedensky, and B. A. Trofimov, *Synthesis of 1-alkyl-5,6-bis(alkylthio)-1,2-dihydropyridines and their thermally induced conversion into 1-alkyl-3-alkylthio-2H-pyridine-2-thiones*, *Tetrahedron Lett.*, **39**, 1995-1996 (1998).
51. N. A. Nedolya, L. Brandsma, O. A. Tarasova, H. D. Verkruisze, and B. A. Trofimov, *Application of copper catalysis in a one-pot procedure for 1-alkyl-3-methoxy-2-methylthiopyrroles starting from methoxyallene and alkyl isothiocyanates*, *Tetrahedron Lett.*, **39**, 2409-2410 (1998).

52. N. A. Nedolya, L. Brandsma, H. D. Verkrijssse, A. H. T. M. van der Kerk, and B. A. Trofimov, *Synthesis of derivatives of 2-imino-5,6-dihydro-2H-thiopyran from 1-heteroalkyl-1,3-butadienes and isothiocyanates*, *Tetrahedron Lett.*, **39**, 2631-2634 (1998).
53. O. A. Tarasova, L. V. Klyba, V. Yu. Vvedensky, N. A. Nedolya, B. A. Trofimov, L. Brandsma, and H. D. Verkrijssse, *One-pot syntheses of 2-N-alkylamino-, 2-N-phenylamino-, 2-N,N-dialkylamino-, and 2-N-alkyl-N-phenylaminothiophenes*, *Eur. J. Org. Chem.*, 253-256 (1998).
54. B. A. Trofimov, N. A. Nedolya, L. Brandsma, Yu. L. Frolov, E. Yu. Larionova, D.-S. D. Toryashinova, V. B. Kobylev, and N. M. Vitkovskaya, *A theoretical and experimental study of the remarkable cyclization of (methylthio)azatrienes to cyclobuta[b]pyrrole derivatives*, *Sulfur Lett.*, **22**, 249-256 (1999).
55. L. Brandsma, N. A. Nedolya, and B. A. Trofimov, *A versatile synthetic method for preparing 1,2,3,5-tetrasubstituted pyrroles using isothiocyanates and 2-alkynyl ethers or 2-alkynyl amines as building units*, *Eur. J. Org. Chem.*, 2663-2664 (1999).
56. L. N. Sobenina, A. I. Mikhaleva, O. V. Petrova, D-S. D. Toryashinova, L. I. Larina, L. N. Il'icheva, and B. A. Trofimov, *Synthesis of 5-amino-3-(2-pyrrolyl)pyrazoles*, *Zh. Org. Khim.*, **35**, 1241-1245 (1999).
57. B. A. Trofimov, Z. V. Stepanova, L. N. Sobenina, A. I. Mikhaleva, T. I. Vakul'skaya, I. A. Ushakov, D-S. D. Toryashinova, and É. I. Kositsyna, *Pyrroles as C-nucleophiles in reaction with acylacetylenes*, *Izv. Akad. Nauk, Ser. Khim.*, 1562-1567 (1999).
58. B. A. Trofimov, Z. V. Stepanova, L. N. Sobenina, A. I. Mikhaleva, I. A. Ushakov, and D-S. D. Toryashinova, *Reaction of 2-phenylpyrrole with 2-acyl-1-phenylacetylenes on silicon oxide*, *Khim. Geterotsikl. Soedin.*, 1253-1254 (1999). [*Chem. Heterocycl. Comp.*, **35**, 1107-1108 (1999)].
59. B. A. Trofimov, L. N. Sobenina, A. I. Mikhaleva, A. P. Demenev, O. A. Tarasova, I. A. Ushakov, and S. V. Zinchenko, *Reaction of pyrrole anions with carbon disulfide. Synthesis of pyrrole-3-carbo-dithioates*, *Tetrahedron*, **56**, 7325-7329 (2000).
60. B. A. Trofimov, A. M. Vasil'tsov, E. Yu. Schmidt, A. B. Zaitsev, A. I. Mikhaleva, and A. V. Afonin, *Direct vinylation of cholesterol with acetylene*, *Synthesis*, 1521-1522 (2000).
61. B. A. Trofimov, O. A. Tarasova, A. I. Mikhaleva, N. A. Kalinina, L. M. Sinegovskaya, and J. Henkelmann, *A novel facile synthesis of 2,5-di- and 2,3,5-trisubstituted pyrroles*, *Synthesis*, 1585-1590 (2000).
62. L. N. Sobenina, A. P. Demenev, A. I. Mikhaleva, O. V. Petrova, L. I. Larina, G. P. Chernykh, D.-S. D. Toryashinova, A. V. Vashchenko, and B. A. Trofimov, *Synthesis and reactions with carbon disulfide of 5-amino-3-(2-pyrrolyl)pyrazoles*, *Sulfur Lett.*, **24**, 1-12 (2000).
63. B. A. Trofimov, L. V. Andriyankova, A. G. Mal'kina, Du Li, N. L. Oun, and A. V. Afonin, *Cyanoacetylene and its derivatives. XXV. Features of the autoassembly of polyfunctional spirocyclic systems from 3-(1-hydroxycyclohexyl)-2-propionitrile and 2-mercaptopquinoline*, *Zh. Org. Khim.*, **36**, 444-447 (2000).
64. A. V. Afonin, I. A. Ushakov, O. V. Petrova, L. N. Sobenina, A. I. Mikhaleva, V. K. Voronov, and B. A. Trofimov, *Study of the stereochemical and electronic structure of a series of 2-(pyridyl)pyrroles by means of their ¹H and ¹³C NMR spectra*, *Zh. Org. Khim.*, **36**, 1074-1080 (2000).
65. L. Brandsma, N. A. Nedolya, and B. A. Trofimov, *Synthesis of 3-hydroxy-1-methyl-2-(methylthio)pyrrole from methyl isothiocyanates and prop-2-yn-1-ol*, *Izv. Akad. Nauk, Ser. Khim.*, 1645-1647 (2000).
66. L. N. Sobenina, A. P. Demenev, A. I. Mikhaleva, V. N. Elokhina, A. G. Mal'kina, O. A. Tarasova, I. A. Ushakov, and B. A. Trofimov, *The addition reactions of pyrrolecarbodithioates to activated alkenes and alkynes*, *Synthesis*, 293-299 (2001).
67. B. A. Trofimov, Z. V. Stepanova, L. N. Sobenina, A. I. Mikhaleva, I. A. Ushakov, and V. N. Elokhina, *C-Vinylation of 1-vinylpyrroles with benzoylacetylene on silica gel*, *Synthesis*, 1878-1882 (2001).

68. B. A. Trofimov, N. M. Vitkovskaya, V. B. Kobychev, E. Yu. Larionova, L. N. Sobenina, A. I. Mikhaleva, and A. P. Demenev, *Addition of Pyrrole Anions to Carbon Disulfide. Theoretical Analysis*, *Sulfur Lett.*, **24**, 181-190 (2001).
69. L. N. Sobenina, A. P. Demenev, A. I. Mikhaleva, V. N. Elokhina, Z. V. Stepanova, A. G. Mal'kina, I. A. Ushakov, and B. A. Trofimov, *Zh. Org. Khim.*, **37**, 582-586 (2001).
70. V. B. Kobychev, N. M. Vitkovskaya, I. L. Zaitseva, E. Yu. Larionova, and B. A. Trofimov, *Nonempirical quantum-chemical investigation of the reaction of pyrrole anions with carbon disulfide*, *Zh. Struktur. Khim.*, **42**, 645-653 (2001).
71. B. A. Trofimov, L. V. Andriyankova, S. A. Zhivet'ev, A. G. Mal'kina, and V. K. Voronov, *A facile annelation of pyridines with nitriles of α,β -acetylenic- γ -hydroxyacids*, *Tetrahedron Lett.*, **43**, 1093-1096 (2002).
72. L. N. Sobenina, A. P. Demenev, A. I. Mikhaleva, I. A. Ushakov, A. V. Afonin, O. V. Petrova, V. N. Elokhina, K. A. Volkova, D.-S. D. Toryashinova, and B. A. Trofimov, *Functionally substituted 1,3-diethenyl[1,2-*c*][1,3]pyrrolothiazoles from pyrrole-2-carbodithioates*, *Sulfur Lett.*, **25**, 87-93 (2002).
73. L. V. Andriyankova, S. A. Zhivet'ev, A. G. Mal'kina, R. N. Kudyakova, and É. I. Kositsyna, *Cyanoacetylene and its derivatives. XXXI. Nucleophilic addition of 2- and 4-mercaptopyridines to cyanoacetyles*, *Zh. Org. Khim.*, **38**, 1738-1742 (2002).
74. A. M. Vasil'tsov, E. Yu. Shmidt, A. I. Mikhaleva, A. B. Zaitsev, Ya.-D. Arndt, I. Henkelmann, and B. A. Trofimov, *Cyclization of *N*-(1,1-dimethyl-2-propynyl)acetamide to 2,2,3,5,5,6-hexamethyl-2,5-dihydropyrazine*, *Khim. Geterotsikl. Soedin.*, 1156-1157 (2002). [*Chem. Heterocycl. Comp.*, **38**, 1016-1018 (2002)].
75. B. A. Trofimov, A. P. Demenev, L. N. Sobenina, A. I. Mikhaleva, and O. A. Tarasova, *The first chemoselective synthesis of functionalized 3-vinylpyrroles*, *Tetrahedron Lett.*, **44**, 3501-3503 (2003).
76. B. A. Trofimov, L. N. Sobenina, A. I. Mikhaleva, I. A. Ushakov, T. I. Vakul'skaya, Z. V. Stepanova, D.-S. D. Toryashinova, A. G. Mal'kina, and V. N. Elokhina, *N- and C-Vinylation of pyrroles with disubstituted activated acetylenes*, *Synthesis*, 1272-1278 (2003).
77. L. N. Sobenina, A. I. Mikhaleva, I. A. Ushakov, V. N. Elokhina, and B. A. Trofimov, *The first example of C-vinylation of pyrroles by activated acetylene under conditions of base catalysis*, *Zh. Org. Khim.*, **39**, 1266-1267 (2003).
78. T. I. Vakul'skaya, L. N. Sobenina, A. I. Mikhaleva, V. N. Elokhina, A. G. Mal'kina, and B. A. Trofimov, *Radical intermediates of nucleophilic addition of pyrroles to disubstituted activated acetylenes*, *Dokl. Akad. Nauk*, **390**, 484-487 (2003).
79. L. N. Sobenina, A. I. Mikhaleva, I. A. Ushakov, V. N. Elokhina, and B. A. Trofimov, *Unexpected 1:2 annelation of 4,5,6,7-tetrahydroindole with 1-benzoyl-2-phenylacetylene*, *Khim. Geterotsikl. Soedin.*, 1269-1270 (2003). [*Chem. Heterocycl. Comp.*, **39**, 1113-1114 (2003)].
80. B. A. Trofimov, A. B. Zaitsev, E. Yu. Schmidt, A. M. Vasil'tsov, A. I. Mikhaleva, I. A. Ushakov, A. V. Vashchenko, and N. V. Zorina, *From 1,4-diketones to N-vinyl derivatives of 3,3'-bipyrroles and 4,8-dihydropyrrolo[2,3-*f*]indole in just two preparative steps*, *Tetrahedron Lett.*, **45**, 3789-3791 (2004).
81. B. A. Trofimov, Z. V. Stepanova, L. N. Sobenina, A. I. Mikhaleva, and I. A. Ushakov, *Ethynylation of pyrroles with 1-acyl-2-bromoacetylenes on alumina: a formal 'inverse Sonogashira coupling'*, *Tetrahedron Lett.*, **45**, 6513-6516 (2004).
82. Z. V. Stepanova, L. N. Sobenina, A. I. Mikhaleva, I. A. Ushakov, N. N. Chipanina, V. N. Elokhina, V. K. Voronov, and B. A. Trofimov, *Silica-assisted reactions of pyrroles with 1-acyl-2-bromoacetylenes*, *Synthesis*, 2736-2742 (2004).
83. V. B. Kobychev, N. M. Vitkovskaya, N. V. Pavlova, E. Yu. Shmidt, and B. A. Trofimov, *Zh. Struktur. Khim.*, **45**, 792-799 (2004).

84. V. B. Kobychev, N. M. Vitkovskaya, I. L. Zaitseva, and B. A. Trofimov, *Quantum-chemical investigation of the profiles of formation of N-adducts of the pyrrole anion with CS₂ and CO₂*, *Zh. Struktur. Khim.*, **45**, 990-993 (2004).
85. B. A. Trofimov, A. M. Vasil'tsov, E. Yu. Schmidt, N. V. Zorina, A. V. Afonin, A. I. Mikhaleva, K. B. Petrushenko, I. A. Ushakov, L. B. Krivdin, V. K. Belsky, and L. I. Bryukvina, *Synthesis, structure, and spectral properties of bis(pyrrol-2-yl)pyridines*, *Eur. J. Org. Chem.*, 4338-4345 (2005).
86. L. N. Sobenina, V. N. Drichkov, A. I. Mikhaleva, O. V. Petrova, I. A. Ushakov, and B. A. Trofimov, *Synthesis of 3- and 5-amino-5-(3)-(pyrrol-2-yl)isoxazoles*, *Tetrahedron*, **61**, 4841-4849 (2005).
87. B. A. Trofimov, O. V. Petrova, L. N. Sobenina, V. N. Drichkov, A. I. Mikhaleva, I. A. Ushakov, O. A. Tarasova, O. N. Kazheva, A. N. Chekhlov, and O. A. Dyachenko, *Vinylic nucleophilic substitution in functionalized 2-vinylpyrroles: a route to a new family of stable enols*, *Tetrahedron*, **62**, 4146-4152 (2006).
88. A. V. Afonin, I. A. Ushakov, L. N. Sobenina, Z. V. Stepanova, O. V. Petrova, and B. A. Trofimov, *Different types of hydrogen bonds in 2-substituted pyrroles and 1-vinylpyrroles as monitored by ¹H, ¹³C, and ¹⁵N NMR spectroscopy and ab initio calculations*, *Magn. Res. Chem.*, **44**, 59-65 (2006).
89. A. I. Mikhaleva, A. B. Zaitsev, A. V. Ivanov, E. Yu. Schmidt, A. M. Vasil'tsov, and B. A. Trofimov, *Expedient synthesis of 1-vinylpyrrole-2-carbaldehydes*, *Tetrahedron Lett.*, **47**, 3693-3696 (2006).
90. B. A. Trofimov, O. V. Petrova, L. N. Sobenina, I. A. Ushakov, A. I. Mikhaleva, Yu. Yu. Rusakov, and L. B. Krivdin, *Facile α- to β-migration of the enol moiety over the pyrrole ring*, *Tetrahedron Lett.*, **47**, 3645-3648 (2006).
91. S. Badre, V. Monnier, R. Méallet-Renault, C. Dumas-Verdes, E. Yu. Schmidt, A. I. Mikhaleva, G. Laurent, G. Levi, A. Ibanez, B. A. Trofimov, and R. B. Pansu, *Fluorescence of molecular micro- and nanocrystals prepared with Bodipy Derivatives*, *J. Photochem. Photobiology, A: Chem.*, **183**, 238-246 (2006).
92. C. Pozo-Gonzalo, J. A. Pomposo, J. Rodriguez, E. Yu. Schmidt, A. M. Vasil'tsov, N. V. Zorina, A. V. Ivanov, B. A. Trofimov, A. I. Mikhaleva, and A. B. Zaitsev, *Synthesis and electrochemical study of narrow band gap conducting polymers based on 2,2-dipyrroles linked with conjugated aza-spacers*, *Synth. Met.*, **157**, 60-65 (2007).
93. A. M. Vasil'tsov, A. V. Ivanov, I. A. Ushakov, A. I. Mikhaleva, and B. A. Trofimov, *Selective thiylation of 1-vinylpyrrole-2-carbaldehydes: Synthesis of 2-[bis(ethylsulfanyl)methyl]-1-vinylpyrroles and 1-(2-ethylthioethyl)pyrrole-2-carbaldehydes—novel pyrrole synthons*, *Synthesis*, 452-456 (2007).
94. Yu. Yu. Rusakov, L. B. Krivdin, E. Yu. Senotrusova, E. Yu. Schmidt, A. M. Vasil'tsov, A. I. Mikhaleva, B. A. Trofimov, O. A. Dyachenko, and A. N. Cheklov, *Conformational Study of 2-Arylazo-1-vinylpyrroles*, *Magn. Res. Chem.*, **45**, 142-151 (2007).
95. B. A. Trofimov, L. N. Sobenina, Z. V. Stepanova, I. A. Ushakov, O. V. Petrova, O. A. Tarasova, K. A. Volkova, and A. I. Mikhaleva, *Regioselective cross-coupling of 1-vinylpyrroles with acylbromoacetylenes on Al₂O₃: Synthesis of 2-(2-acylethynyl)-1-vinylpyrroles*, *Synthesis*, 447-451 (2007).
96. C. Pozo-Gonzalo, J. A. Pomposo, J. A. Alduncin, M. Salsamendi, A. I. Mikhaleva, L. B. Krivdin, and B. A. Trofimov, *Orange to black electrochromic behavior in poly[2-(2-thienyl)-1H-pyrrole] thin films*, *Electrochim. Acta*, **52**, 4784-4791 (2007).
97. B. A. Trofimov, L. N. Sobenina, A. I. Mikhaleva, O. V. Petrova, V. N. Drichkov, I. A. Ushakov, O. A. Tarasova, D.-S. D. Toryashinova, Yu. Yu. Rusakov, and L. B. Krivdin, *Facile coupling of 2-(1-ethylthioethenyl)pyrroles with amines: a route to 2-(1-aminoethenyl)pyrroles and 1-amino-3-iminopyrrolizines*, *J. Heterocycl. Chem.*, **44**, 505-514 (2007).

98. B. A. Trofimov, L. N. Sobenina, A. P. Demenev, Z. V. Stepanova, O. V. Petrova, I. A. Ushakov, and A. I. Mikhaleva, *A palladium- and copper-free cross-coupling of ethyl 3-halo-2-propynoates with 4,5,6,7-tetrahydroindoles on alumina*, *Tetrahedron Lett.*, **48**, 4661-4664 (2007).
99. R. Mealle-Reno, J. Clavier, S. Duma-Verd, S. Badre, E. Yu. Shmidt, A. I. Mikhaleva, Sh. Lapren, R. B. Pansyu, P. Odeber, and B. A. Trofimov, *Synthesis of new BODIPY from sterically hindered pyrroles and study of their photophysical behaviour in solution, in polystyrene nanoparticles, and in the solid phase*, *Rossiiskii Khimicheskii Zhurnal (Russian-French collaboration in the field of chemistry)*, **52**, 91-99 (2008).
100. L. N. Sobenina, V. N. Drichkov, O. V. Petrova, I. A. Ushakov, T. V. Kashik, L. B. Krivdin, Yu. Yu. Rusakov, E. V. Zykova, A. I. Mikhaleva, and B. A. Trofimov, *Unprecedented easy migration of a functionalized enolic substituent in a pyrrole ring*, *Zh. Org. Khim.*, **44**, 246-255 (2008).

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