

Professor Domenico Spinelli

Tribute



Mimmo Spinelli was born in Bari (Italy) on May 30, 1932. He obtained his degree in Chemistry *cum laude* from the University of Bari in 1955. He started his academic career, in the same year, in the Faculty of Sciences of the same University, becoming Assistant Professor of Organic Chemistry. He moved, in 1962, to the Faculty of Sciences of the University of Genova where, in 1963, he became Associate Professor of Organic Chemistry. He was appointed to the Chair of Organic Chemistry at the Faculty of Pharmacy of the University of Sassari in 1968. After one year he moved to the Faculty of Sciences of the University of Palermo. In 1974 he finally moved to the Faculty of Pharmacy of the University of Bologna, in which delightful town he finally settled. He accumulated a wealth of experience in his various appointments, ranging practically as far over the length and breadth of Italy as is physically possible – which is rather unusual in an academic of that country, who tends more often to take root in the University where he began his career. He is currently Coordinator of the Ph.D. courses in Pharmaceutical Sciences and, on the wider scene, Scientific Coordinator of “Progetti di Interesse Nazionale” entitled “The Chemistry of the Five-membered Heterocycles”, “Synthesis and Organic Reactivity”, and “Building Blocks from and/or for Heterocyclic Systems”.

In 1974 he received the golden “Sigillum Magnum” of the University of Palermo and in 1996 he was awarded the “A. Mangini” Gold Medal by the Italian Chemical Society for significant work in heterocyclic chemistry.

Domenico Spinelli has served the chemical community for many years. He was member of the Executive Committee and then President (1993–95) of the Division of Organic Chemistry of the Italian Chemical Society; and Vice-President (1996–99) then from 1999 President of the

Italian Chemical Society for three years. Moreover, he is co-editor of the series, "Topics in Heterocyclic Systems" and of, "Targets in Heterocyclic Systems".

He is author of over two hundred papers (in *J. Chem. Soc. Perkin Trans. 1* and *2*, *Chem. Commun.*, *J. Org. Chem.*, *Tetrahedron*, *Tetrahedron Lett.*, *J. Med. Chem.*, *J. Heterocyclic Chem.*, *Heterocycles*, *Magn. Res. Chem.*, etc.) dealing with the study of the reactivity and properties of five-membered heterocycles [thiophenes and benzothiophenes (nucleophilic aromatic substitutions); 1,2,4-oxadiazoles and isoxazoles (mononuclear heterocyclic rearrangements); imidazoles and condensed imidazoles (ring-ring interconversions); 1,3,4-oxadiazoles, -thiadiazoles and thiazoles (decarboxylation reactions); furans and congeners (enolisation reactions); etc.], micellar catalysis, the mutagenic properties of nitro derivatives, the properties of carnitine and its derivatives, the pharmacological properties of thiazinooxadiazolones, etc.

However Domenico Spinelli is not only a distinguished scientist with a long, successful career, rich in results and achievements; he is also a person with splendid human values, always willing to help his neighbors. He is a devoted father to his four children, and enjoys the support of his wife Titina. His keen and wide-ranging mind is always much in evidence when he relaxes over a glass of wine with collaborators and friends. I am fortunate to be amongst these latter and I feel honoured to have been invited to act as "facilitator" of an issue of Arkivoc dedicated to him.

Girolamo Cirrincione

Dipartimento Farmacochimico

Tossicologico e Biologico

Università di Palermo

Via Archirafi 32, 90123 Palermo

Italy

E-mail: gcirrinc@unipa.it

Selected Publications of Domenico Spinelli

1. Ruccia, M.; Spinelli, D. Trasformazione dei derivati del furo-ab₁-diazolo in derivati del 2,1,3-triazolo *Gazz. Chim. Ital.* **1959**, *89*, 1654.
2. Spinelli, D.; Guanti, G.; Dell'Erba, C. Thiophene Series. Note IX. The absence of secondary steric effects in nucleophilic substitutions of thiophene derivatives: kinetics of the reactions of 2-bromo-3,5-dinitrothiophene and 2-bromo-3,5-dinitro-4-methylthiophene with piperidine *J. Heterocycl. Chem.* **1968**, *5*, 323.
3. Dell'Erba, C.; Spinelli, D.; Leandri, G. Ring-opening Reaction in the Thiophen Series: Reaction between 3,4-Dinitrothiophen and Secondary Amines, *Chem. Commun.* **1969**, 549.
4. Spinelli, D. ; Guanti, G.; Dell'Erba, C. Transmission of Substituent Effects in Systems with Bonds of Different Order: Kinetics of the Reactions of 3-Bromo-2-nitro-4-X-thiophens and

- 3-Bromo-4-nitro-2-X-thiophenes with Sodium Benzenethiolate in Methanol *J. Chem. Soc., Perkin Trans.* **1972**, 2, 441.
5. Spinelli, D.; Corrao, A.; Frenna, V.; Vivona, N.; Ruccia, M.; Cusmano, G. Mononuclear Heterocyclic Rearrangement. Note I. Kinetic Study of the Rearrangement of the Phenylhydrazone of 3-Benzoyl-5-phenyl-1,2,4-oxadiazole into 2,5-Diphenyl-4-benzoylamino-1,2,3-triazole *J. Heterocycl. Chem.* **1976**, 13, 357.
 6. Spinelli, D.; Consiglio, G.; Noto, R. Catalysis in Aromatic Nucleophilic Substitution. Part 3. Reactions of Piperidine with 2-Methoxy-3-nitrothiophene and 2-Methoxy-5-nitrothiophene in Methanol *J. Org. Chem.* **1978**, 43, 4038.
 7. Spinelli, D.; Noto, R.; Consiglio, G.; Werber, G.; Buccheri, F. Studies on Decarboxylation Reactions. 3. Micellar Catalysis in the Decarboxylation of 5-Amino-1,3,4-thiazole-2-carboxylic acid *J. Org. Chem.* **1978**, 43, 4042.
 8. Consiglio, G.; Spinelli, D.; Gronowitz, S.; Hörnfeldt, A.-B.; Maltesson, B.; Noto, R. Kinetics of the Reactions of Some 5-Bromo-2-nitro-3-R-thiophenes, 3,4-Dibromo-2-nitro-5-R-thiophenes, 3-Bromo-2-nitro-5-R-thiophenes, and 2-Bromo-3-nitro-5-R-thiophenes with Nucleophiles in Methanol, *J. Chem. Soc., Perkin Trans.* **1982**, 2, 625.
 9. Ruccia, M.; Vivona, N.; Spinelli, D. Mononuclear Heterocyclic Rearrangements *Adv. Het. Chem.*, Academic Press: 1981; Vol. 29, pp 141–169.
 10. Lunazzi, D. Macciantelli, D. Spinelli and G. Consiglio, Conformational Studies by Dynamic Nuclear Magnetic Resonance, Part 22. Torsional Barriers in Some (Dimethylamino)-nitrothiophenes, *J. Org. Chem.* **1982**, 47, 3759.
 11. Distefano, G.; Guerra, M.; Colonna, F. P.; Jones, D.; Consiglio, G.; Spinelli, D. Intense Shake-up Satellites in the XPS Spectra of Planar and Sterically Hindered *N*-Piperidyl-nitrobenzenes and -nitrothiophenes *Chem. Phys.* **1982**, 72, 267.
 12. Helbert, M.; Berthelot, M.; Laurence, C.; Spinelli, D.; Consiglio, G.; Arnone, C. Effects de Substituant en Spectroscopie Infrarouge. X. Acetyl-2-thiophènes Substitués en 5 *Spectrochim. Acta* **1983**, 39A, 703.
 13. Consiglio, G.; Spinelli, D.; Fisichella, S.; Alberghina, G.; Noto, R. Kinetics of Anilinodechlorination of 3-Bromo- and 3-Methoxy-2-thenoyl Chlorides in Benzene *J. Chem. Soc., Perkin Trans.* 2 **1983**, 1559.
 14. Attia, M.; Dave, D.; Gore, P. H.; Ikejiani, A. O. O.; Morris, D. F. C.; Short, E. L.; Consiglio, G.; Spinelli, D.; Frenna, V. Linear Free Energy Relationships in the Thiophene Series. Part 3. A Kinetic Study of Chlorine-isotopic Exchange between Lithium Chloride and Some 2-Chloro-3-nitro-5-X-thiophenes *J. Chem. Soc., Perkin Trans.* 2 **1984**, 1637.
 15. Arnone, C.; Gottarelli, G.; Spada, G. P.; Spinelli, D.; Exner, O. A Study of the Conformation of Some 3,3'-Bithienyl and Biselenenyl Derivatives by Measurements of Twisting Powers in Nematic Liquid Crystals and of Dipole Moments *J. Mol. Struct.* **1986**, 147, 307.
 16. Dell'Erba, C.; Sancassan, F.; Novi, M.; Petrillo, G.; Mugnoli, A.; Spinelli, D.; Consiglio, G.; Gatti, P. A ¹³C Nuclear Magnetic Resonance Study on the Nature of Resonance

- Interactions in 4-Substituted Benzonitriles, Acetophenones, and Methyl Benzoates *J. Org. Chem.* **1988**, *53*, 3564.
17. Arnone, C.; Consiglio, G.; Spinelli, D.; Dell'Erba, C.; Sancassan, F.; Terrier, F. Meisenheimer-type Adducts from Thiophene Derivatives. Part 6. A Kinetic and Thermodynamic Study of Substituent Effects on the Formation of Some non-*gem* Adducts *J. Chem. Soc., Perkin Trans. 2* **1989**, 1609.
 18. Spinelli, D.; Consiglio, G.; Dell'Erba, C.; Novi, M. Nucleophilic Substitution of Thiophene Derivatives, in "Thiophene and Its Derivatives" part 4, J. Wiley and Sons: Ed.; Gronowitz, S. 1991; Chap. II, Pp. 295–396.
 19. Dell'Erba, C.; Mele, A.; Musio, R.; Novi, M.; Petrillo, G.; Sancassan, F.; Sciacovelli, O.; Spinelli, D. Substituent Effects on One-Bond ^{13}C – ^{13}C NMR Coupling Constants between the Carbonyl Carbon and C_1 in Methyl Benzoates. Is There a Dependence on π -Bond-Order Changes? *J. Org. Chem.* **1992**, *57*, 4061.
 20. Spinelli, D.; Mugnoli, A.; Andreani, A.; Rambaldi, M.; Frascari, S. A New Ring Transformation: Conversion of 6-*p*-Chlorophenyl-3-methyl-5-nitrosoimidazo[2,1-*b*]thiazole into 6-*p*-Chlorophenyl-8-hydroxy-5-methyl-3-oxo-1,2,4-oxadiazolo[3,4-*c*][1,4-]thiazine by the Action of Mineral Acids *J. Chem. Soc., Chem. Commun.* **1992**, 1394.
 21. Maria, De. P.; Fontana, A.; Spinelli, D.; Dell'Erba, C.; Novi, M.; Petrillo, G.; Sancassan, F. Basicity ($\text{p}K_{\text{BH}^+}$) and Acidity Constants ($\text{p}K_{\text{a}}^*$) of some 3-*X*-, 4-*X*-, and 2,6-Dimethyl-4-*X*-benzoic Acids *J. Chem. Soc., Perkin Trans. 2* **1993**, 649.
 22. Maria, De. P.; Fontana, A.; Frascari, S.; Gargaro, G.; Spinelli, D.; Tinti, M. O. Effects of the Addition of Electrolytes on the Partition Coefficients, Activity Coefficients, and Acid Dissociation Constants of Carnitine and its Acetyl and Propionyl Derivatives *J. Pharm. Sci.*, **83**, **1994**, 742.
 23. Dell'Erba, C.; Novi, M.; Petrillo, G.; Spinelli, D.; Tavani, C. Synthetic Exploitation of the Ring-Opening of 3,4-Dinitrothiophene. Access to 1,4-Disubstituted 2,3-Dinitro-1,3-butadienes *Tetrahedron* **1996**, *52*, 3313.
 24. Arnone, C.; Consiglio, G.; Frenna, V.; Spinelli, D. Nucleophilic Substitution Reactions of 1-Halogeno-4-COR-2-nitrobenzenes and 1-Halogeno-6-COR-2-nitrobenzenes with Sodium Benzenethiolate and Piperidine. Can an "Inverted Built-In Solvation" Be Responsible for the Peculiar Activation by an *o*-Carboxamido Group in $\text{S}_{\text{N}}\text{Ar}$ Reactions with an Anionic Nucleophile?, *J. Org. Chem.* **1997**, *62*, 3093.
 25. Spinelli, D.; Zanirato, P.; Di Miceli, E.; Lamartina, L.; Guerrera, F. On the Reaction of 3-Bromo-2-nitrobenzo[*b*]thiophene ^{13}C -Labeled at C-2 with 3-(Trifluoromethyl)aniline: A Preliminary Insight into a Nucleophilic Substitution with Rearrangement *J. Org. Chem.* **1997**, *62*, 4921.
 26. Consiglio, G.; Spinelli, D.; Dell'Erba, C.; Novi, M.; Petrillo, G. Nucleophilic Substitutions on Thiophene Derivatives: A Multi-Lane Speedway, *Gazz. Chim. It.* **1997**, *127*, 753.

27. Billi, R.; Cosimelli, B.; Spinelli, D.; Andreani, A.; Leoni, A. Ring–Ring Interconversions of Nitrosoimidazoles. The Effect of some Condensed Six-Membered Rings on the Reactivity *Tetrahedron* **2000**, *56*, 6527.
28. Cipollone, M.; Maria, P. de.; Fontana, A.; Frascari, S.; Gobbi, L.; Spinelli, D.; Tinti, M. Formation of Micelles and Liposomes from Carnitine Amphiphiles *Eur. J. Med. Chem.* **2000**, *35*, 903.
29. Guernelli, S.; Noto, R.; Sbriziolo, C.; Spinelli, D.; Turco Liveri, M. L. Effects of Nonionic Micelles on the Rate of Mononuclear Heterocyclic Rearrangement of (*Z*)-Phenylhydrazones of 5-Substituted 3-Benzoyl-1,2,4-oxadiazoles, *J. Colloid Inter. Sci.*, **2001**, *239*, 217.
30. Cosimelli, B.; Guernelli, S.; Spinelli, D.; Buscemi, S.; Frenna, V.; Macaluso, G. On the Synthesis and Reactivity of the *Z*-2,4-Dinitrophenylhydrazone of 5-Amino-3-benzoyl-1,2,4-oxadiazole *J. Org. Chem.* **2001**, *66*, 6124.
31. Guernelli, S.; Laganà, M. F.; Spinelli, D.; Lo Meo, P.; Noto, R.; Riela, S. Host–Guest Interactions between β -Cyclodextrin and the (*Z*)-Phenylhydrazone of 3-Benzoyl-5-phenyl-1,2,4-oxadiazole: The First Kinetic Study of a Ring–Ring Interconversion in a “Confined Environment” *J. Org. Chem.* **2002**, 2948.
32. Budriesi, R.; Cosimelli, B.; Ioan, P.; Lanza, C. Z.; Spinelli, D.; Chiarini, A. Cardiovascular Characterization of [1,4]Thiazino[3,4-*c*][1,2,4]oxadiazol-1-one Derivatives: Selective Myocardial Calcium Channel Modulators *J. Med. Chem.* **2002**, *45*, 3475.