

## Referências

- 1 H. SHIRAKAWA.; E. J. LOUIS.; A.G. MACDIARMID.; C.R. CHIANG, A.J. HEEGER. **J. Chem. Soc., Chem. Commun.**, 578 (1977).
- 2 D. S. GALVAO.; D. A. DOS SANTOS.; B. LACKS.; C. P. DE MELO and M. J. CALDAS. **Phys. Rev. Lett.** 63, 186 (1989); 65, 526 (1990).
- 3 H.L. WU and P. PHILLIPS. **Phys. Rev. Lett.** 66, 1366 (1991).
- 4 D. H. DUNLAP.; H.-L. WU.; and P. PHILLIPS. **Phys. Rev. Lett.** 65, 88 (1990); D. H. DUNLAP.; K. KUNDU and P. PHILLIPS. **Phys. Rev.** B40, 10999 (1989).
- 5 P. A. SCHULZ.; D. S. GALVÃO e M. J. CALDAS. **Phys. Rev.** B44, 6073 (1991).
- 6 JOHN R. PLATT. **The Chemical Bond and the distribution of Electrons in Molecules**, na: Encyclopedia of Physics, vol. XXXVII/2, ed. S. Flugge - Springer-Verlag, Berlin (1961).
- 7 DAVID BLOOR. **Spectrum nº 188**, pg. 8 (1984).
- 8 A.O. PATIL.; A.J. HEEGER e F. WUDL. **Chem. Rev.** 88, 183(1988).
- 9 T. A. SKOTHEIM e M. DEKKER. **Handbook of Conducting Polymers**, Vols 1 e 2, New York (1986).
- 10 R. PEIERLS. **Quantum Theory of Solids**, Oxford University Press, Oxford (1955).
- 11 W. P. SU.; J. R. SCHRIEFFER.; A. J. HEEGER. **Solitons in polyacetylene**, Physical Review Letters 1979, 42, 1698.
- 12 W. P. SU.; J. R. SCHRIEFFER.; A. J. HEEGER. **Soliton excitations in polyacetylene**, Condensed Matter and Materials Physics 1980, 22, 2099.
- 13 MAIA, D.J.; DE PAOLI, M.A.; ALVES, O.L.; ZARBIN, A.J.G.; NEVES, S. **Síntese de Polímeros Condutores em Matrizes Sólidas Hospedeiras**. Química Nova. v 23. p. 205-213, 2000.
- 14 ZOPPI, R.A.; DE PAOLI, M.A. **Aplicações Tecnológicas de Polímeros Intrinsecamente Condutores**: Perspectivas Atuais. Química Nova. v 16(23). p.560-569, 1993.
- 15 BRÉDAS, J.L., STREET G.B. **Polarons, bipolarons, and solitons in conducting polymer**. Accounts of chemical research. v 18, p. 309-315, 1987.

- 16 FAEZ, R.; REIS, C.; FREITAS, P.S.; KOSIMA, K.; RUGGERI, G.; DE PAOLI, M.A. **Polímeros Condutores.** Química Nova na Escola. v.11. p. 13-18, 2000.
- 17 BERTON, A.N.B. **Eletropolimerização de O-Aminofenol e Caracterização dos Filmes Formados.** Tese de doutorado, Curitiba, PR, Universidade Federal do Paraná, UFPR, 2005.
- 18 **Handbook of Conducting Polymers** (Ed. T. A. Skotheim). Marcel Dekker, New York, 1986 and 1998.
- 19 A.G. MACDIARMID.; J.C. CHIANG.; A.F. RICHTER e A.J. EPSTEIN. **Synth. Met.** 18, 285(1987).
- 20 A.J. EPSTEIN.; J.M. GINDER.; F. ZUO.; H.S. WOO.; D.B. TANNER.; A.F. RICHTER.; M. ANGELOPOULOS.; W.S. HUANG e A.G. MACDIARMID. **Synth. Met.** 21, 63(1987).
- 21 J. L. BREDAS.; J. C. SCOTT.; K. YAKUSHI e G.B. STREET. **Phys. Rev. B** 30, 1023 (1984).
- 22 K. YAKUSHI.; L.J. LAUCHLAN.; GB. STREET e J.L. BREDAS. **J. Chem. Phys.** 81, 4133 (1984).
- 23 J.C. CHUNG.; J.H. KAUFMAN.; A.J. HEEGER e F. WUDL. **Phys. Rev. B** 30, 702 (1984).
- 24 G. CRECELIUS.; M. STAMM.; J. FINK e J.J. RITSKO. **Phys. Rev. Lett.** 50, 1498 (1983).
- 25 W.R. SALANECK.; I. LUNDSTRÖM.; T. HJERTBERG.; C.B. DUKE.; E. CONWELL.; A. PATON.; A.G. MACDIARMID.; N.L.D. SOMASIRI.; W.S. HUANG e A.F. RICHTER. **Synth. Met.** 18, 291 (1987).
- 26 S. STAFSTROM.; J. L. BREDAS.; A. J. EPSTEIN.; H. S. WOO.; D. B. TANNER.; W. S. HUANG and A. G. MACDIARMID. **Phys. Rev. Lett.** 59, 1464 (1987).
- 27 D. S. GALVAO.; D. A. DOS SANTOS.; B. LAKS.; C. P. DE MELO and M. J. CALDAS. **Phys. Rev. Lett.** 63, 786 (1989).
- 28 F. MOTT e W.D. TWOSE, **adv. Phys.** 10, 107 (1961).
- 29 P. W. ANDERSON, **Phys. Rev.** 109, 1492 (1958).
- 30 P. PHILLIPS and H. L. WU, **Science** 252, 1805 (1991).
- 31 A. F. RICHTER.; A. RAY.; K. V. RAMANATHAN.; S. K. MANOHAR.; G. T. FURST.; S. J. OPELLA and A. G. MACDIARMID. **Synth. Met.** 29, E243 (1989).
- 32 T. SOTOMURA.; H. UEMACHI.; K. TAKEYAMA.; K. NAOI.; N. OYAMA. **New organodisulfide polyaniline composite cathode for secondary lithium battery,** *Electrochimica Acta* 1992, 37, 1851.
- 33 N. OYAMA.; T. TATSUMA.; T. SATO.; T. SOTOMURA. **Dimercaptan–polyaniline composite electrodes for lithium batteries with high-energy density,’** *Nature* 1995, 373, 598.

- 34 G. GUSTAFSSON.; Y. CAO.; G. M. TREACY.; F. KLAVETTER.; N. COLANERI.; A. J. HEEGER. **Flexible light-emitting-diodes made from soluble conducting polymers**, Nature 1992, 357, 477.
- 35 Y. YANG.; E. WESTERWEELE.; C. ZHANG.; P. SMITH.; A. J. HEEGER. **Enhanced performance of polymer light-emitting diodes using high-surface area polyaniline network electrodes**, Journal of Applied Physics 1995, 77, 694.
- 36 R. K. YUAN.; S. C. YANG.; H. YUAN.; R. L. JIANG.; H. Z. QIAN.; D. C. GUI. **Surface field-effect of polyaniline film**, Synthetic Metals 1991, 41, 727.
- 37 K. S. LEE.; G. B. BLANCHET.; F. GAO.; Y. L. LOO. **Direct patterning of conductive water-soluble polyaniline for thin-film organic electronics**, Applied Physics Letters 2005, 86, 074102.
- 38 P. N. BARTLETT.; P. R. BIRKIN. **The application of conducting polymers in biosensors**, Synthetic Metals 1993, 61, 15.
- 39 J. A. OSAHENI.; S. A. JENEKHE.; H. VANHERZEELE.; J. S. METH.; Y. SUN.; A. G. MACDIARMID. **Nonlinear optical-properties of polyanilines and derivatives**, Journal of Physical Chemistry 1992, 96, 2830.
- 40 S. BAEK.; J. J. REE.; M. REE. **Synthesis and characterization of conducting poly(aniline-co-o-aminophenethyl alcohol)**, Journal of Polymer Science Part A – Polymer Chemistry 2002, 40, 983.
- 41 J. JOO.; C. Y. LEE. **High frequency electromagnetic interference shielding response of mixtures and multilayer films based on conducting polymers**, Journal of Applied Physics 2000, 88, 513.
- 42 K. GURUNATHAN.; A. V. MURUGAN.; R. MARIMUTHU.; U. P. MULIK.; D. P. AMALNERKAR. **Electrochemically synthesized conducting polymeric materials for applications towards technology in electronics, optoelectronics and energy storage devices**, Materials Chemistry and Physics 1999, 61, 173.
- 43 A. BARNES.; A. DESPOTAKIS.; T. C. P. WONG.; A. P. ANDERSON.; B. CHAMBERS.; P. V. WRIGHT. **Towards a “smart window” for microwave applications**, Smart Materials and Structures 1998, 7, 752.
- 44 R. ZAHRANDNIK e R. POLAK. **Elements of Quantum Chemistry**, Plenum Press, New York, 1980
- 45 P. KIREEV. **La Physique des Semiconducteurs**, Editions Mir, Moscou, 1975.
- 46 WALTER A. HARRISON.; **Solid State Theory**, McGraw-Hill, Inc. New York, 1970.
- 47 ALMON G. TURNER. **Methods in Molecular Orbital Theory**, Prentice-Hall, Inc, Englewood Cliffs, New Jersey.
- 48 WALTER A. HARRISON. **Solid State Theory**, McGraw-Hill, Inc. New York, 1970.

- 49 C.C. J. ROOTHAN. **Rev. Mod. Phys.** 23, 69, 1951.
- 50 M.L. KRASNOV.; G.I. MAKARENKO e A.I. KISELIOV. **Cálculo Variacional**, Editorial Mir – Moscou, 1976.
- 51 MALVIN B. ROBIN. **Higher Excited States of Poliatomic Molecules**, vol. II, Academic Press, New York, 1975.
- 52 A. STREITWIESER JR. **Molecular Orbital Theory**, Wiley, New York (1961).
- 53 N. W. ASHOCROFT.; N. D. MERMIN. **Solid State Physics**, Sawders College Publishing, New York (1976) pg 175.
- 54 R. KUBO, M. TODA and N. HASHITSUME. **Statistical Physics II: Non-equilibrium Statistical Mechanics**. Springer, Berlin, 1985; R. Kubo, *J. Phys. Soc. Jpn.* 12, 570 (1957).
- 55 KELDYSH, L. V. **Diagram technique for non-equilibrium processes**, Sov. Phys. JETP, 20, 1018, 1965.
- 56 LAPACK. **Linear Algebra Package**. Web page: <<http://www.netlib.org/lapack>>.
- 57 Encyclopedia of Nanoscience and Nanotechnology (Ed. H. S. Nalwa). 2004, 2: 153 –169.
- 58 TIRE A. SKOTHEIM and JOHN R. REYNOLDS. **Handbook of Conducting Polymers Third Edition**, 2007.
- 59 DE PAOLI, M.A. **Transporte de Massa em Polímeros Intrinsecamente Condutores**. Química Nova. v.23(3). p.358-368, 1999.
- 60 J. C. CHIANG.; A. G. MACDIARMID. **Synth. Met.**, 1986, 13: 193
- 61 W. S. HUANG.; B. D. HUMPHREY.; and A. G. MACDIARMID. **J. Chem. Soc. Commun. Faraday Trans.**, 1986, 82: 2385.
- 62 A. G. MACDIARMID. **Angew. Chem. Int. Ed.**, 2001, 40: 2581
- 63 P. M. MC MANUS.; S. C. YANG and R. J. CUSHMAN.; **J. Chem. SOC., Chem. Commun.**, 1985, 1556.
- 64 G. E. Wnek, *Synth. Met.*, 1986, 15, 213.
- 65 A. G. MACDIARMID.; J-C. CHIANG.; A. F. RICHTER and A. J. EPSTEIN, **Synth. Met.**, 1987, 18, 285.
- 66 a) D.E. STILWELL.; S. M. PARK. *J. Electrochem. Soc.*, 1988, 135: 2254; b) G. ZOTTI.; S. CATTARIN. *J. Electroanal. Chem.*, 1988, 239: 387; c) A. F. DIAZ.; J. A. LOGAN. *J. Electroanal. Chem.*, 1980, 111: 111; d) E. M. GENIES.; E. VIEIL. **Synth. Met.**, 1987, 20: 97; e) H. PINGSHENG.; Q. XIAOHUA.; L. CHUNE. **Synth. Met.**, 1993, 57: 5008.
- 67 DEBANGSHU CHAUDHURI.; A. KUMAR.; R. NIRMALA.; D. D. SARMA.; M. G. HERNANDEZ.; L. S. SHARATH CHANDRA and V. GANESAN. **Transport and Magnetic Properties of Conducting**

**Polyaniline Doped with BX<sub>3</sub> (X= F, Cl and Br).** Phys. Rev. B 73, 075205 (2006).

- 68 A. G. MACDIARMID.; J. C. CHIANG.; M. HALPERN.; W. HUANG.; S. MU.; L. NANAYAKKARA.; D. SOMASIRI.; W. WU and S. I. YANIGER. **Mol. Cryst. Liq. Cryst.** 121, 173 (1985).
- 69 A. J. EPSTEIN.; J. M. GINDER.; F. ZUO.; H. S. WOO.; D. B. TANNER.; A. F. RICHTER.; M. ANGELOPOULOS.; W. S. HUANG and A. G. MACDIARMID. **Synth. Met.** 21, 63 (1987).
- 70 J. JOO.; S. M. LONG.; J. P. POUGET.; E. J. OH.; A. G. MACDIARMID and A. J. EPSTEIN. **Phys. Rev. B** 57, 9567 (1998).
- 71 ZUBAREV D. N. 1960. **Double-time Green functions in statistical physics.** Sov. Phys. USP, 3(3), 320.
- 72 ABRIKOSOV A. A.; GORKOV L. P. and DZYALOSHINSKI I. E. 1975. **Methods of quantum field theory in statistical physics.** New York: Dover.
- 73 H. S. NALWA (ed.), **Handbook of Organic conductive Molecules and Polymers**, John Wiley & Sons, Chichester – England (1997), pg 470 Vol. 2.