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### Referências bibliográficas

- 1 Thorne, A.; Kruth, A.; Tunstall, D.; Irvine, J. T. S.; Zhou, W. “*Formation, Structure, and Stability of Titanate Nanotubes and Their Proton Conductivity*”. J. Phys. Chem. B, vol. 109 (12), 2005, p. 5439.
- 2 Uchida, S; Chiba, R.; Tomiha, M.; Masaki, N.; Shirai, M. “*Application of titania nanotubes to a dye-sensitized solar cell*”. Electrochemistry, vol. 70, 2002, p. 418.
- 3 Sun, X.; Li, Y. “*Synthesis and characterization of ion-exchangeable titanate nanotubes*”. Chemistry: A European Journal, vol. 9, 2003, p. 2229.
- 4 Bavykin, D.V.; Gordeev, S.N.; Maskalenco, A.V.; Lapkin, A.A.; Walsh, F.C. “*Apparent two-dimensional behavior of TiO<sub>2</sub> nanotubes revealed by light absorption and luminescence*”. Journal of Physical Chemistry B, vol. 109, 2005, p. 8565.
- 5 Flores, I.C.; de Freitas, J.N.; Longoa, C.; De Paoli, M.A.; Winnischofer, H.; Nogueira, A.F. “*Dye-sensitized solar cells based on TiO<sub>2</sub> nanotubes and a solid-state electrolyte*”. Journal of Photochemistry and Photobiology A: Chemistry, vol. 189, 2007, p. 153.
- 6 Morgado Jr., E. “*Estudo de titanatos nanoestruturados obtidos por tratamento hidrotérmico de óxido de titânio em meio ácido*”. Tese de doutorado, UFRN, agosto de 2007.
- 7 Li, J.; Tang, Z.; Zhang, Z. “*H-titanate nanotube: a novel lithium intercalation host with large capacity and high rate capability*”. Electrochemistry Communication, vol. 7, 2005, p. 62.

- 8 Lim, S.H.; Lou, J.; Zhong, Z.; Ji, W.; Lin, J. "Room-temperature hydrogen uptake by  $TiO_2$  nanotubes". Inorganic Chemistry, vol. 44, 2005, p. 4124.
- 9 Bavykin, D.V.; Lapkin, A.A.; Pawel, K.; Plucinski, P.K.; Friedrich, J.M.; Walsh, F.C. "Reversible storage of molecular hydrogen by sorption into multilayered  $TiO_2$  nanotubes". Journal of Physical Chemistry B, vol.109, 2005, p. 19422.
- 10 Bavykin, D.V.; Lapkin, A.A.; Plucinski, P.K.; Friedrich, J.M.; Walsh, F.C. " $TiO_2$  nanotube-supported ruthenium(III) hydrated oxide: a highly active catalyst for selective oxidation of alcohols by oxygen". Journal of catalysis, vol. 235, 2005, p. 10.
- 11 Idakiev, V.; Yuan, X-Y.; Tabakova, T.; Su, B-L. "Titanium oxide nanotubes as supports of nano-size gold catalysts for low temperature water-gas shift reaction". Applied Catalysis A, vol. 281, 2005, p. 149.
- 12 Lin, C-H.; Chien, S-H.; Chao, J-H.; Sheu, C-Y.; Cheng, Y-C.; Huang, Y-J.; Tsai, C-H. "The synthesis of sulfated titanium oxide nanotubes". Catalysis Letters, vol. 80, 2002, p. 153.
- 13 Nian, J-N.; S-A. Chen, S-A.; Tsai, C-C.; Teng, H. "Structural feature and catalytic performance of Cu species distributed over  $TiO_2$  nanotubes". Journal of Physical Chemistry B, vol. 110, 2006, p. 25817.
- 14 Tsai, C-C.; Teng H. "Regulation of the physical characteristics of titania nanotubes aggregates synthesized from hydrothermal treatment". Chemistry of Materials, vol. 16, 2004, p. 4352.
- 15 Bavykin, D. V. ; Milson, E.V. ; Marken, F.; Kim, D.H.; Marsh, D.H.; Riley, D.V.; Walsh, F.C.; El-Abiary, K.H.; Lapkin, A. A. "A novel cation-binding  $TiO_2$  nanotube substrate for electro- and bioelectro-catalysis". Electrochemistry Communication, vol. 7, 2005, p. 1050.
- 16 Hodos, M.; Horváth, E.; Haspel, H.; Kukovecz, K., Kónya, Z.; Kiricsi, I. "Photosensitization of ion-exchangeable titanate nanotubes by CdS nanoparticles". Chemical Physics Letters, vol. 399, 2004, p. 512.

- 17 Lin, C-H.; Lee, C-H.; Chao, J-H.; Kuo, C-Y.; Cheng, Y-C.; Huang, W-N.; Chang, H-W.; Huang, Y-M.; Shih, M-K. "*Photocatalytic generation of  $H_2$  gas from neat ethanol over Pt/TiO<sub>2</sub> nanotubes catalysts*". Catalysis Letter, vol. 98, 2004, p. 61.
- 18 Humar, M.; Arcon, D.; Umek, P.; Skarabot, M.; musevic, I.; Bregar, G. "*Mechanical properties of titania-derived nanoribbons*". Nanotechnology, vol.17, 2006, p. 3869.
- 19 Hoyer, P. "*Formation of a Titanium Dioxide Nanotube Array*". Langmuir, vol. 12, 1996, p. 1411.
- 20 Kasuga, T.; Hiramatsu, M.; Hoson, A.; Sekino, T.; Niihara, K. "*Formation of Titanium Oxide Nanotubes*". Langmuir, vol. 14, 1998, p. 3160.
- 21 Kasuga, T.; Hiramatsu, M.; Hoson, A.; Sekino, T.; Niihara, K. "*Titania Nanotubes Prepared by Chemical Processing*". Advanced Materials, vol. 11, 1999, p. 1307.
- 22 Suzuki, Y.; Pavasupree, S.; Yoshikawa, S.; Kawahata, R. "*Direct synthesis of an anatase-TiO<sub>2</sub> nanofiber/nanoparticle composite powder from natural rutile*". Physica Status Solid, vol. 204, 2007, p. 1757.
- 23 Bavykin, D. V.; Friedrich, J. M.; Walsh, F. C. "*Protonated Titanates and TiO<sub>2</sub> Nanostructured Materials: Synthesis, Properties, and Applications*". Advanced Materials, vol. 18, 2006, p. 2807.
- 24 Zhang, S.; Peng, L.-M.; Chen, Q.; Du, G. H.; Dawson, G.; Zhou, W. Z. "*Formation Mechanism of H<sub>2</sub>Ti<sub>3</sub>O<sub>7</sub> Nanotubes*". Physical Review Letters, vol. 91, 2003, p. 256103-1.
- 25 Chen, Q.; Du, G.H.; Zhang S.; Peng, L. M. "*The Structure of Titanates Nanotubes*". Acta Crystallographica, vol. B58, 2002, p. 587.

- 26 Wang, W.; Varghese, O.K.; Paulose, M.E; Grimesa; C. A. “*A study on the growth and structure of titania nanotubos*”. J. Mater. Res., vol. 19, 2004, p. 417.
- 27 Weng, L.-Q.; Songa, S.-H.; Hodgsonb, S.; Baker, A.; Yua, J. “*Synthesis and characterisation of nanotubular titanates and titania*”. Journal of the European Ceramic Society, vol. 26, 2006, p. 1405.
- 28 Yuan, Z-Z.; Colomer, J-F.; Su, B-L. “*Titanium oxide nanoribbons*”. Chemical Phisics Letters, vol. 363, 2002, p. 362.
- 29 Bavykin, D. V.; Parmon, V. N.; Lapkina A. A.; Walsh, F. C. “*The effect of hydrothermal conditions on the mesoporous structure of TiO<sub>2</sub> nanotubes*”. Journal of Materials Chemistry, vol. 14, 2004, p. 3370.
- 30 Poudel, B.; Zhang, W.; Dames, C.; Huang, J Y.; Kunwar, S.; Wang, DZ.; Banerjee, D.; Chen, G.; Ren, Z F. “*Formation of crystallized titania nanotubes and their transformation into nanowires*”. Nanotechnology, vol. 16, 2005, p. 1935.
- 31 Horvth, E.; Kukovecz, A.; Knya, Z.; Kiricsi, I. “*Hydrothermal Conversion of Self-Assembled Titanate Nanotubes into Nanowires in a Revolving Autoclave*”. Chem. Mater., vol. 19 (4), 2007, p. 927.
- 32 Bavykin, D.V.; Cressey, B.A.; Light, M.E.; Walsh, F.C. “*An aqueous, alkaline route to titanate nanotubes under atmospheric pressure conditions*”. Nanotechnology, vol. 19, 2008, p. 275604.
- 33 Bavykin, D.V.; Cressey, B.A.; Walsh, F.C. “*Low-Temperature Synthesis of Titanate Nanotubes in Aqueous KOH*”. Aust. J. Chem., vol. 60, 2007, p. 95.
- 34 Lvov, Y.; Price, R.; Gaber, B.; Ichinose, I. “*Thin film nanofabrication via layer-by-layer adsorption of tubule halloysite, spherical silica, proteins and polycations*”. Physicochemical and Engineering Aspects, vol. 198–200, 2002, p. 375.

- 35 Iijima, S. "*Helical microtubules of graphitic carbon*". Nature, vol. 354, 1991, p. 56.
- 36 Dresselhaus, M.S.; Dresselhaus, G.; Eklund, P.C. "*Science of fullerenes and carbon nanotubos*". Academic Press Inc. An Imprint of Elsevier, San Diego CA, 1995.
- 37 Tenne, R.; Margulis, L.; Genut, M.; Hodes, G. Nature, vol. 360, 1992, p. 444.
- 38 Hacoheh, Y. R.; Grunbaum, E.; Tenne, R.; Sloan, J.; Hutchison, J. "*Cage structures and nanotubes of NiCl<sub>2</sub>*". Nature, vol. 395, 1998, p. 336.
- 39 Rao, C.N.R.; Nath, M. "*Inorganic nanotubos*". Dalton Trans., vol. 1, 2003, p. 1.
- 40 Remeskar, M. Adv. Mater., vol. 16 (17), 2004, p. 1497.
- 41 Ma, R.; Bando, Y.; Sasaki, T. "*Directly Rolling Nanosheets into Nanotubes*". J. Phys. Chem. B, vol. 108, 2004, p. 2115.
- 42 Wei, M.; Konishi, Y.; Zhou, H.; Sugihara, H.; Arakawa, H. "*Formation of nanotubes TiO<sub>2</sub> from layered titanate particles by a soft chemical process*". Solid State Comm, vol. 133, 2005, p. 493.
- 43 Morgado Jr., E.; de Abreu, M. A.S.; Pravia, O. R.C.; Marinkovic, B.A.; Jardim, P. M.; Rizzo, F. C.; Araújo, A. S. "*A study on the structure and thermal stability of titanate nanotubos as a function of sodium content*". Solid State Sciences, vol. 8, 2006, p. 888.
- 44 Saupe, G.; Waraksa, C.; Kim, H-N.; Han, Y.; Kaschak, D.; Skinner, D.; Mallouk, T. "*Nanoscale Tubules Formed by Exfoliation of Potassium Hexaniobate*". Chem. Mater., vol. 12, 2000, p. 1556.
- 45 Ohno, T.; Sarukawa, K.; Tokied, K.; Matsumura, M. "*Morphology of TiO<sub>2</sub> Photocatalyst (Degussa, P-25) Consisting of Anatase and Rutile Crystalline Phases*". Journals of Catalysis, vol. 203, 2001, p. 82.

- 46 Komarneni, S. "Nanophase materials by hydrothermal, microwave-hydrothermal and microwave-solvothermal methods". *Current Science*, vol. 85, 2003, p. 1730.
- 47 Xu, C.; Zhan, Y.; Kunquan Hong, Wang, G. "Growth and mechanism of titania nanowires". *Solid State Communications*, vol. 126, 2003, p. 545.
- 48 Peng, H.; Li, G.; Zhang, Z. "Synthesis of bundle-like structure of titania nanotubos". *Materials Letters*, vol. 59, 2005, p. 1142.
- 49 Liu, X.-Y.; Coville, N. J. "A Raman Study of Titanate Nanotubes". *S. Afr. J. Chem.*, vol. 58, 2005, p. 110.
- 50 Chen, Y-F.; Lee, C-Y.; Yeng, M-Y.; Chiu, H-T. "Preparing titanium oxide with various morphologies". *Materials Chemistry and Physics*, vol. 81, 2003, p. 39.
- 51 Yuan, Z-Y.; Su, B-L. "Titanium oxide nanotubos, nanofibers and nanowires". *Colloids and Surfaces*, vol. 241, 2004, p. 173.
- 52 Morgan, D. L.; Zhu, H.-Y.; Frost, R. L.; Waclawik, E. R. "Determination of a Morphological Phase Diagram of Titania/Titanate Nanostructures from Alkaline Hydrothermal Treatment of Degussa P25". *Chemistry Materials*, vol. 20, 2008, p. 3800.
- 53 Elsanousi, A.; Elssfah, E. M.; Zhang, J.; Lin, J.; Song, H. S.; Tang, C. "Hydrothermal Treatment Duration Effect on the Transformation of Titanate Nanotubes into Nanoribbons". *J. Phys. Chem. C*, vol. 111, 2007, p. 14353.
- 54 Armstrong, G.; Canales, J.; Bruce, P. G. "Nanotubes with the  $TiO_2$ -B structure". *Chem. Commun*, 2005, p. 2454.
- 55 Mao, Y.; Kanungo, M.; Hemraj-Benny, T.; Wong, S.S. *J. Phys. Chem. B*, vol. 110, 2006, p. 702.

- 56 Meng, X.; Wang, D.; Liu, J.; Zhang, S. "Preparation and characterization of sodium titanate nanowires from brookite nanocrystallites". *Mater. Res. Bull.*, vol. 39, 2004, p. 2163.
- 57 Wei, M.; Qi, Z.; Ichihara, M.; Honma, I.; Zhou, H. "Ultralong single-crystal TiO<sub>2</sub>-B nanowires: Synthesis and electrochemical measurements". *Chem. Phys. Lett.*, vol. 424, 2006, p. 316.
- 58 Wang, B.L.; Chen, Q.; Wang, R.H., Peng, L.H. "Synthesis and characterization of K<sub>2</sub>Ti<sub>6</sub>O<sub>13</sub> nanowires". *Chem. Phys. Lett.*, vol. 376, 2003, p. 726.
- 59 Yang, H.G.; Zeng, H.C. *J. Am. Chem. Soc.*, vol. 127, 2005, p. 270.
- 60 Zhu, H.; Gao, X.; Lan, Y.; Song, S.; Xi, Y. J. Zhao. *J. Am. Chem. Soc.*, vol. 126, 2004, p. 8380.
- 61 Menzel, R.; Peiro, A. M.; Durrant, J. R.; Shaffer, M. S. P. "Impact of Hydrothermal Processing Conditions on High Aspect Ratio Titanate Nanostructures". *Chem. Mater.*, vol. 18, 2006, p. 6059.
- 62 Mancic, L. T.; Marinkovic, B. A.; Jardim, P. M.; Milosevic, O.B.; Rizzo, F. "Precursor Particle Size as the Key Parameter for Isothermal Tuning of Morphology from Nanofibers to Nanotubes in the Na<sub>2-x</sub>H<sub>x</sub>Ti<sub>n</sub>O<sub>2n+1</sub> System through Hydrothermal Alkali Treatment of Rutile Mineral Sand". *Crystal Growth & Design*, vol. 9, 2009, p. 2152.
- 63 Mancic, L. T.; Marinkovic, B. A.; Jardim, P. M.; Milosevic, O.B.; Rizzo, F. "Precursor Particle Size as the Key Parameter for Isothermal Tuning of Morphology from Nanofibers to Nanotubes in the Na<sub>2-x</sub>H<sub>x</sub>Ti<sub>n</sub>O<sub>2n+1</sub> System through Hydrothermal Alkali Treatment of Rutile Mineral Sand". *Crystal Growth & Design*, vol. 9, 2009, p. 2152.
- 64 Zhang, D.L. "Processing of advanced materials using high-energy mechanical milling". *Progress in Materials Science*, vol. 49, 2004, p. 537.

- 65 Suryanarayana, C. "*Mechanical alloying and milling*". Progress in Materials Science, vol. 46, 2001, p. 1.
- 66 Carp, O.; Huisman, C.L.; Reller, A. "*Photoinduced reactivity of titanium dioxide*". Progress in Solid State Chemistry, vol. 32, 2004, p. 33.
- 67 Zhang, H.; Banfield, J. F. "*Understanding polymorphic phase transformation behavior during growth of nanocrystalline aggregates*". Journal of Physical Chemistry B, vol. 104, 2000, p. 3481.
- 68 Raveau, B. "*Structural relationships in lamellar oxides built up edge-sharing octhedra*". Reviews in Inorganic Chemistry, vol. 09, 1987, p. 38.
- 69 Sasaki, T.; Watanabe, M.; Komatsu, Y.; Fujiky, Y. "*Layered Hydrous Titanium Dioxide: Potassium Ion Exchange and Structural Characterization*". Inorganic Chemistry, vol. 24, 1985, p. 2265.
- 70 Sasaki, T.; Komatsu, Y.; Fujiky, Y. "*Protonated pentatitanate: preparation, characterization and cation intercalation*". Chemistry of Materials, vol. 4, 1992, p. 894.
- 71 Izawa, H.; Kikkawa, S.; Kotzumi, M. "*Ion exchange and dehydration of layered titanates:  $Na_2Ti_3O_7$  and  $K_2Ti_4O_9$* ". Journal of Physical Chemistry B, vol. 86, 1982, p. 5023.
- 72 Andersson, S.; Wadsley, A. D. "*The structures of  $Na_2Ti_6O_{13}$  and of  $Rb_2Ti_6O_{13}$  and the alkali metal titanates*". Acta Crystallographia, vol. 15, 1962, p. 194.
- 73 Sasaki, T.; Fujiky, Y. "*Synthesis and characterization of fibrous octatitanate  $M_2Ti_8O_{17}$  ( $M=K, Rb$ )*". Journal of Solid State Chemistry, vol. 83, 1989, p. 45.
- 74 Bruce, P. G. "*Energy Materials*". Solid state Sciences, vol. 7, 2005, p. 1456.



- 75 Lan, Y.; Gao, X.; Zju, H.; Zheng, Z.; Yan, T.; Wu, F.; Ringer, S. P.; Song, D. "Titanate Nanotubes and Nanorods Prepared from Rutile Powder". *Adv. Funct. Mater.*, vol. 15, 2005, p. 1310.
- 76 Nakahira, A.; Tamai, W.; Isshiki, T.; Nishio, K. "Synthesis of nanotube from a layered  $H_2Ti_4O_9 \cdot H_2O$  in a hydrothermal treatment using various titania sources". *Journal of Materials Science*, vol. 39, 2004, p. 4239.
- 77 Kukovecz, Á.; Hodos, M.; Horváth, E.; Radnóczy, G.; Kónya, Z.; Kiricsi, I. "Oriented Crystal Growth Model Explains the Formation of Titania Nanotubes". *Physical Chemistry B*, vol. 109, 2005, p. 17781.
- 78 Kawahata, R.; Suzuki, Y. "Mineral sand as a low cost source of nanomaterials". *Key Engineering Materials*, vol. 139, 2006, p. 317.
- 79 Suzuki, Y.; Pavasupree, S.; Yoshikawa, S.; Kawahata, R. "Direct Hydrothermal Processing of Long Titanate Nanofibers from natural Rutile". *Key Engineering Materials*, vol. 317/318, 2006, p. 243.
- 80 Bavykin, D. V.; Friedrich, J. M.; Lapkin, A. A.; Walsh, F. C. "Stability of Aqueous Suspensions of Titanate Nanotubes". *Chem. Mater.*, vol. 18, 2006, p. 1124.
- 81 Hidalgo, M.C.; Colón, G.; Navío, J.A. "Modification of the physicochemical properties of commercial  $TiO_2$  samples by soft mechanical activation". *Journal of Photochemistry and Photobiology A: Chemistry*, vol. 148, 2002, p. 341.
- 82 Sun, X.; Li, Y. "Synthesis and characterization of ion-exchanged titanate nanotubes". *Chem. Eur. J*, vol. 9, 2003, p. 2229.
- 83 Zhu, H. Y.; Lan, Y.; Gao, X. P.; Ringer, S. P.; Zheng, Z. F.; Song, D. Y., Zhao, J. C. "Phase Transition between Nanostructures of Titanate and Titanium Dioxides via Simple Wet-Chemical Reactions". *J. Am. Chem. Soc.*, vol. 127, 2005, p. 6730.

- 84 Zhu, H.; Gao, X.; Lan, Y.; Song, D.; Xi, Y.; Zhao, J. "*Hydrogen Titanate Nanofibers Covered with Anatase Nanocrystals: A Delicate Structure Achieved by the Wet Chemistry Reaction of the Titanate Nanofibers*". *Am. Chem. Soc.*, vol. 126, 2004, p. 8380.
- 85 Nian, J.-N.; Teng, H. "*Hydrothermal Synthesis of Single-Crystalline Anatase TiO<sub>2</sub> Nanorods with Nanotubes as the Precursor*". *J. Phys. Chem. B*, vol. 110, 2006, p. 4193.