

Name: Tata Narasinga Rao

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Date of birth: Born in 1963

AWARDS:

1. **MRSI –Medal (awarded in February 2009)**
2. **FAPCCI Excellence Award (2011) for contribution as an “outstanding scientist or engineer for the benefit of industry, trade or Agriculture” from Government of Andhra Pradesh**

Scholarships

- **Junior Research Fellowship/ Ministry of Non-conventional Energy Sources, India (1988).**
- **Senior Research Fellowship/ Ministry of Non-conventional Energysources, India (1989).**
- **Research Associate/ Department of Science and Technology, India (1994).**
- **Post-doctoral Fellow/ Japan Society for the Promotion of Science, Japan (1996).**
- **MONBUSHO scholarship/ Ministry of Education-Science-Sports and Culture, Japan (1996).**
- **Post-doctoral Researcher/ New Energy and Industrial Technology Development Organization (NEDO) (2000).**

Achievements:

Number of publications: 101

Number of patents (issued/filed): 16

Highest cited paper: Cited 3387 times (No. 94 in the publications list)

H-Index: 31

Education & research experience:

[1] Scientist 'F' (October 2008-present)

Team Leader. Centre for Nanomaterials, ARCI

Address: International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Balapur P.O., Hyderabad-500005, India

Research topics:

- Photocatalysis applications for air and water purification
- Li ion Batteries for EV applications
- Nanocrystalline ZnO varistors
- Nanosilver for Health applications
- Nanocrystalline Materials (novel synthesis methods and scaling-up)

[2] Guest faculty to IIT-Hyderabad

[3] Guest faculty to University of Hyderabad

[3] Lecturer (October 2001-March 2003)

Address: Department of Applied Chemistry, Faculty of Engineering, The University of Tokyo, Tokyo 113, Japan.

Teaching: Physical Chemistry (3rd year B. Engg.)

Supervising: Ph. D (1), M. Engg (1), B. Engg (1)

Research topics

- Electroanalytical chemistry using conductive boron-doped diamond thin film electrodes
- Diamond microelectrodes and microelectrode arrays for sensor applications.
- Photoelectrochemistry and dyesensitized photovoltaics.
- Electrochemical reduction of CO₂.

[4] Postdoctoral Researcher (NEDO fellow) (January 2000-October 2001)

Address: Fujishima Laboratory, Department of Applied Chemistry, Faculty of Engineering, The University of Tokyo, Tokyo 113, Japan.

Research topics

- Electroanalytical chemistry using conductive boron-doped diamond thin film electrodes
- Diamond microelectrodes and microelectrode arrays for sensor applications.
- Photoelectrochemistry and dyesensitized photovoltaics.
- Electrochemical reduction of CO₂.

[5] Postdoctoral Researcher (JSPS project) (June 1998-December 1999)

Address: Fujishima Laboratory, Department of Applied Chemistry, Faculty of Engineering, The University of Tokyo, Tokyo 113, Japan.

Research topics

- Electroanalytical chemistry using conductive boron-doped diamond thin film electrodes
- Photoelectrochemistry and dyesensitized photovoltaics
- Diamond microelectrodes and microelectrode arrays for sensor applications.
- TiO₂ photocatalysis
- Electrochemical reduction of CO₂

[6] MONBUSHO Research fellow (October 1996 to March 1998)

Address: Fujishima Laboratory, Department of Applied Chemistry, Faculty of Engineering, The University of Tokyo, Tokyo 113, Japan.

Research topics

- Photoelectrorheology of TiO₂-based electrorheological fluids
- Electrochemistry and Photoelectrochemistry of diamond electrodes.

[7] JSPS Postdoctoral Fellow (Jan. 1996 to April 1996)

Address: Fujishima Laboratory, Department of Applied Chemistry, Faculty of Engineering, The University of Tokyo, Tokyo 113, Japan.

Research topic:

- Photoelectrorheology of TiO₂-based electrorheological fluids.

[8] Postdoctoral Researcher (June 1994 to Jan 1996)

Address: Material Science Research Center, Indian Institute of Technology, Madras 600036, India

Research topics:

- Superconductivity
- Solid-state ionic conductors

[9] Ph.D. (1989-94)

Address: Department of Chemistry, Banaras Hindu University, Varanasi, UP, India

Thesis Title: Non-aqueous Photoelectrochemical Solar Cells Based on Sprayed and Particulate n-ZnO Thin Film Electrodes.

[10] Junior Research Fellow (1987-89)

Address: Material Science Research Center, Indian Institute of Technology, Madras 600036, India

Research topic: Photoelectrochemistry

[11] Master of Science (M. Sc.) (1985-87)

Division: First Class

Address: Department of Chemistry, Banaras Hindu University, Varanasi, UP, India

Major: Physical Chemistry

[12] Bachelor of Education (B. Ed.) (1984-85)

Division: First Class

Address: Regional College of Education, Mysore, India

Major subjects: Physics and Chemistry

[13] Bachelor of Science (B. Sc.) (1980-83)

Division: First Class

Address: Andhra University, Waltair, India

Subjects: Chemistry, Physics and Mathematics

[14] Other courses:

“HPLC: Fundamentals, Applications, and Troubleshooting” 2000 Pittsburgh Conference & Exposition on Analytical Chemistry and Applied Spectroscopy Continuing Education Program, Conducted on March 14, 2000 at New Orleans.

List of Publications

Papers published:

1. Lal bahadur and **Tata N. Rao**, "Photoelectrochemical Studies of Cobalt doped ZnO Sprayed Thin Film Semiconductor Electrodes in Acetonitrile Medium" *Sol. Energy Mater. Sol. Cells.*, 27 (1992) 347. Cited: 10
2. Lal bahadur, J.P.Panday, and **Tata N. Rao**, "Photoelectrochemistry of ZnO Thin Film Electrode Sensitized by an Oxouranium (VI) Complex in an Acetonitrile Photocell" *Proc. Indian Acad. Sci. (Chem. Sci.)*, 105 Nos.4/5 (1993)235. Cited: 2
3. Lal bahadur, **Tata N. Rao** and J.P.Panday, "extension of the spectral response of Sprayed ZnO Thin Film Electrodes Induced by Nickel and Cobalt Doping" *Semicond. Sci. Technol.*, 9, (1994) 275. Cited: 7
4. K. V. G. Kutty, C. K. Mathews, **Tata N. Rao** and U. V. Varadaraju, "Oxide ion conductivity in some substituted rare earth pyrozoirconates" *Solid State Ionics*. 80 (1995) 99. Cited: 7
5. Lal bahadur and **Tata N. Rao**, "Photoelectrochemical investigations on particulate ZnO thin film electrodes in non-aqueous solvents" *J. Photochem. Photobiol. A:Chem* 91 (1995) 233. Cited: 9
6. **Tata N. Rao** and Lal bahadur, "Photoelectrochemical studies of dye sensitized particulate ZnO thin film electrodes" *J. Electrochem.soc.*, 144, No. 1 (1997) 179. Cited: 36
7. Y. Komoda, **Tata N. Rao** and A. Fujishima, "Photoelectrorheology of TiO₂ Nanoparticle Suspensions" *Langmuir* 13 (1997) 1371. Cited: 17
8. **Tata N. Rao**, Y. Komoda and A. Fujishima "Photoeffects on Electrorheological Properties of TiO₂ Particle Suspensions" *Chemistry Letters* (1997) 307.
9. N. Sakai, Y. Komoda, **Tata N. Rao** and A. Fujishima "Effect of adsorbed water on the photoelectrorheology of TiO₂ particle suspensions" *J. Electroanal. Chem.*, 445 (1998) 1. Cited: 4
10. Y. Komoda, N. Sakai, **Tata N. Rao**, D. A. Tryk and A. Fujishima "Photoelectrorheological phenomena involving TiO₂ particle suspensions" *Langmuir* , 14 (1998) 1081. Cited: 17
11. Y. Komoda, **Tata N. Rao**, D. A. Tryk, A. Fujishima, "Influence of the rotation rate of a rotary viscometer on the photoelectrorheological properties of TiO₂ particle suspensions" *J. Electroanal. Chem.*, 459 (1998) 155. Cited: 2
12. **Tata N. Rao**, D. A. Tryk, K. Hashimoto, A. Fujishima, "Band-edge movements of semiconducting diamond in aqueous electrolyte induced by anodic surface treatment" *J.*

Electrochem. Soc., 146 (1999) 680. Cited: 39

13. **Tata N. Rao**, I. Yagi, T. Miwa, D. A. Tryk and A. Fujishima, "Electrochemical oxidation of NADH at highly boron-doped diamond electrodes" Anal. Chem., 71 (1999) 2506. Cited: 151
14. B. V. Sarada, **Tata N. Rao**, D. A. Tryk, A. Fujishima, "Electrochemical characterization of highly boron-doped diamond microelectrodes in aqueous electrolytes" J. Electrochem. Soc., 146 (1999)1469. Cited: 27
15. Y. Maeda, K. Sato, R. Ramaraj, **Tata N. Rao**, D. A. Tryk and A. Fujishima, "The electrochemical response of highly boron-doped conductive diamond electrodes to Ce³⁺ ions in aqueous solution" Electrochimica Acta 44 (1999) 3441. Cited 28
16. A. Fujishima, **Tata N. Rao**, E. Popa, B. V. Sarada, I. Yagi, D. A. Tryk, "Electroanalysis of dopamine and NADH at conductive diamond electrodes" J. Electroanal. Chem., 473 (1999) 179. Cited: Cited 78
17. B. V. Sarada, **Tata N. Rao**, D. A. Tryk and A. Fujishima, "Electrochemical detection of serotonin at diamond electrode." Chem. Lett., (1999) 1213. Cited: 13
18. K. Honda, **Tata N. Rao**, D. A. Tryk and A. Fujishima, M. Watanabe, K. Yasui and H. Masuda, "Electrochemical characterization of nanoporous honeycomb diamond electrode as an electrical double-layer capacitor" J. Electrochem. Soc., 147 (2000) 659. Cited: 46
19. B. V. Sarada, **Tata N. Rao**, D. A. Tryk and A. Fujishima, "Electrochemical oxidation of histamine and serotonin at highly boron-doped diamond electrodes" Anal. Chem., 72 (2000) 1632. Cited: 78
20. H. Masuda, M. Watanabe, K. Yasui, D. A. Tryk, **Tata N. Rao** and A. Fujishima, "Fabrication of Nanostructured Diamond Honeycomb Film" Advanced Materials, 12 (2000) 444. Cited: 30
21. **Tata N. Rao**, B. V. Sarada, D. A. Tryk and A. Fujishima, "Electroanalytical study of sulfa drugs at diamond electrodes and their determination by HPLC with amperometric detection" J. Electroanal. Chem., 491 (2000) 175. Cited: 48
22. M. Yoshimura, K. Honda, R. Uchikado, T. Kondo, **Tata N. Rao**, D. A. Tryk, A. Fujishima, Y. Sakamoto, K. Yasui and H. Masuda, "Electrochemical Characterization of Nanoporous Honeycomb Diamond Electrodes in Nonaqueous Electrolytes" Diamond and Related Materials, 10 (2001) 620. Cited: 14
23. H. Masuda, K. Yasui, M. Waanabe, K. Nishio, **Tata N. Rao** and A. Fujishima, "Fabrication of ordered diamond/metal nanocomposite structures" Chem. Lett. (2000) 1112. Cited: 7
24. R. Uchikado, **Tata N. Rao**, D. A. Tryk and A. Fujishima, "Metal-modified electrode as an electrochemical detector for glucose" Chem. Lett., (2001) 144 . Cited: 27
25. H. Masuda, T. Yanagishita, K. Yasui, K. Nishio, I. Yagi, **Tata N. Rao** and A. Fujishima, "Synthesis of well-aligned diamond nanocylinders" Adv. Mat., 13 (2001) 247. Cited: 57

26. D. A. Tryk, K. Tsunozaki, **Tata N. Rao** and A. Fujishima, "Relationships between surface character and electrochemical processes on diamond electrodes: dual roles of surface termination and near-surface hydrogen" *Diamond and Related Materials*, 10 (2001) 1804. [Cited: 37](#)
27. N. Spataru, **Tata N. Rao**, D. A. Tryk and A. Fujishima, "Determination of nitrite and nitrogen oxides by anodic voltammetry at conductive diamond electrodes." *J. Electrochem. Soc.*, 148 (2001) E112. [Cited: 16](#)
28. K. Honda, **Tata N. Rao**, D. A. Tryk and A. Fujishima, M. Watanabe, K. Yasui and H. Masuda, "Impedance characteristics of the nanoporous honeycomb diamond electrodes for electrical double layer capacitor applications." *J. Electrochem. Soc.*, 148 (2001) A668. [Cited: 24](#)
29. K. Honda, M. Yoshimura, **Tata N. Rao**, D. A. Tryk and A. Fujishima, K. Yasui, Y. Sakamoto, K. Nishio and H. Masuda, "Electrochemical properties of Pt-modified nanohoneycomb diamond electrodes" *J. Electroanal. Chem.*, 514 (2001) 35. [Cited: 40](#)
30. H. Masuda, M. Watanabe, K. Yasui, K. Nishio, M. Nakao, T. Tamamura, **Tata N. Rao** and A. Fujishima, "Fabrication of through-hole membranes by oxygen plasma etching using anodic porous alumina mask" *Electrochem. Solid-State Lett.*, 4 (2001) G101. [Cited: 5](#)
31. M. Yoshimura, K. Honda, R. Uchikado, T. Kondo, **Tata N. Rao**, D. A. Tryk, A. Fujishima, Y. Sakamoto, K. Yasui and H. Masuda, "Factors controlling the electrochemical potential window for diamond electrodes in non-aqueous electrolytes" *Diamond and Related Materials*, 11 (2002) 67. [Cited: 8](#)
32. C. Terashima, **Tata N. Rao**, B. V. Sarada, D. A. Tryk and A. Fujishima, "Electrochemical oxidation of chlorophenols at boron-doped diamond electrode and their determination by high-performance liquid chromatography with amperometric detection" *Anal. Chem.*, 74 (2002) 895. [Cited: 56](#)
33. T. A. Ivandini, B. V. Sarada, C. Terashima, **Tata N. Rao**, D. A. Tryk and A. Fujishima, "Electrochemical detection of tricyclic antidepressant drugs by HPLC using highly boron-doped diamond electrode" *J. Electroanal. Chem.*, 521 (2002) 117. [Cited: 38](#)
34. **Tata N. Rao**, B. H. Loo, B. V. Sarada, C. Terashima and A. Fujishima, "Electrochemical detection of carbamate pesticides at conductive diamond electrodes" *Anal. Chem.*, 74 (2002) 1578. [Cited: 38](#)
35. T. Kondo, Y. Einaga, B. V. Sarada, **Tata N. Rao**, D. A. Tryk, and A. Fujishima, "Homoepitaxial single-crystal boron-doped diamond electrodes for electroanalysis" *J. Electrochem. Soc.*, 149 (2002) E179. [Cited: 21](#)
36. K. Ohnishi, Y. Einaga, H. Notsu, C. Terashima, **Tata N. Rao**, S-G. Park and A. Fujishima, "Electrochemical glucose detection using nickel-implanted boron-doped diamond electrodes" *Electrochem. Solid-State Lett.*, 5 (2002) D1-D3. [Cited: 17](#)

37. K. Tsunozaki, Y. Einaga, **Tata N. Rao** and A. Fujishima, "Fabrication and electrochemical characterization of boron-doped diamond microdisc array electrodes", *Chem. Lett.*, (2002) 502. Cited: 14
38. M. Yoshimura, K. Honda, T. Kondo, **Tata N. Rao**, D. A. Tryk, A. Fujishima, "Electrochemical Examination of the Ascorbic Acid Radical Anion in Non-Aqueous Electrolyte" *Electrochim. Acta*, 47 (2002) 4387. Cited: 3
39. K. Honda, M. Yoshimura, R. Uchikado, T. Kondo, **Tata N. Rao**, D. A. Tryk, A. Fujishima, M. Watanabe, K. Yasui, H. Masuda, "Electrochemical Characteristics for redox systems at nano-honeycomb diamond" *Electrochim. Acta*, 47 (2002) 4373. Cited: 8
40. O. Chailapakul, W. Siangproh, B. V. Sarada, C. Terashima, **Tata N. Rao**, D. A. Tryk and A. Fujishima, "The electrochemical oxidation of homocysteine at boron-doped diamond electrodes with application to HPLC amperometric detection" *Analyst*, 127 (2002) 1164. Cited: 14
41. C. Terashima, **Tata N. Rao**, B. V. Sarada and A. Fujishima, "Amperometric Detection of Oxidized and Reduced Glutathione at Anodically Pretreated Diamond Electrodes" *Chem. Lett.* 32 (2003) 136. Cited: 2
42. H. Olivia, B. V. Sarada, D. Shin, **Tata N. Rao**, and A. Fujishima, "Selective amperometric detection of dopamine using OPPy-modified diamond microsensor system" *Analyst*, 127 (1572) 2002. Cited: 14
43. C. Terashima, **Tata N. Rao**, B. V. Sarada N. Spataru and A. Fujishima, "Electrodeposition of Hydrated Iridium Oxide on Conductive Diamond Electrodes for Catalytic Sensor Applications" *J. Electroanal. Chem.*, 544 (2003) 65. Cited: 18
44. K. Honda, M. Yoshimura, **Tata N. Rao**, and A. Fujishima, "Electrogenerated chemiluminescence of the ruthenium tris(2,2')bipyridyl/amines system on boron-doped diamond electrode" *J. Phys. Chem.*, 107 (2003) 1653. Cited: 27
45. C. Terashima, **Tata N. Rao**, B. V. Sarada and A. Fujishima, "Direct electrochemical oxidation of disulfides at boron-doped diamond electrodes" *Anal. Chem.*, 75 (2003) 1564. Cited: 29
46. T. A. Ivandini, B. V. Sarada, C. Terashima, **Tata N. Rao**, D. A. Tryk, H. Ishiguro, Y. Kubota and A. Fujishima, "Gradient HPLC of Leucine-Enkephalin peptide and its metabolites by electrochemical detection using highly boron-doped diamond electrode, *J. Chromatography B*, 791 (2003) 63. Cited: 14
47. N. Spataru, K. Tokuhira, C. Terashima, **Tata N. Rao** and A. Fujishima, "Electrochemical reduction of carbon dioxide at ruthenium dioxide deposited on boron-doped diamond" *J. Appl. Electrochem.* 33 (2003) 1205. Cited: 4
48. T. A. Ivandini, B. V. Sarada, **Tata N. Rao**, A. Fujishima, "Electrochemical oxidation of underivatized nucleic acids at highly boron-doped diamond" *Analyst*, 128 (2003) 924. Cited: 25

49. J. F. Zhi, H. B. Wang, T. Nakashima, **Tata N. Rao** and A. Fujishima, "Electrochemical incineration of organic pollutants on boron-doped diamond electrode. Evidence for direct electrochemical oxidation pathway", *J. Phys. Chem.*, 107 (2003) 13389. [Cited: 30](#)
50. X. T. Zhang, I. Sutanto, T. Taguchi, Q. B. Meng, **Tata N. Rao**, A. Fujishima, H. Watanabe, T. Nakamori and M. Uragami, "Al₂O₃-coated nanoporous TiO₂ electrode for solid-state dye-sensitized solar cell" *Sol. Energ. Mat. Sol. Cells*, 80 (2003) 315. [Cited: 27](#)
51. T. Taguchi, X. T. Zhang, I. Sutanto, K. Tokuhiko, **Tata N. Rao**, H. Watanabe, T. Nakamori and M. Uragami and A. Fujishima, "Improving the performance of solid-state dye-sensitized solar cell using MgO-coated TiO₂ nanoporous film" *Chem. Commun.* 19 (2003) 2480. [Cited: 51](#)
52. L. Ouattara, I. Duo, T. Diaco, A. Ivandini, K. Honda, **Tata N. Rao**, A. Fujishima and Ch. Cominellis, "Electrochemical oxidation of ethylenediaminetetraacetic acid (EDTA) on BDD electrodes: Applications to waste water treatment" *New Diamond and Frontier Carbon Technology*, 13 (2003) 97. [Cited: 7](#)
53. M. Komatsu, **Tata N. Rao**, A. Fujishima, "Detection of hydroxyl radicals formed on an anodically polarized diamond electrode surface in aqueous media" *Chem. Lett.*, 32 (2003) 396. [Cited: 3](#)
54. Q. B. Meng, K. Takahashi, X. T. Zhang, I. Sutanto, **Tata N. Rao**, A. Fujishima, H. Watanabe, T. Nakamori and M. Uragami, "Fabrication of an efficient solid-state dye sensitized solar cell", *Langmuir*, 19 (2003) 3572. [Cited: 77](#)
55. T.A. Ivandini, **T. N. Rao**, A. Fujishima and Y. Einaga, "Electrochemical oxidation of oxalic acid at highly boron-doped diamond electrodes", *ANALYTICAL CHEMISTRY* 78 (2006) 3467-3471. [Cited: 16](#)
56. R.H. Tian, **T.N. Rao**, Y. Einaga and J.F. Zhi, "Construction of two-dimensional arrays gold nanoparticles monolayer onto boron-doped diamond electrode surfaces" *CHEMISTRY OF MATERIALS* 18 (2006) 939-945. [Cited: 14](#)
57. T.A. Ivandini, K. Honda, T. N. Rao, A. Fujishima, Y. Einaga, "Simultaneous detection of Purinr and Pyrimidine at highly boron-doped diamond electrodes by using liquid chromatography" *Talanta* 71 (2007) 648-655. [Cited: 6](#)
58. Dibyendu Chakravarty, S.Bysakh, K.Muraleedharan. **T.N.Rao** and R.Sundaresan, "Spark plasma sintering of MgO doped alumina with high hardness and fracture toughness" *Journal of the American Ceramic Society*, 91[1], 213-218, 2008.
59. Kaliyan Hembram, R. Vijay, Y. S. Rao and **T. N. Rao** "Doped Nanocrystalline ZnO Powders for Non-linear Resistor Applications by Spray Pyrolysis Method" *Journal of Nanoscience and Nanotechnology* 9 (2009) 4376.

60. D. Chakravarty, H. Ramesh and **Tata . N. Rao**, "High strength porous alumina by spark plasma sintering" *Journal of the European Ceramic Society* 29 (2009) 1361.
61. R. Subasri, M. Asha, K. Hembram, G.V.N. Rao and **T. N. Rao**, " Microwave sintering of doped nanocrystalline ZnO and characterization for varistor applications, *Materials Chemistry and Physics* 124 (2010) 63..
62. G. Sundararajan and **Tata N. Rao**, "Commercial prospects for nanomaterials in India, *Journal of Indian Institute of Science*" *J. Indian Institute of Science*, 89 (2009) 35.
63. R. Janardhanan, K. Murugan, H. Neha, Tata N. Rao, "Synthesis and surface chemistry of nanosilver particles" *Polyhedron* 12 (2009) 2522.
64. K. Madhav Reddy, T.N. Rao, K. Radha and J. Joardar, "Nanostructured Tungsten Carbides by Thermochemical Processing", *Journal of Alloys and Compounds*, 494 (2010) 404.
65. K. Madhav Reddy, T.N. Rao, J. Revathi and J. Joardar, "Structural stability of α/β - Mo_2C during thermochemical processing", *Journal of Alloys and Compounds*, 494 (2010) 396.
66. B.V. Sarada, C.L.P. Pavithra, M. Ramakrishna, Tata N. Rao and G. Sundararajan, Highly (111) Textured copper foils with high hardness and high electrical conductivity by pulse reverse electrodeposition, *Electrochemical and Solid State Letters*, 13 (2010) D40.
67. K. Murugan, Tata N. Rao, A.S. Gandhi and B.S. Murthy, "Effect of aggregation of methylene blue dye on TiO_2 surface in self cleaning studies", *Catalysis Communications*, 11 (2010) 518.
68. G. Sundararajan and **Tata N. Rao**, *Nanomaterials: Application development at ARCI, Nano Digest*, 2 (2010) 44.
69. K. Murugan, Tata N. Rao, K. Radha and Hina Gokhale, "Microwave plasma process optimization to produce nano titania through design of experiments" *Materials and Manufacturing Processes* 26 (2011) 803 .
70. N.Y. Hebalkar, S. Acharya and T.N. Rao, Preparation of bi-functional silica particles for antibacterial and self-cleaning surfaces, *J. Colloid & Interface*, 364 (2011) 24.
71. K. Murugan, T.N. Rao, GVN Rao, AS Gandhi, BS Murty, Effect of dehydration rate on non-hydrolytic TiO_2 thin film processing: Structure, optical and photocatalytic performance studies, *Materials Chem. & Physics*, 129 (2011) 810.

72. D. Chakravarty, BV Sarada, SB Chandrasekhar, K. Saravanan and T.N. Rao, A novel method of fabricating porous silicon, *Mater. Sci. Engg. A*, 528 (2011) 7831.
73. V. Balek, T. N. Rao, D.A. Tryk, A. Fujishima, Diffusion structural diagnostics of polycrystalline boron-doped diamond films, *Thermochimica Acta*, 524 (2011) 104.
74. K. Hembram, D. Sivaprahasam and Tata N. Rao, "Combustion synthesis of doped nanocrystalline ZnO powders for varistor applications" *J. European Ceramic Society*, 31 (2011) 1905.
75. K. Nischala, Tata N. Rao, and Neha Hebalkar, "Silica-silver core shell particles for antibacterial textile application" *Colloids & Surfaces B-Biointerfaces*, 82 (2011) 203.
76. K. M. Reddy, Tata N. Rao and J. Joardar, "Stability of nanostructured W-C phases during carburization of WO₃" *Materials Chemistry and Physics*, 128 (2011) 121.
77. R. Subasri, M. Tripathi, K. Murugan, J. Revathi, G.V.N. Rao and Tata N. Rao, "Investigations on the photocatalytic activity of sol-gel derived plain and Fe³⁺/Nb⁵⁺-doped titania coatings on glass substrates" *Materials Chemistry and Physics* 124 (2010) 63.
78. A. Bhaskar, M. Deepa, T.N. Rao and U.V. Varadaraju "Enhanced Nanoscale Conduction Capability of a MoO₂/Grapheme Composite for High Performance Anodes in Li ion Batteries", *Journal of Power Sources* 216 (2012) 169.
79. M. Chandra Sekhara Reddy, V. Vasudeva Rao, **T.N. Rao** and L. Syam Sundar, "Enhancement of Convective Heat Transfer Coefficient with TiO₂ Nanofluid in a Double Pipe Heat Exchanger", *International Journal of Nanotechnology and Applications*, Vol. 5, p 59-68, 2011.
80. S. Anadan, T.N. Rao, M. Sathis, D. Rangappa, I. Honma, M. Miyauchi, Superhydrophilic grapheme-loaded TiO₂ thin film for self-cleaning applications, *ACS Applied Materials & Interfaces*, 5 (2013) 207
81. A. Bhaskar, M. Deepa, Tata. N. Rao and U.V. Varadaraju, In-situ carbon coated Li₂MnSiO₄/C composites as cathodes for enhanced performance Li-ion batteries, , *J. Electrochem. Soc.*, 159 (2012) A1954.
82. A. Bhaskar, M. Deepa and Tata N. Rao, MnO₂/Multiwalled carbon nanotubes hybrid for use as a Li ion battery anode, *ACS Applied Materials & Interfaces*, 5 (2013) 2555.

83. S. Sarma and Tata N. Rao, A novel method for measurement of porosity in nanofiber mat using pycnometer in filtration, *Journal of Engineered fibers and fabrics* (Accepted).
84. S. Anandan, T.N. Rao, R. Gopalan and Y. Ikuma, Fabrication of visible light driven N-doped ordered mesoporous TiO₂ photocatalysts and their photocatalytic applications, *J. Nanoscience & Nanotechnology*, *J. Nanosci. Nanotechnol.* 13 (2013) 1-6.
85. K. Hembram, D. Sivaprahasam. K. Wegner and T. N. Rao, Large-scale manufacture of ZnO nanorods by flame spray pyrolysis, *J. Nanoparticle Research*, 15 (2013) 1461.
86. Tata N. Rao, and Raju Prakash: Nano Batteries: Future of Automotive Transportation, *Nano Digest*, 4 (3013) 28.
87. K. Murugan, R. Subasri, **Tata N Rao**, A.S. Gandhi and B.S. Murthy, Synthesis, Characterization and demonstration of self-cleaning TiO₂ coatings on glass and ceramic tiles. *Progress in Organic Coatings* (in press)

Proceedings and reviews:

88. A. Fujishima and **Tata N. Rao**, "Recent advances in heterogeneous TiO₂ photocatalysis" *Proc. Indian Acad. Sci. (Chem. Sci.)* 109 (1997) 471. [Cited: 22](#)
89. A. Fujishima and **Tata N. Rao**, "Interfacial photochemistry: fundamentals and applications" *Pure & Appl. Chem.*, 70 (1998) 2177. [Cited: 9](#)
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