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Metal Oxides, Photocayalytic hydrogen generation and CO2 reduction to hydrocarbons, Gas sensors
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List of Publications

Refereed Journals

1. **Sanju Rani**, Somnath C. Roy and M. C. Bhatnagar, "Effect of Fe Doping on the Gas Sensing Properties of Nano-crystalline SnO_2 Thin Films", ***Sensors and Actuator B*** **,**122 (**2007**) 204-210.
2. **Sanju Rani**, Somnath C. Roy, N. Karar, M. C. Bhatnagar, "Structure, Microstructure and Photoluminescence properties of Fe doped SnO_2 thin films", ***Solid State Communications*** 141 (**2007**) 214-218.
3. **Sanju Rani**, M.C. Bhatnagar, N.K. Puri, Somnath C. Roy and D. Kanjilal "75 MeV Ni^{5+} ion beam induced modifications in the structural and optical properties of SnO_2 thin films" ***Nuclear Instruments and Methods in Physics Research B*** 266 (**2008**) 1987-1992.
4. **Sanju Rani**, M.C. Bhatnager, Somnath C. Roy and D. Kanjilal, "*p*-type gas sensing behaviour in un-doped SnO_2 thin films by high-energy ion beam irradiation" ***Sensors and Actuator B***135 (**2008**) 35-38.
5. **Sanju Rani**, Somnath C. Roy, N.K. Puri, M. C. Bhatnagar and D. Kanjilal, "Enhancementof Ammonia sensitivity in swift heavy ion irradiated nano-crystalline SnO_2 thin films" ***Journal of Nanomaterials*** **(2008)** Article No. 395490.

6. Manoj Kumar, **Sanju Rani**, M. C. Bhatnagar, Somnath C. Roy, **"**Structure, Ferroelectric and Gas Sensing Properties of Sol-gel Derived (Ba,Sr)(Ti,Zr)O_3 Thin Films*"**Material Chemistry and Physics*** 107 (**2008**) 399-403.
7. **Sanju Rani**, Somnath C. Roy, Maggie Paulose, Oomman K. Varghese, Gopal K. Mor,Sanghoon Kim, SorachonYoriya, Thomas J. LaTempa and C. A. Grimes"Synthesis and applications of electrochemically self-assembled titania nanotube arrays" ***Physical Chemistry Chemical Physics***12 **(2010)** 2780- 2800.
8. Craig A. Grimes, Somnath C. Roy**, Sanju Rani,** andQ. Y. Cai **"**Theory, instrumentation and applications of magnetoelastic resonance sensors: A reveiw" ***Sensors*** 11 (**2011**) 2809-2844.
9. Thomas J. LaTempa, **Sanju Rani,**NingzhongBao and Craig A. Grimes, "Generation of fuel from CO_2 saturated liquids using a p-Si nanowire □n-TiO_2nanotube array photoelectrochemical cell" ***Nanoscale*** **4 (2012)** 2245-2250
10. **Sanju Rani**, Somnath C. Roy, and Craig A. Grimes, "Photocatalytic reduction of CO_2 using TiO_2 pellets as flow through membranes" ***Applied Surface Science*** **289 (2014)** 203-208
11. **Sanju Rani** and N. Rajalakshmi, "Effect of nanotube diameter on photo-electrochemical properties of carbon quantum dot functionalised TiO_2 nanotubes" ***Journal of Clean Energy Technology***, 3(**2015**)367-371
12. **Sanju Rani**, P.H. Borse, AlkaPareek, N. Rajalakshmi and K.S. Dhathathreyan, " Photo-current enhancement in carbon quantum dots functionalised titania nanotubes arrays" ***Journal of Nanoscience and Nanotechnology***, Accepted for publication

Conference proceeding

1. Shanmugapriya P, Pandiyarasan V, **Sanju Rani**, Rajalakshmi N, " Structural and photocatalytic behaviour of TiO_2 and α-Fe_2O_3-TiO_2nanorods" Emerging energy technology perspective- A sustainable approach-ISBN:978-83-73-2.

Conference presentations

1. “Gas sensing behaviour of Fe-doped nano-crystalline tin oxide thin films” Poster presented in the **International Conference on Nano-science and Technology** (ICONSAT-06), New Delhi, March 16-18, 2006.

2. “Selective CO sensing properties of Fe doped nano-crystalline SnO_2 thin films” Poster presented in the **Nano-2006,**IIScBanglore August 20-25, 2006.

3. “Modification of optical and gas sensing properties of SnO_2 thin films by Fe doping” Oral presentation in the Thin films 2006, the **3rd international conference on technological advances of thin films and surface coatings**, Singapore Grand Copthorne Waterfront hotel, Singapore, December 11-15, 2006.

4. “Iron doped Tin oxide thin films- An optical spectroscopy study” Poster presentation in the **Advancednano materials-2007 (ANM-2007)**, Indian institute of Technology, Bombay, January 7-10, 2007.

5. “Modification in structure, surface morphology and optical properties of Fe doped SnO2 thin films by swift heavy ion irradiation” Poster presentation in the **18th Annual General meeting of the material research society of the India (MRSI)**, National Physical laboratory, New Delhi, February 12-14, 2007.

6. “Grain growth inhibition and gas sensing properties of Fe doped tin oxide thin films” Poster presentation in **12th National seminar on physics and technology of sensors (NSPTS-12)**, Bhabha Atomic Research Center, Mumbai, March 7-9, 2007.

7.“Swift heavy ion beam induced structural and microstructural modification of tin oxide (SnO_2) thin films for gas sensing applications” **Oral** Presentation in **International conference of materials for advanced technologies- 2007** (ICMAT), July 1-6, 2007

8.“Modification in structural and optical properties of SnO_2 thin films by 75 MeV Ni ion irradiation” **Oral** Presentation in **Surface modification of material by ion beam-2007** (SMMIB-15),Sep 30- Oct-5, 2007

9. “Modification in gas sensing properties of SnO_2 thin films by 75MeV Ni^+ irradiation” Oral Presentation **13th National seminar on physics and technology of sensors (NSPTS-13)**, University of Pune, 3 March -5 March 2008

10. "Study of high energy Ag^{8+} ion irradiated SnO_2 thin films for gas sensing application" **Oral** Presentation in International conference **Thin films 2008**, Singapore, July 13-July 16, 2008

11. "*p*-type gas sensing behaviour in high energy ion beam irradiated un-doped SnO_2 thin films" **Poster** presentation in International conference IEEE Sensors – 2008" Lecce, Italy, October 26- October 29, 2008.

12. **Sanju Rani** and N. Rajalakshmi, "Effect of nanotube diameter on photo-electrochemical properties of carbon quantum dot functionalisedTiO_2nanotubes" International Conference on Energy and Environmental Science (ICEES-2014), *held at Kuala Lumpur, Malaysia on 4-5 September 2014* **(Oral presentation)**

13. Shanmugapriya P,Pandiyarasan V, **Sanju Rani** and N. Rajalakshmi, "Photo-electrochemical studies on TiO_2 and a-Fe_2O_3 TiO_2 rod-like nanostructures" International Conference on Electrochemical Science and Technology (ICONEST-2014), *held at Indian Institute of Science, Bengaluru, India on 7-9 August 2014*(**Poster Presentation**-presented by Shanmugapriya P)