

Curriculum Vitae

Venkatesan RAJALINGAM

CEMHTI – CNRS

1D avenue de la recherche scientifique

45071 Orleans cedex 2 France

Mobile: +33 780 793 085

E – Mail: lingesun@gmail.com

Education

2014-present: Postdoctoral fellow, Centre National de la Recherche Scientifique (CNRS), Orleans, France.

2010-2014 (Jan): Ph.D in Nanoscience and nanotechnology, Cinvestav-IPN, Mexico D.F.

Ph.D in Physics, Universite du Maine, Le Mans, France.

2007-2009: M.Sc in Physics, Government Arts College, Bharathiyar University, Coimbatore, India. Percentage: 86.

2003-2006: B.Sc Mathematics, Physics, Chemistry, Sacred Arts College, Thiruvalluvar University, Thiruppattur, India. Percentage: 90.

Research areas

Semiconducting metal oxides (SMO) are promising materials for electrochemical energy storage (EC) and photocatalytic (PC) reactions. Especially in search of new sources of energy production or for improving environment quality.

In terms of EC, focusing on the preparation of various SMO and their composites by sol-gel, hydrothermal, precipitation and combinational methods for enhanced energy density.

As for photocatalysis, synthesis of bismuth vanadate (BiVO_4) material in different forms such as powders, nanopowders and thin films with nanostructured textures. Exhaustive experimental methods were used for the deep insights on the relevant features of the photocatalysts. As an objective of the work, synthesized photocatalysts were investigated for its effective degradation of rhodamine 6G and methylene blue dyes under visible light irradiation.

Professional skills

- Systematic synthesis study on physical and chemical synthesis methods.
- Fabrication of an asymmetric electrochemical cell in glove box.
- Physicochemical characterizations (TGA, XRD, SEM, FE – SEM, AFM, Raman, UV – Visible – NIR, EPR, BET, dielectric and FT - IR).
- Electrochemical studies (CV, impedance and battery test).
- Design and construction of the ultrasonic spray pyrolysis (USP) technique to perform thin film deposition on silica and glass substrates at various substrate temperatures and carrier gas flow rate.
- Developing the preparation method by RF-Sputtering using ball milled SMO target.
- Designing and implementing, photocatalytic reactor to evaluate the PC performance of SMO.
- Experience in using CASTEP code for simulating Crystal, band structure, density of states and X-ray diffraction pattern of the materials using DFT and compared the experimental with numerical simulation results.

Academic achievements

- International Student fellowship from Mexican Government, Ministry of Education - Secretaria de Educacion Publica (SEP) for doctoral studies.
- Won first price for the best poster presentation among the participants on Tuesday (13/8/2013) of IMRC 2013, Cancun, Mexico. Invited for the coming 2014 MRS spring meeting at San Francisco, USA, April 21-25, 2014.

- Won third price for the best poster presentation among the participants on Tuesday (13/8/2012) of IMRC 2012, Cancun, Mexico.
- Won third price for the best poster presentation among the participants on Wednesday (16/8/2011) of IMRC 2011, Cancun, Mexico.

Trainings and workshops

- Workshop on Nanoscopy electronics conducted by Cinvestav-IPN, Mexico City, October, 22-24, 2013.
- Hands on training on Carl Zeiss Field Emission Scanning Electron Microscopy (FESEM) (Auriga, and Merlin) conducted by Carl Zeiss, Obherkochen, Germany, July 18-22, 2011.
- Hands on training to operate Carl Zeiss Auriga Field Emission Scanning Electron Microscopy (FESEM) conducted by Cinvestav-IPN and Carl Zeiss, Mexico City, July 13-15, 2010.
- Indo-Russian Workshop on “Self propagating high temperature synthesis” conducted by Indian Institute of Science, Bangalore, India, November 27-29, 2009.
- Workshop on “Frontier topics in physics” under the auspices of The National Academy of Science, Indian National Science Academy, Indian Academy Of Science, Tirupur, India, 27-28, 2009.
- Workshop on physics on “Physics of thin films” conducted by Government Arts College, Coimbatore, India, February 5-6, 2008.

Extracurricular activities

- MRS student member 2012- present
- Participated in the leadership training camp conducted by M.R.Pai foundation, Coimbatore, India.
- Worked as a trainee in Photoshop (IAB Photoshop), Coimbatore, India.
- Served in National Service Scheme and Youth Red Cross.
- Course on “Employability preparedness training programme” at Loyola Institute of Business Administration (LIBA).

Articles in referred journal

1. **R.Venkatesan**, S.Velumani, M.Tabellout, N.Errien, A.Kassiba “Dielectric behavior, conduction and EPR active centers in BiVO₄ nanoparticles” Journal of Physics and Chemistry of Solids 74 (2013) 1695–1702.
2. **R. Venkatesan**, S. Velumani, A. Kassiba “Mechanochemical synthesis of nanostructured BiVO₄ and investigations of related features” Materials Chemistry and Physics 135 (2012) 842-848.

International conference contributions

Oral communications

1. “Controllable synthesis of highly efficient BiVO₄ photocatalyst prepared by mechanochemical process and RF-Sputtering for rhodamine 6G and methylene blue degradation” in symposium R, Photocatalysis of JSAP-MRS joint symposia, Kyoto, Japan, September 16-20, 2013.
2. “High photocatalytic performance of BiVO₄ nanostructured thin films prepared by RF-Sputtering” in symposium 7D of IMRC 2013, Cancun, Mexico, August 11-15, 2013.
3. “The Effect of deposition parameters on RF-Sputtered BiVO₄ thin films” in symposium 6C of IMRC 2012, Cancun, Mexico, August 12-17, 2012.
4. “Comparative synthesis routes for photocatalytic nanostructured bismuth vanadate” in symposium 1A of IMRC 2012, Cancun, Mexico, August 12-17, 2012.
5. “Synthesis of BiVO₄ by mechanochemical process and its characterization” in symposium 5 of IMRC 2011, Cancun, Mexico, August 14-19, 2011.
6. “Thin film solar cell” in workshop on physics of thin films, organized by physics department, Government Arts College, Coimbatore, India, February 5-8, 2008.

Poster presentations

1. “An easy route to synthesis nanosized TiO₂ for supercapacitor application” in symposium UU, Titanium oxides – from fundamental understanding to applications, San Francisco, USA, April 6 – 10, 2015.
2. “sol-gel preparation and electrochemical characteristics of TiO₂ nanoparticles as electrodes of supercapacitors” in symposium B, Functional hybrid nanomaterials, nanocomposites and their applications, Sitges, Spain, March 9-13, 2015.
3. “A Comparative photocatalytic performance on the photodegradation of rhodamine 6G by BiVO₄ particles prepared by ball milling and hydrothermal route” in symposium R, Photocatalysis of JSAP-MRS joint symposia, Kyoto, Japan, September 16-20, 2013.
4. “Optimization of BiVO₄ thin film by ultrasonic spray pyrolysis for an efficient removal of methylene blue” in symposium 7D of IMRC 2013, Cancun, Mexico, August 11-15, 2013.
5. “Mechano-chemical synthesis of BiVO₄ and its enhanced photocatalytic properties for the degradation of methylene blue and rhodamine 6G” in symposium 7D of IMRC 2013, Cancun, Mexico, August 11-15, 2013.
6. “Growth mechanism of BiVO₄ thin films deposited by RF-Sputtering and its characterization” in symposium 1A of IMRC 2012, Cancun, Mexico, August 12-17, 2012.
7. “Effect of milling time on BiVO₄ nanoparticles synthesized by mechanochemical process” in symposium 5 of IMRC 2011, Cancun, Mexico, August 14-19, 2011.

Personal information

Date and place of birth: 20/01/1986, Thiruvannamalai, Tamil Nadu, India

Marital status: Single

Languages know: English and Tamil (mother tongue)

References

Professor. Velumani Subramaniam
Department of Electrical Engineering-SEES,
Cinvestav-IPN,
Av. IPN 2508, col san pedro zacatenco,
Mexico D.F, Mexico 07360.
Tel: +52 55 5747 4001, E-mail: velu@cinvestav.mx

Professor. Abdel Hadi Kassiba
Institut des Molecules et Materiaux du Mans (IMMM),
Universite du Maine,
Avenue Olivier Messiaen,
F-72085 Le Mans cedex, France.
Tel: +33 243833512, E-mail: kassiba@univ-lemans.fr