**Chintalapalle V. Ramana**

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**Research Interests**

**Advanced Materials and Systems for Energy Utilization**

**High-Temperature Ceramics & Next-Generation Electronic**

**Materials for Aerospace**

**Education**

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**Ph.D.** India 1999

**M.Sc.** India 1992

**B.Sc.** India 1990

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**Professional Experience**

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1. Assistant Professor July, 2009 – Present

(Department of Mechanical Engineering, University of Texas at El Paso, USA)

2. Research Assistant Professor Sept., 2007 – June, 2009

(Department of Metallurgical & Materials Engineering, University of Texas at El Paso, USA)

3. Research Fellow Dec., 2004 – Aug., 2007

(Nanoscale Interdisciplinary Research Team\*, University of Michigan-Ann Arbor, USA)

4. Visiting Scholar July, 2004 – Nov., 2004

(University of Missouri-Rolla, USA)

5. Postdoctoral Research Scientist April, 2001 – June 2004

Surface Science/Ion Beams Laboratory, Department of Physics & High-Temperature Electrochemistry Center (HI-TEC), Departments of Physics and Chemical Engineering, Montana State University-Bozeman, USA

6. Research Associate April, 2000 - March, 2001

(Indian Institute of Science (IISc.), Bangalore, India)

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**Academic Honors and Awards**

* Fellow of the International Congress of Chemistry and Environment
* International Scientist of the Year 2004 (Science and Engineering)
* Listed in Marquis Who’s Who in Science and Engineering
* Research Associate Fund/Fellowship (RA) by the Council of Scientific and Industrial Research (CSIR), Government of India – 1999
* Provisional Research Associate Fund/Fellowship (PRA) by the Council of Scientific and Industrial Research (CSIR), Government of India – 1998
* Best Research Paper Award (National Level) (For the research paper presented in “Seminar Cum Workshop on Materials Characterization”) – 1998
* University Top Second Rank in M.S. (citation certificate issued) in Physics – 1994
* Distinction (for high-level academic performance) in B.S. - 1990
* National Merit Scholarship Recipient (for Two Years): 1985-86 and 1986-87

## **Refereed Publications**

1. Structure and Magnetic Properties of Nanophase-LiFe1.5P2O7, **C.V. Ramana**, M. Kopec, A. Mauger, F. Gendron and C.M. Julien, ***Journal of Applied Physics*** (2009) in press.
2. Low-temperature chemical synthesis and microstructure analysis of GeO2 nanocrystals with alpha-quartz structure, V.V. Atuchin, T.A. Gavrilova, S.A. Gramilov, V.G. Kostrovosky, L.D. Pokrovsky, I.B. Troitskaia, R.S. Vemuri, G. Carbajal-Franco and **C.V. Ramana**, ***Crystal Growth and Design 9*** (2009) 1829-1832.
3. Synthesis, characterization and electrochemical properties of a novel triphosphate LiFe2P3O10, M. Kopec, **C.V. Ramana**, A. Mauger, F. Gendron, J.F. Morhange, K. Zaghib and C.M. Julien, ***Electrochimica Acta 54*** (2009) 5500-5508.
4. Study of the Li-insertion/extraction process in LiFePO4/FePO4, **C.V. Ramana**, A. Mauger, F. Gendron, C.M. Julien and K. Zaghib, ***Journal of Power Sources 187*** (2009) 555-564.
5. Low-temperature synthesis of morphology controlled metastable hexagonal molybdenum trioxide (MoO3), **C.V. Ramana**, V.V. Atuchin, I.B. Troitskaia, S.A. Gavrilova, V.G. Kostrovosky and G.B. Saupe, ***Solid State Communications*** ***149*** (2009) 6-9.
6. Spectroscopic ellipsometry characterization of the optical properties and thermal stability of ZrO2 films made by ion-beam assisted deposition, **C. V. Ramana**, S. Utsunomiay, R.C. Ewing, U. Becker, V.V. Atuchin, V.S. Aliev and V.N. Kruchinin ***Applied Physics Letters*** ***92*** (2008) 011917.
7. Simulated solid oxide fuel cell (SOFC) interconnect performance of Crofer 22 APU with and without filtered arc CrAlON coatings, P.E. Gannon, A. Kayani, **C.V. Ramana**, W. Priyantha, M.C. Diebert, R.J. Smith and V.I. Gorokovsky, ***Electrochemical and Solid-State Letters 11*** (2008) B54-B58.
8. Surface crystallography and electronic structure of potassium yttrium tungstate, V. V. Atuchin, L.D. Pokrovosky, O.Y. Khyzhun, A.K. Sinelnichenko and **C.V. Ramana**, ***Journal of Applied Physics*** ***104*** (2008) 033518.
9. Thermal and chemical stability of epitaxial Fe films on the Ti-Al interface, **C.V. Ramana**, W. Priyantha, Bum-Sik Choi, R.J. Smith, ***Surface Science*** 602 (2008) 534.

1. Novel lithium iron pyrophosphate (LiFe1.5P2O7) as a positive electrode for Li-ion batteries, C.V. Ramana, A. Ait-Salah, S. Utsunomiay, F. Gendron, A. Mauger and C. M. Julien, ***Chemistry of Materials 19*** (2007) 5319-5324.
2. Pulsed-laser deposited LiNi0.8Co0.15Al0.05O2 thin films for application in microbatteries, **C.V. Ramana**, K. Zaghib and C.M. Julien, ***Applied Physics Letters 90*** (2007) 021916.
3. Growth and electrochemical properties of Li-Ni-Co-Al oxides in lithium microbatteries, **C.V. Ramana**, K. Zaghib and C.M. Julien, ***Journal of Vacuum Science and Technology A 25*** (2007) 1208-1213.
4. Spectroscopic and chemical imaging analysis of lithium iron triphosphate for electrochemical energy related applications, **C. V. Ramana,** A. Ait-Salah, S. Utsunomiay, A. Mauger, F. Gendron and C.M. Julien, ***Journal of Physical Chemistry C*** ***111*** (2007) 1049-1054.
5. Low-energy Ar+ ion-beam-induced amorphization and chemical modification of potassium titanyl arsenate surfaces, **C. V. Ramana**, V.V. Atuchin, L. D. Pokrovsky, L.I. Isaenko,S.A. Zhurkov, A.A. Merkulov, U. Becker and R.C. Ewing, ***Journal of Physical Chemistry C*** ***111*** (2007) 2702-2708.
6. Microstructure characterization of LiXPO4 (X=Ni, Co, Mn) materials for application in high-energy density lithium ion batteries, C. M. Julien, A. Ait-Salah, F. Gendron, A. Mauger and **C. V. Ramana**, ***Scripta Materialia 55*** (2006) 1179.
7. An analytical electron microscopy investigation of the structural characteristics of LiNiPO4 as a positive-electrode lithium-ion batteries, **C. V. Ramana** et al., ***Chemistry of Materials*** ***18*** (2006) 3788.
8. Formation of V2O3 nanocrystals by thermally-induced vacuum reduction of V2O5 thin films, **C.V. Ramana**, S. Utsunomiya, R.C. Ewing, and U. Becker, ***Solid State Communications*** ***137*** (2006) 645.
9. Chemical and electrochemical properties of molybdenum oxide thin film battery-electrodes grown by pulsed laser deposition, **C.V. Ramana** and C.M. Julien, ***Chemical Physics Letters 428*** (2006) 114.
10. Electronic properties of performance upon lithium intercalation of MoO3 electrode-films grown by PLD, C.M. Julien, **C.V. Ramana**, O.M. Hussain, ***ECS Transactions 1*** (2005) 1
11. Investigation of temperature induced structural transformations in tungsten oxide (WO3) thin films, **C.V. Ramana**, S. Utsunomiya, C.M. Julien, and U. Becker, ***ECS Transactions 1*** (2005) 37.
12. Highly oriented growth of pulsed-laser deposited LiNi0.8Co0.2O2 thin films for application in microbatteries, **C.V. Ramana**, K. Zaghib, and C.M. Julien, ***Rapid Communication***, ***Chemistry of Materials 18*** (2006) 1397.
13. Structural stability and phase transitions in WO3 thin films, **C.V. Ramana**, S. Utsunomiya, R.C. Ewing, C.M. Julien, and U. Becker, ***Journal of the Physical Chemistry B 110*** (2006) 10430.
14. Synthesis, structural and electrochemical properties of pulsed laser deposited Li(Ni,Co)O2 thin films, **C.V. Ramana**, K. Zaghib, and C.M. Julien, ***Journal of Power Sources 159*** (2006) 1310.
15. Electron microscopy investigation of structural transformations in tungsten oxide (WO3) thin films, **C.V. Ramana**, S. Utsunomiya, R.C. Ewing, C.M. Julien, and U. Becker, ***Rapid Research Letter***, ***Physica Status Solidi (A): Applied Physics and Materials Applications*** ***202*** (2005) R 108 – R 110.
16. Correlation between growth conditions, microstructure, and optical properties of pulsed laser deposited vanadium oxide thin films, **C.V. Ramana**, R.J. Smith, O.M. Hussain, C.C. Chusuei, and C.M. Julien, ***Chemistry of Materials 17*** (2005) 1213.
17. Surface analysis of pulsed laser deposited V2O5 thin films and their lithium intercalated products studied by Raman spectroscopy, **C.V. Ramana**, R.J. Smith, O. M. Hussain, M. Massot and C.M. Julien, ***Surface and Interface Analysis*** ***37*** (2005) 406.
18. Surface analysis of LiMn2O4 spinels made by X-ray photoelectron spectroscopy and Raman scattering, **C.V. Ramana**, M. Massot and C.M. Julien, ***Surface and Interface Analysis*** ***42*** (2005) 412.
19. Growth and surface characterization of vanadium oxide thin films made by pulsed-laser deposition, **C.V. Ramana**, O. M. Hussain and C. Julien, ***Journal of Vacuum Science and Technology A*** ***22*** (2004) 2453.
20. Epitaxial growth of bcc Fe films on Al(100) surfaces using Ti as an interface stabilizer, **C.V. Ramana**, Bum-Sik Choi and R.J. Smith, ***Surface Science*** ***551*** (2004) 189.
21. Using CrAlN multilayer coatings to improve the oxidation resistance of steel interconnects for solid oxide fuel cells, R. J. Smith, C. Tripp, A. Knospe, **C.V. Ramana**, V. Gorokhovsky, V. Shutthanandan, ***Journal of Materials Engineering and Performance 13*** (2004) 295.
22. High temperature oxidation resistance and surface electrical conductivity of stainless steel with filtered arc CrAlN superlattice multilayer coatings, P.E. Gannon, C. Tripp, A. Knospe, **C.V. Ramana**, M. Deibert, R. J. Smith, V. Gorokhovsky, V. Shutthanandan, and D. S. Gelles, ***Surface and Coatings Technology*** ***188-189*** (2004) 55.
23. On the growth mechanism of vanadium oxide thin films, **C.V. Ramana**, R.J. Smith, O.M. Hussain and C. Julien, ***Materials Science and Engineering B*** ***111*** (2004) 218.
24. Ion scattering studies of the formation and thermal stability of the Ti-Al interface, **C.V. Ramana**, B.S. Choi, R. Hutchison and R.J. Smith, ***Nuclear Instruments and Methods B*** ***212*** (2003) 465.
25. Grain size effects on the optical characteristics of pulsed-laser deposited vanadium oxide thin films, **C.V. Ramana**, R.J. Smith and O.M. Hussain, **Rapid Research Note**, ***physica status solidi (a)*** ***199*** (2003) R4.
26. Using MeV ion backscattering/channeling and MC simulations to characterize the composition and structure of buried metal-metal interfaces, R.J. Smith, **C.V. Ramana**, Bum-Sik Choi, Adli A. Saleh, N.R.Shivaparan and V. Shutthanandan, ***Applied Surface Science*** ***219***(2003) 28.
27. Low-energy ion beam induced effects in Al(100) surface studied using Rutherford backscattering and channeling, **C.V. Ramana**, Bum-Sik Choi and R.J. Smith, ***Applied Surface Science***, ***214/1-4*** (2003) 338.
28. Electrochemical intercalation of lithium in V2O5-MoO3 films grown by electron-beam deposition, C.M. Julien, O.M. Hussain, and **C.V. Ramana**, ***Electrochemical Society Proceedings 20*** (2003) 621.
29. Thermal Stability of thin Ti films on Al single crystal surfaces, **C.V. Ramana**, Bum-Sik Choi, R.J. Smith, Byuong Suk Park, Adli A. Saleh, Dong Ryul Jeon, R. Hutchison, S.P. Stuk, ***Journal of Vacuum Science and Technology A***  ***21*** (2003) 1326.
30. Microstructural features of pulsed-laser deposited V2O5 thin films, **C.V. Ramana**, O.M. Hussain, R. Pinto and C.Julien, ***Applied Surface Science*** ***207*** (2003) 135.
31. Using metallic interlayers to stabilize abrupt, epitaxial metal-metal interfaces, **C.V. Ramana**, Bum-Sik Choi, P. Masse and R.J. Smith, ***Physical Review Letters*** ***90***, 066101 (2003).
32. Structure and electrochemistry of thin-film oxides produced by pulsed-laser ablation, C. Julien, E. Haro-Poniatowski, O.M. Hussain and **C.V. Ramana**, ***Ionics*** ***7*** (2001) 165.
33. Electron transport mechanism at the V2O5-metal interfaces in metal-oxided-metal microdevices, **C.V. Ramana**, O.M. Hussain, and B. Srinivasulu Naidu, and C.Julien, ***Ionics* *7*** (2001) 135.
34. Low-temperature growth of vanadium pentoxide thin films produced by pulsed laser ablation, **C.V. Ramana**, B.S. Naidu, O.M. Hussain and R. Pinto, **Rapid Communication**, ***Journal of Physics D: Applied Physics*** ***34***(2001) L35.
35. Dielectric properties of electron beam evaporated V2O5 cathodes in micro-batteries, **C.V. Ramana**, O.M. Hussain, and B. Srinivasulu Naidu, and C.Julien, ***Materials Science and Engineering B******60*** (1999) 135.
36. Influence of oxygen partial pressure on the optical properties of electron beam evaporated V2O5 thin film cathodes, **C.V. Ramana**, O.M. Hussain, S. Uthanna and B. Srinivasulu Naidu, ***Optical Materials******10*** (1998) 101.
37. Physical investigations of electron beam evaporated vanadium pentoxide films, **C.V. Ramana**, O.M. Hussain, and B. Srinivasulu Naidu, C.Julien and M. Balkanski, ***Materials Science and Engineering B******52*** (1998) 32.
38. Studies on M-I-M sandwich structures of electron beam evaporated V2O5 thin films, **C.V. Ramana**, O.M. Hussain, and B. Srinivasulu Naidu, ***Bulletin of Electrochemistry******14*** (1998) 369.
39. Spectroscopic characterization of electron beam evaporated V2O5 thin films for application in micro-batteries, **C.V. Ramana**, O.M. Hussain, B. Srinivasulu Naidu and P.J. Reddy, ***Thin Solid Films******35*** (1998) 219.

## **Contributed Conference Presentations**

1. Synthesis, structure and electrochemical properties of Li4Ti5O12, **C.V. Ramana**, S. Utsunomiya, U. Becker, R.C. Ewing, A. Mauger, F. Gendron, K. Zaghib and C.M. Julien, MRS Fall Meeting, Boston, November 27-29, 2006.
2. Electrochemical properties of Li-Ni-Co-Al oxide thin films, **C.V. Ramana**, K. Zaghib and C.M. Julien, AVS International Symposium, San Francisco, November 7-12, 2006.
3. Microstructure and electronic structure determination of Li4Ti5O12 for application in lithium-ion batteries, **C.V. Ramana**, S. Utsunomiya, U. Becker, K. Zaghib and C.M. Julien, ECS International Meeting, Cancun, Mexico, October 29-November 2, 2006.
4. Spectroscopic characterization of lithium nickel phosphate for electrochemical applications, **C.V. Ramana**, S. Utsunomiya, U. Becker, A. ait-Salah, A. Mauger, F. Gendron and C.M. Julien, ECS International Meeting, Cancun, Mexico, October 29 -November 2, 2006.
5. Structural evolution of intercalation compounds on the reduced dimensionality: cathode materials for application in battery technology, **C.V. Ramana** and C.M. Julien, ECS International Meeting, Cancun, Mexico, October 29 -November 2, 2006.
6. Electrochemical performance of pulsed-laser deposited V2O5 films, **C.V. Ramana** and C.M. Julien, ECS International Meeting, Cancun, Mexico, October 29 -November 2, 2006.
7. A new lithium iron phosphate LiFe2P3O10 synthesized by wet-chemistry, A. ait-Salah, **C.V. Ramana**, A. Mauger, F. Gendron and C.M. Julien, ECS International Meeting, Cancun, Mexico, October 29 -November 2, 2006.
8. Synthesis, structure and magnetic properties of LiFe1.5P2O7, A. Ait-Salah, **C.V. Ramana**, A. Mauger, F. Gendron and C.M. Julien, ECS International Meeting, Cancun, Mexico, October 29 -November 2, 2006.
9. Thermal oxidation of molybdenite surfaces, **C.V. Ramana**, V. Shutthanandan and U. Becker, Adsorption of Metals to Geomedia, Division of Geochemistry, ACS, American Chemical Society (ACS) National Meeting, Atlanta, GA, March 26-30, 2006.
10. Analytical spectroscopy and microscopy studies of the growth, structure, and electrochemical properties of Al-doped Li-Ni-Co oxide films, **C.V. Ramana**, K. Zaghib, and C. M. Julien, Analytical Spectroscopy Approaches, Division of Analytical Chemistry, ACS, American Chemical Society (ACS) National Meeting, Atlanta, GA, March 26-30, 2006.
11. Imidazolium-based polymer supported gadolinium triflate as a novel Lewis acid catalyst for Michael additions, Ramesh Alleti, Woon Su Oh, Meher Perambuduru, **C.V.** **Ramana**, U. Becker, and V. Prakash Reddy, American Chemical Society (ACS) National Meeting, Atlanta, GA, March 26-30, 2006.
12. Investigation of temperature induced structural transformations in tungsten oxide (WO3) thin films, **C.V. Ramana**, S. Utsunomiya, C.M. Julien, and U. Becker, presented at the ECS Meeting, Los Angeles, CA, USA, October 16-21, 2005.
13. Growth and characterization of thin oxide films, **C.V. Ramana** and U. Becker, “*Workshop on In-situ characterization of surface and interface structures and processes,*” Argonne National Laboratory, Argonne, IL, USA, September 8-9, 2005.
14. High temperature oxidation studies of filtered arc deposited CrAlN nanolayered coatings on steel plates, A. Kayani, **C.V. Ramana**, R.J. Smith, V.I. Gorokhovsky, V. Shutthanandan, presented at the APS March Meeting, Los Angeles, CA, USA, March 21-25, 2005.
15. Structure and stability of thin Fe films grown on Al(001) surfaces, **C.V. Ramana**, R.J. Smith, and G. Bozzolo, presented at the APS March Meeting, Los Angeles, CA, USA, March 21-25, 2005.
16. Early Stages of Oxidation at 800°C for CrAlON Superlattice Coatings used to Improve Oxidation Resistance of Steel Plates for Applications as SOFC Interconnects, R.J. Smith, A. Kayani, **C.V. Ramana**, P.E. Gannon, M.C. Diebert, V.I. Gorokhovosky, V. Shutthanandan, and D. Gelles, AVS International Symposium, Anaheim, CA, USA, November 14-19, 2004.
17. Pulsed laser deposited metal oxides for electrochemical energy related applications, **C.V. Ramana**, C.M. Julien, and O.M. Hussain, AVS International Symposium, Anaheim, CA, USA, November 14-19, 2004.
18. Structure and thermal stability of thin Fe films on Al(100) surfaces with Ti interlayers, **C.V. Ramana**, R.J. Smith, and B.S. Choi, AVS International Symposium, Anaheim, CA, USA, November 14-19, 2004.
19. Early Stages of Oxidation for CrAlON Superlattice Coatings Used to Improve Oxidation Resistance of Steel Plates for Applications as SOFC Interconnects, R. J. Smith, A. Kayani, **C.V. Ramana**, P.E. Gannon, M.C. Diebert, V. Gorokhovsky, V. Shutthanandan, presented at the ASM Materials and Solutions Conference and Exposition (Topic: Fuel Cells: Materials, Processing & Manufacturing Technologies), Columbus, OH, USA, October 18-21, 2004.
20. Simulated solid oxide fuel cell (SOFC) interconnect performance of Crofer 22 APU with and without filtered arc coatings from the Cr-Al-O-N elemental system, P.E. Gannon, A. Kayani, **C.V. Ramana**, R.J. Smith, M.C. Diebert, V. Gorokhovsky, V. Shutthanandan, presented at the ASM Materials and Solutions Conference and Exposition (Topic: Fuel Cells: Materials, Processing & Manufacturing Technologies), Columbus, OH, USA, October 18-21, 2004.
21. **Ion beam analysis of oxidation-resistant CrAlN superlattice coatings on steel bipolar plates for solid oxide fuel cells,** R. J. Smith, A. Kayani, **C.V. Ramana**, P.E. Gannon, M.C. Diebert, V. Gorokhovsky, V. Shutthanandan, International Conference on the Application of Accelerators in Research and Industry, Ft Worth, TX, October 10-15, 2004.
22. High temperature oxidation resistance and surface electrical conductivity of stainless steel with filtered arc CrAlN superlattice multilayer coatings, P. Gannon, C. Tripp, A. Knospe, **C.V. Ramana**, M. Deibert, R. J. Smith, V. Gorokhovsky, V. Shutthanandan, and D. S. Gelles, “International Conference on Metallurgical Coatings and Thin Films” (ICMCTF-2004), San Diego, CA, USA, April 19-23, 2004.
23. Using CrAlN multilayer coatings to improve the oxidation resistance of steel interconnects for solid oxide fuel cells, R. J. Smith, C. Tripp, A. Knospe, **C.V. Ramana**, V. Gorokhovsky, V. Shutthanandan, ASM Materials and Solutions Conference and Exposition (Topic: Fuel Cells: Materials, Processing & Manufacturing Technologies), Pittsburgh, PA, USA, October 13-15, 2003.
24. Surface and material properties of nanostructured vanadium oxide films made by pulsed laser ablation, C.V. Ramana, O.M. Hussain, and C. Julien, 203rd Electrochemical Society Meeting (“New Trends in Intercalation Compounds for Energy Storage and Conversion), Paris, France, April 27 – May 2, 2003.
25. Orientation dependence of interface alloy formation for Ni films on Al single crystals: Comparisons of Monte Carlo simulations with experiment, R.J. Smith, N. Winward, **C.V. Ramana**, V. Shutthanandan, N.R. Shivaparan, Y.-W. Kim, APS Meeting, Austin, TX, March 3-7, 2003.
26. Ion scattering studies of the formation and thermal stability of the Ti-Al interface, **C.V. Ramana**, Bum-Sik Choi, R. Hutchison, and R.J. Smith, “International Conference on Atomic Collisions in Solids” (ICACS-20), Puri, India, January 19-24, 2003.
27. Low-energy He+ and Ar+ ion beam induced effects in Al(100) surface characterized by high-energy ion channeling, **C.V. Ramana**, Bum-Sik Choi and R.J. Smith, “International Conference on Atomic Collisions in Solids” (ICACS-20), Puri, India, January 19-24, 2003.
28. Thermal Stability of thin Ti films on Al single crystal surfaces, **C.V. Ramana**, Bum-Sik Choi, R.J. Smith, Byuong Suk Park, Adli A. Saleh, Dong Ryul Jeon, R. Hutchison, S.P. Stuk, AVS International Symposium, Denver, CO, USA, November 3-8, 2002.
29. Using Ti interlayers as an interface stabilizer to promote epitaxial growth of Fe on Al(100) surfaces, **C.V. Ramana**, Bum-Sik Choi, and R.J. Smith, AVS International Symposium, Denver, CO, USA, November 3-8, 2002.
30. Restraining the laws of nature using single layer of atoms, **C.V. Ramana**, B.S. Choi, and R.J. Smith, Montana Academy of Sciences, Great Falls, MT, April 20, 2002.
31. Combined use of HEIS and LEIS techniques for the study of metal-metal interface formation, **C.V. Ramana**, B.S. Choi and R.J. Smith, APS Meeting, Indianapolis, IN, March 18-22, 2002.
32. Analysis of low-energy ion-beam induced disorder in surface layers of Al(100) surface using high-energy ion backscattering and channeling, **C.V. Ramana**, Bum-Sik Choi and R.J. Smith, APS Meeting, Indianapolis, IN, March 18-22, 2002.
33. Use of Ti monolayers as an interfactant to promote epitaxial growth Fe films on Al(100), **C.V. Ramana**, Bum-Sik Choi, and R.J. Smith, APS Meeting, Indianapolis, IN, March 18-22, 2002.
34. Growth and characterization of vanadium oxide thin films: 2. Optical and electrical properties, **C.V. Ramana**, Condensed Matter Physics Seminar, Department of Physics, Montana State University, MT, USA, May 21, 2001.
35. Studies on vanadium pentoxide thin films, **C.V. Ramana**, presented Ph.D. thesis work at the Solid State Physics Symposium, Kurukshetra, India, December 28-31, 1998.
36. International Training Workshop on Solid State Ionics, **C.V. Ramana** (participant), Banaras Hindu University, Varanasi, India, November 22-28, 1998.
37. Vanadium pentoxide thin films for advanced electrical and optical applications, **C.V. Ramana**, B.S. Naidu and O.M. Hussain, The 5th IUMRS International Conference in Asia, Jawaharlal Nehru Center for Advanced Scientific Research, Indian Institute of Science, Bangalore, India, October 13-16, 1998.
38. Studies on M-I-M sandwich structures of electron beam evaporated V2O5 thin films, **C.V. Ramana**, O.M. Hussain, and B.Srinivasulu Naidu, Seminar cum Workshop on Materials and Characterization, Central Electrochemical Research Institute, Karaikudi, India, July 13-17, 1998.
39. Electrical properties of amorphous and polycrystalline V2O5 thin films, **C.V. Ramana**, and O.M. Hussain, presented at the National Conference on Advances in Condensed Matter Physics, Raman School of Physics, Pondicherry University, Pondicherry, India, February 26-28, 1998.
40. Electrical and dielectric properties of electron beam evaporated V2O5 thin films, **C.V. Ramana**, O.M. Hussain, B.S. Naidu and P.J. Reddy, International Conference on The Physics of Disordered Materials, Jaipur, India, January 27-29, 1997.

**Invited Talks**

* 1. Engineering thin-films, surfaces, and interfaces for application in emerging technologies, **C. V. Ramana**, University of Texas at El Paso, Feb., 2007.
  2. Novel Materials and Engineering Approaches for Application in Energy Technologies, **C. V. Ramana**, University of Wisconsin, Jan., 2007.
  3. Designing new materials for the future energy technology, **C. V. Ramana**, University of Wyoming, Nov., 2006.
  4. The science and technology of thin films and nanostructures: why is it so great to be so small?, **C. V. Ramana**, University of Memphis, Feb. 8, 2006.
  5. Ion beam analysis and modification of materials, **C. V. Ramana**, University of Michigan, Jan. 14, 2005.
  6. A novel approach to promote structural order and stability of the magnetic metal surfaces/interfaces, **C.V. Ramana**, Condensed Matter, Chemical and Biological Materials Seminar, Washington University at St. Louis, Sept. 27, 2004.
  7. Growth and structure of thin Fe films on the Ti-Al interface, **C.V. Ramana**, Condensed Matter Physics Seminar, Department of Physics, Montana State University, MT, USA, September 22, 2003.
  8. Ion beam analysis and modification of materials: current issues and future challenges, **C.V. Ramana, *Chief Guest of the Physical and Chemical Society***, School of Physical and Chemical Sciences, Sri Venkateswara University, Tirupati, India, February 5, 2003.
  9. Growth, microstructure and electrochemical properties of vanadium pentoxide thin films and microbatteries, **C.V. Ramana**, Young Physicist’s Colloquium, Saha Institute of Nuclear Physics, Calcutta, India, August 19-20, 1999.

**Books/Book Chapters**

1. Spectroscopic characterization of oxide electrode materials for high-energy density Li-ion batteries, in "***Portable and Emergency Energy Sources***" edited by Z. Stoynov and D. Vladikova. EU sponsored book (2007).

**Reviewer and Editorial Services**

1. Journal of Applied Physics

2. Applied Physics Letters

3. Journal of the American Chemical Society

4. Chemistry of Materials

5. Surface and Interface Analysis

6. Materials Science and Engineering B

7. Optical Engineering

8. Applied Surface Science

9. Ionics

10. Journal of the Electrochemical Society

11. Electrochemical and Solid State Letters

12. Materials Chemistry and Physics

13. Vacuum

14. Thin Solid Films

15. Journal of Vacuum Science and Technology A and B