CURRICULUM VITAE

NAME: Dr. Ramesh Chandra
Professor, Institute Instrumentation Centre
Indian Institute of Technology Roorkee, Roorkee –247 667 (India)
Tel. +91 1332-285743, **Cell:** 9897031912, **Fax**: 01332-273560
Email: ramesh.chandra@ic.iitr.ac.in, ramesfic@gmail.com,
Website: https://www.iitr.ac.in/centers/IIC/pages/People+_en_Faculty__en_.html

DATE OF BIRTH: April 24, 1964

EDUCATIONAL QUALIFICATIONS:

Ph. D (Physics)**:** National Physical Lab. New Delhi and I. I. T. Delhi in1993
M. Sc (Physics)**:** A.M.U.Aligarh in 1987

TEACHING & RESEARCH EXPERIENCE: **27 Years**

1. Professor at I.I.T. Roorkee since April 2014
2. Associate Professor at I.I.T. Roorkee (2007-2014)
3. Assistant Professor at I.I.T. Roorkee (2004-07)
4. Reader at C.C.S. University, Meerut (2002-04)
5. Lecturer at Guru Nanak Dev University, Amritsar (1994 – 02)
6. Research Associate at N.P.L., New Delhi (1993-94)

AWARDS AND RECOGNITION'S:

1. **Dr. A.N. CHATTERJEE** memorial award on **High-Tc Squids** in 1990.
2. **Visiting Scientist** at T.I.F.R, Mumbai 1997 to 1999
3. **Visiting Associate** at IUAC, New Delhi for 3 years (2002-04)
4. **Commonwealth fellowship** at **University of Cambridge, UK** (2002 – 03).
5. **INSA Fellowship** to visit **University of Cambridge, UK** (2009 – 10).
6. **INSA Fellowship** to visit **Poland Academy of Science** (June 07-28, 2019).

1. **Organized Short-Term course (QIP):** Advances in Characterization techniques on functional Nanomaterials: 2010, 2012, 2014, 2015, 2017, 2019
2. **Conducted a workshop** December 12-16, 2011 for NTS Awardees sponsored by NCERT.
3. **Organized Several Training program** on Analytical facilities for Pre-Ph.D students

ORCID ID: https://orcid.org/0000-0002-4529-2217
Google Scholar Citations:
https://scholar.google.co.in/citations?hl=en&user=VOwGOJQAAAAJ

Press Release for H_2 Sensor: Scientists design silicon based nanocauliflowers to detect hydrogen. Research Matters, 2017, https://researchmatters.in/article/scientists-design-silicon-based-nano-cauliflowers-detect-hydrogen

I have taught the following course to UG & PG students through Department of Metallurgical and Materials Engineering & Centre of Nanotechnology

1. **UG: MT-201A** Materials Science & Engineering (Electronic & Magnetic Materials)
2. **PG: NT-501** Nanoscale Materials, **NT-512** Fabrication of Nanostructured Material

ADMINISTRATIVE EXPERIENCE:

Head, IIC for 5 Years (2012 - 2016) & January 2020----Contd.
Head, DST SAIF (EPMA) Facility (Since 2014 ..Contd)
Staff advisor for hobbies club for 3 years (2009-12)
I have been **Staff Advisor of Sports Council** of IIT Roorkee for 6 Years (2010-16)
Chairman Safety Committee of the Centre

Member Technical Expert Committee of outside organizations

1. Instruments Research & Development Establishment (IRDE), DRDO, Dehradun
2. Solid State Physics Lab. (SSPL), DRDO, New Delhi
3. Terminal Ballistic Research Lab. (TBRL), DRDO, Chandigarh
4. Indian Institute of Petroleum (IIP) CSIR, Dehradun
5. Defence Materials and Stores Research and Development Establishment, Kanpur
6. Indian Oil Corporation Limited (IOCL), Faridabad
7. Dr. B R Ambedkar National Institute of Technology (NIT), Jalandhar
8. Indian Institute of Technology (BHU) Varanasi
9. Motilal Nehru National Institute of Technology Allahabad
10. Inter University Accelerator Centre (IUAC), New Delhi

Attended workshop/Training Course on, "POLICY FOR SCIENCE AND SCIENCE FOR POLICIES', December 15-19, 2014, NIAS Bangalore for senior Executives.

Regular Reviewer of the following Publishers;

Elsevier, American Institute of Physics, Springer etc

1. Applied Physics Letters
2. Applied Surface Science
3. International Journal of Hydrogen Energy
4. Thin Solid Films
5. Sensors & Actuators: B. Chemical,
6. Materials and Design
7. Journal of Magnetism and Magnetic Materials
8. Surface & Coatings Technology
9. Journal of applied physics
10. Vacuum
11. Journal of Alloys & Compounds
12. Materials Science & Engineering B
13. Solid State Communication
14. Applied Optics
15. I Journal of Hydrogen Energy
16. Optics and Laser Technology
17. Materials Chemistry and Physics

SPONSORED PROJECTS: (COMPLETED) As PI

S.N	Duration	Agency	Title of the Project	Grant (Lacs)
1.	2005-07	DST	Study of Optical & Mech prop. of Nanomaterials	Rs. 24.00
2.	2006-09	CSIR	Optical Characterization of Nanomaterials For Device Application	Rs. 14.00
3.	2006-08	DRDO	Deposition of Scratch Resistant Nano structured Optical Coating by Sputtering	Rs. 10.00
4.	2006-09	DST	Super hard Nanocomposit coatings …	Rs. 95.00
5.	2008-09	DAE	Corrosion Resistant… Structural Materials	Rs. 17.00
6.	2008-10	DRDO	Fe-SiC Nanostructured films by PVD…	Rs. 10.00
7*	2008-12	DIT	MEMS & Q.dot modified PV Cell..	Rs. 484.00
8.	2009-11	DRDO	Optically transparent hard coatings …..	Rs. 28.75
9.	2009-12	CSIR	Nanostructured hydrophobic Coatings…	Rs. 16.10
10.	2010-13	CPRI	Development of Silt Erosion Resistant…	Rs. 163.13
11.	2012-14	DRDO	Synthesis and Characterization of Metal oxide Nanoparticles.....	Rs. 12.46
12.	2014-16	DRDO	Development of SiC thin films for electronic applications	Rs. 20.70
13.	2014-17	DRDO	Absorption studies of laser light in nanoparticles for laser initiation of high explosives	Rs. 38.02
14.	2016-17	DRDO	Saline water protective antireflective coatings on Si Substrate	Rs. 9.715
Total Grant				**Rs. 942.875(lacs)**

(IN PROGRESS)

S.N	Date	Agency	Title of the Project	Grant (Lacs)
1.	2017-20	CSIR	Studies on Magnetic Coupling ……..induced by H_2 Charging	Rs. 20.32
2.	2018-21	DRDO	Development of Corrosion resistant hydrophobic coatings for ….. under saline water applications	Rs. 79.24
3.	2018-20	SSPL DRDO lab	Fabrication & Characterization of MoS_2 Films by PVD	Rs. 9.18
4.	2019-22	DST	Fabrication of High Energy Density Thin film based on chip Supercapacitor Devices Using Sputtering Technique.	Rs. 95.379
5.	2020-21	CPRI (Under review)	Fabrication of High Energy Density Supercapacitor Devices with Enhanced Capacitive Retention Using Physical Vapour Deposition Methods	Rs. 66.56
Total Grant				**Rs. 204.119 lacs**

CONSULTANCY PROJECTS:

2009	NTPC Greater NOIDA Hydrophobic coatings on HV Insulators	**Rs. 6.20 lacs**
2013	ASAHI INDIA GLASS LTD Roorkee Golden Color Coatings	**Rs. 2.50 lacs**
2014	Technical diligence of Attero recycling Pvt. Ltd Roorkee	**Rs. 2.00 lacs**
2014	Technical study of high speed ffs rotary machine with single track	**Rs. 2.00 lacs**
2015	Characterization of catalyst samples	**Rs. 0.88 lacs**
2015	Pectographic analysis of silt & water of Shana HEP, PSPCL	**Rs. 1.80 lacs**
2015	Development of new multi-layer coating ….	**Rs. 1.25 lacs**
2016	Optical characterization of Poly film….	**Rs. 4.00 lacs**
2017	Synthesis of hydrophobic coatings on glass supplied by AIS Roorkee	**Rs. 3.00 lacs**
2018	Coatings & its defects analysis on Glass supplied by AIS Roorkee	**Rs. 3.00 lacs**
2019	Analysis of Glass defects supplied by AIS	**Rs. 4.50 lacs**
2019	Structural & elemental analysis of Alumina Ceramic Liner samples	**Rs. 3.00 lacs**

Established State of the art Research Laboratory at IIT Roorkee to Fabricate Thin Film based Nanostructures for various applications

Since my joining at IIT Roorkee my primary responsibility has been the procurement, maintenance and running of various state of art equipment and instruments for the development of Institute Instrumentation Centre (IIC) and thereby the Institute. These includes various XRDs, Fe-SEM, TEM, EPMA XRF, ICP-MS/MS, MPES, DTA/TGA, PPMS, SQUID Magnetometer, VSMs, NMR, EPR and LN_2 Plants.

In addition to looking after the maintenance & running of 25 Nos Central facilities at this Centre, I have **established** state of the art Nanoscience Laboratory to synthesize Nanostructured materials by PVD processes. These include ***RF/DC Magnetron sputtering*** and Multi- Chamber Excimer Laser based ***PLD*** (Lambda Physik, KrF) system with the facility to deposit Nanocrystalline powder, thin films and multilayers, heterostructures of functional nanomaterials.

Most of these facilities have been designed and developed in-house with the help of Native vendors to promote the '***Make in India'*** concept of the Country. I have also developed a homemade ***Gas sensing setup*** for the characterization of different Gas Sensors (H_2, NH_3, Cl_2, H_2S & CO_2 etc.). ***Electrochemical workstation*** for electrochemical energy storage and hydrogen-oxygen evolution studies and analysis. ***Contact angle measurement*** for measuring the contact angle and surface energy of thin films with the help of EASYDROP (Kruss). ***Impedance analyser*** to measure dielectric, capacitance and admittance as a function of frequency and voltage. These facilities have been created with the help of sponsored research grants received from various funding agencies such as Department of Science & Technology (DST), Council of Scientific and Industrial Research (CSIR), Defense Research and Development Organization (DRDO), Department of Atomic Energy (DAE) and Central Power Research Institute (CPRI). In-addition to work on the sponsored research projects, I have been working with the local industries namely Attero Recycling Pvt Ltd, Roorkee, Asahi India Glass Ltd, Roorkee, BMW Steels Ltd., Dehradun to help them in their respective process development. I have completed **12 Consultancy Projects** related to various industries.

Organized several National Workshops & Training programs for one-week duration at IIT Roorkee related to synthesis and characterization of Nanomaterials.

Filed a Patent: GROWTH OF CUPROUS OXIDE NANOWIRES WITH TOP LAYER OF NOBLE METAL
Inventors: VIPIN CHAWLA, SUNITA MISHRA, ARVIND KUMAR, RAMESH CHANDRA, NEHA SARDANA
PATENT APPLICATION NO. 201811032673
FILING DATE. 31/08/2018

BROAD AREAS OF RESEARCH:

1. *Nanostructures for energy conversion and catalysis*
2. *Super capacitors for energy storage*
3. *Development of Gas Sensors (H_2, CO, Cl_2, NH_3 etc.)*
4. *Study of Hydrogen effects on magnetic nanostructured coatings*
5. *We have developed an expertise to fabricate high quality films by sputtering of SiC for high temperature electronics & other harsh environment applications.*
6. *Development of Wear & Corrosion Resistant Coatings on Structural Materials*
7. *Synthesis & characterization of ordered magnetic nanostructures*

RESEARCH GUIDANCE: I am regularly supervising Graduate & Postgraduate students for their dissertations at the Centre. **26 Ph.D**. and **18 M. Tech/Phil** dissertations have been completed. **12 Ph.D** dissertations are in progress. In addition, **4 Post-Doctoral Fellows** are also working in my group.

Research Publications in Refereed Journals: **207**,
Presented in National/International **Conferences: 115**
Delivered several Invited Talks at various National/International Conferences/Workshops across the Globe.

Professional referees with whom I have interacted in the past:

(1) Prof. T P Singh, Distinguished Biotechnology Research Professor
Department of Biophysics,
All India Institute of Medical Sciences, New Delhi-110 029
Email: tpsingh.aiims@gmail.com, Tel. 11-26588931, ***Mb: 9312249508, 9953830047***

(2) Prof. P K Jain, Director,
Indian Institute of Technology (BHU) Varanasi-221005
Tel. No.: 0542 2368106, 2368427, 2307000, ***Mb: 9897039788***
E-mail id: director@iitbhu.ac.in, pjainfme@iitr.ac.in

(3) Prof. Pratap Raychaudhuri
Department of Condensed Mater Physics
Tata Institute of Fundamental Research, Homi Bhabha Road, Mumbai-400005
Tel. No.: 022-22782201, ***Mb: 9869303774, Email: pratap@tifr.res.in,***

(4). Prof. Dinesh Kumar, Vice Chancellor
J.C BOSE University of Science and Technology,
YMCA, Faridabad -121 006, Haryana
Tel.: 0129-2310102, ***Mb: 9896246590***,
Email: vc@jcboseust.ac.in, dineshelectronics@gmail.com

(5) Dr. D Kanjila, DAE Raja Ramanna Fellow
Former Director
Inter-University Accelerator Centre (IUAC)
Aruna Asaf Ali Marg, Near Vasant Kunj
New Delhi, 110067, INDIA
Tel.: 011-24126018, 24126022, ***Mb: 9868716629***,
Email: dk@iuac.res.in, dkiuac@gmail.com,

Recent Publications:

2020

1. Effect of annealing parameters and activation top layer on the growth of copper oxide nanowires
   Vipin Chawla, Neha Sardana, Harshdeep Kaur, Arvind Kumar and **Ramesh Chandra**
   Appl. Surf. Sci. ***504*** (2020) 144369

2. MoS_2 hybrid heterostructure thin film decorated with CdTe quantum dots for room temperature NO_2 gas sensor.
   Jyoti Jaiswal, Amit Sanger, Pranjala Tiwari, **Ramesh Chandra**
   Sensors & Actuators: *B. Chemical*: *305* (2020) 127437

3. Investigation of tantalum oxynitride for hard and anti-corrosive coating application in diluted hydrochloric acid solutions
   Jignesh Hirpara, Vipin Chawla and **Ramesh Chandra**
   Materials Today Commn. ***23***, (2020) 101113

4. Bluish emission of economical phosphor h-BN nanoparticle fabricated via mixing annealing route using non-toxic precursor
   Ankit Kumar, Gaurav Malik, Rahul S Malik and **Ramesh Chandra**
   J Solid State Chemistry, *288* (2020) 121430

5. Catalyst free MnO_2 nanoflakes for Electrochemical Capacitor
   Ashwani Kumar, Ravikant Adalati, M. kausahik, Yogesh Kumar and **Ramesh Chandra**
   J. Electrochem. Soc. ***167*** *(2020) 116509*

2019

1. Co-sputtered Antibacterial and Biocompatible Nanocomposite Titania-Zinc Oxide thin films on Si substrates for Dental Implant applications
   Shreya Goel, Paritosh Dubey, R Jayaganthan, Aditya B Pant & **Ramesh Chandra**
   Maters. Technol: *Advand. Perform. Maters*. ***34*** (2019) 32-34

2. Ellipsometry study of Room Temperature Grown Highly-Oriented Anatase TiO_2 Thin Films
   Jyoti Jaiswal, Gaurav Malik, Satyendra Mourya, and **Ramesh Chandra**
   J. Electronic Materials, *48*, (2019) 1223-1234

3. Development of Pd-Pt functionalized high performance H_2 gas sensor based on silicon carbide coated porous silicon for extreme environment applications
   Satyendra Mourya, Jyoti Jaiswal, Gaurav Malik, Brijesh Kumar, **Ramesh Chandra**
   Sensors & Actuators: B. Chemical: *283* (2019) 373-38

4. Effect of annealing parameters on optoelectronic properties of highly ordered ZnO thin films
   Gaurav Malik, Satyendra Mourya, Jyoti Jaiswal, **Ramesh Chandra**
   Mates. Sci. Semicond. Processing *100* (2019) 200–213

5. Surface modification of sputter deposited γ-WO_3 film for scaled electrochromic behavior
Gaurav Malik, Satyendra Mourya, Jignesh G. Hirpara**, Ramesh Chandra**
Surf. & Coat. Technol. ***375*** (2019) 708–714

6. Influence of barrier inhomogeneities on transport properties of Pt/ MoS_2 Schottky barrier j
Neetika, Sandeep Kumar, Amit Sanger, Ashish Kumar, K. Asokan, **Ramesh Chandra**, V.K. Malik
J. Alloys. Comps. ***797***, (2019) 582-588

7. Hierarchal growth of MoS2@CNT heterostructure for all solid-state symmetric supercapacitor: Insights into the surface science and storage mechanism
Pranjala Tiwari, Jyoti Jaiswal, **Ramesh Chandra**
Electrochimica Acta, ***324*** (2019) 134767

8. Effect of sputtering process parameters on structural and optical properties of CdS thin films
Ashwani Kumar, Vipin Kumar, **Ramesh Chandra** and Yogendra K Gautam
Mater. Res. Express, ***6*** (2019) 106448

9. Optical and electrical properties of highly ordered α-, γ- and α + γ-MnS films deposited by reactive sputtering technique
Pranjala Tiwari, Jyoti Jaiswal, **Ramesh Chandra**
J. Appl. Phys. **126**, (2019) 213108

10. Tantalum Oxide Thin Film on a Pt- Decorated Glass Substrate for pH-Sensing Application of Drinking Water,
J.G. Hirpara & **Ramesh Chandra**
Integrated Ferroelectrics, ***202***, (2019) 13-19,

2018

1. Thickness dependent interfacial magnetic coupling in $La_2NiMnO_6/LaMnO_3$ multilayers
Amit Kumar Singh, Samta Chauhan, **Ramesh Chandra**
J. Magn. Mag. Materials, ***448,*** (2018)180-185

2. Structural and optical characteristics of in-situ sputtered highly oriented 15R-SiC thin films on different substrates,
Satyendra Mourya, Jyoti Jaiswal, Gaurav Malik, Brijesh Kumar, **Ramesh Chandra**
J Appl. Phys, ***123,*** (2018) 023109

3. Fabrication of porous Si filled Pd/SiC nanostruct films for high performance H_2 gas sensor
Arvind Kumar, Ashwani Kumar, **Ramesh Chandra**
Sensors & Actuators: B. Chemical ***B 264*** (2018) 10-19

4. Tunable optical properties of plasmonic Au/Al_2O_3 nanocomposite thin films analyzed by spectroscopic ellipsometry accounting surface characteristics
Jyoti Jaiswal, Gaurav Malik, Satyendra Mourya, and **Ramesh Chandra**
J Optical Society of America A, ***35*** (2018)740-747

5. Evaluation of Nanocrystalline Hafnium Nitride Coating Exposed to Molten Uranium
A. Ravi Shankar, Vipin Chawla, P. Venkatesh, **Ramesh Chandra**, U. Kamachi Mudali
Surface Engineering, ***34***, (2018) 547–553

6. One Step Sputtered Grown MoS_2 Nanoworms Binder Free Electrodes for High Performance Supercapacitor Application
Neetika, Amit Sanger, Vivek Kumar Malik, **Ramesh Chandra**
I. J. Hydrogen Energy, *43*, (2018) 11141-49

7. Role of the Substrate on Photophysical Properties of Highly Ordered 15R-SiC Thin Films
Satyendra Mourya, Jyoti Jaiswal, Gaurav Malik, and **Ramesh Chandra**
J Elec Materi, *16* (2018) 5259

8. Microstructural & morphological studies on Co doped ZnS diluted magnetic semiconductor thin films
Shiv P. Patel, J.C. Pivin, G. Maity, R. P. Yadav, **R. Chandra**, D. Kanjilal, L. Kumar,
J Mat. Sci. Materi Electronics, ***29*** (2018) 13541–13550

9. Hydrogenation and dehydrogenation of hydrophobic Pd-capped vertically aligned porous Ti nanoflake thin film
Jyoti Jaiswal, Gaurav Malik, Satyendra Mourya, and **Ramesh Chandra**
JOM, *70* (2018) 2179-2184

10. Structural transformation, Griffiths phase and metal-insulator transition in polycrystalline $Nd_{2-X}Sr_XNiMnO_6$ (x = 0, 0.2, 0.4, 0.5 and 1) compound
Amit Kumar Singh, P. Balasubramanian, Ankita Singh, M. K. Gupta, **Ramesh Chandra**
J.Phys. Cond Matr *30* (2018) 355401

11. Phase-dependent Structural and Electrochemical Properties of Single Crystalline MnS Thin Films deposited by DC Reactive Sputtering
Pranjala Tiwari, Gaurav Malik and **Ramesh Chandra**
J Applied Physics 124, (2018) 195106

12. Effect of annealing temperature and CdCl2 treatment on the photo-conversion efficiency of CdTe/Zn0.1Cd0.9S thin film solar cells
Singhal, Sonal; Chawla, Amit Kumar; Gupta, Hari Om, **Ramesh Chandra**
Bull. Mater. Sci. 41, (2018) 159

13. Nanostructured Hafnium Oxide Thin films for Sensing CO: An Experimental Investigation
Dave, V.; Mishra, P. K.; **Chandra, R**.
Materials Today: Proceedings 5 (2018) 23286–23292

2017

1. Antisite disorder induced spin glass exchange bias effect in Nd_2NiMnO_6 epitaxial thin film
Amit Kumar Singh, Samta Chauhan, **Ramesh Chandra**
Appl. Phys. Lett., *110* (2017) 102402 (I.F. – 3.14)

2. Influence of subs. induced strain on B-site ordering & mag. Prop. of Nd_2NiMnO_6 epitaxial films
Amit K Singh, Samta Chauha, P Balasubramanian, Saurabh K Srivastava, **Ramesh Chandra**,
Thin Solid Films, *629* (2017) 49-54 (I.F. – 1.76)

3. Experimental evidence of spin glass and exchange bias behavior in sputtered grown α-MnO_2 nanorods
Ashwani Kumar, Amit Sanger, Amit Kumar Singh, Arvind Kumar, Mohit Kumar, **Ramesh Chandra**
J. Magn. Mag. Materials, *433* (2017) 227-233

4. Thickness dependent structural and magnetic properties of Nd_2NiMnO_6 epitaxial thin films
Amit K Singh; Samta Chauhan, Ramesh Chandra,
Thin Solid Films, *625* (2017) 17-23 (I.F. – 1.76)

5. Adsorptive removal of Pb (II) ions aqueous solution using CuO synthesized by sputtering method
Monu Verma, Inderjeet Tyagi, **Ramesh Chandra**, Vinod Kumar Gupta
J. Mol. Liq., *225* (2017) 936-944

6. Palladium decorated Silicon Carbide Nanocauliflowers for highly sensitive and selective H_2 gas sensor
Amit Sanger, Pawan Kumar Jain, Yogendra Kumar Mishra, **Ramesh Chandra**
Sensors & Actuators B: Chemical, **242** (2017) 694-699. (I.F. – 4.75)

7. Single-step growth of pyramidally NiO nanostructures with improved supercapacitive properties
Ashwani Kumar, Amit Sanger, Arvind Kumar, **Ramesh Chandra**
Inter. J. Hydrogen Energy, *42*, (2017) 6080-87 (I.F. - 3.20)

8. Cavitation Erosion Behavior of Nitrogen Ion Implanted 13Cr4Ni Steel
S. Verma, P. Dubey, A. W. Selokar, D. K. Dwivedi, **R. Chandra**
Trans Indian Inst Met. *70* (2017) 957–965

9. Porous silicon filled with Pd/WO_3-ZnO composite thin film for enhanced H_2 gas-sensing performance
Arvind Kumar, Amit Sanger, Ashwani Kumar, **Ramesh Chandra**
***RSC Advances*, 7**, (2017) 39666 – 39675 (3.84)

10. Determination of optical and dispersion energy parameters of highly ordered hydrophobic ZnO thin films using spectroscopic ellipsometry"
Gaurav Malik, Jyoti Jaiswal, Satyendra Mourya, and **Ramesh Chandra**
J Appl. Phys. 122, (2017)143105

11. Enhanced Optical Absorption of Ti Thin Film: Coupled Effect of Deposition & Post-deposition Temperatures
Jyoti Jaiswal, Satyendra Mourya, Gaurav Malik, Samta Chauhan, Ritu Daipuriya, **Ramesh Chandra**
JOM, **69**, (2017) 2383

2016

1. Power Effect on Structural and Thermal Properties of Magnetron Sputtered WO_3 Nanoparticles
Monu Verma, Vinod Kumar Gupta, **Ramesh Chandra**
Advanced Science, Engineering and Medicine, **8**, (2016) 1–5

2. Sputtered Synthesis of MnO_2 Nanorods as Binder Free Electrode for High Performance Symmetric Supercapacitors
Ashwani Kumar, Amit Sanger, Arvind Kumar, **Ramesh Chandra**
Electrochimica Acta 222 (2016) 1761–1769

3. Toughness Enhancement in Zirconium-Tungsten-Nitride Nanocrystalline Hard Coatings
P Dubey, S Kumar Srivastava, **R Chandra**, and CV. Ramana
AIP Advances, 6, (2016) 075211

4. Determination of optical constants including surface characteristics of optically thick nanostructured Ti films: analyzed by spectroscopic ellipsometry
Jyoti Jaiswal, Satyendra Mourya, Gaurav Malik, Manpreet Singh, **Ramesh Chandra**
Applied Optics, *55*, (2016) 6368

5. Influence of thickness on structural, electrical and optical properties of DC sputtered Mo back contact for solar cell application,
Ashwani Kumar, Amit Sanger, Arvind Kumar, **Ramesh Chandra**
Advanced Materials Letters, **7,** (2016), 100-105

6. Removal of hexavalent chromium ions using CuO nanoparticles for water purification applications
Vinod Kumar Gupta, Inderjeet Tyagi, Monu Verma, **Ramesh Chandra**
J. Colloid Interface Science*, 478, (2016) 54-62*

7. An efficient α-MnO_2 nanorods forests electrode for electrochemical capacitors with neutral aqueous electrolytes
Ashwani Kumar, Amit Sanger, Arvind Kumar, **Ramesh Chandra**
Electrochimica Acta, 220, (2016)712-720. (I.F. - 4.80)

8. Silicon Carbide Nano-Cauliflowers for Symmetric Supercapacitor Devices
Sanger, Amit; Kumar, Ashwani; Kumar, Arvind; Mishra, Yogendra; **Chandra, Ramesh**
Ind. Eng. Chem. Res. **55** (2016) 9452−9458

9. Performance of High Energy Density Symmetric Supercapacitor based on Sputtered MnO_2 Nanorods
Kumar Ashwani, Sanger, Amit; Kumar, Arvind; Kumar, Yogesh; **Chandra Ramesh**
ChemistrySelect, *1*, (2016) 3885 – 3891

10. Fast response ammonia sensors based on TiO_2 and NiO nanostructured bilayer thin films
Arvind Kumar, Amit Sanger, Ashwani Kumar, **Ramesh Chandra**
RSC Adv., **6** (2016) 77636-77643 (3.84)

11. A fast response/recovery of hydrophobic Pd/V_2O_5 thin films for hydrogen gas sensing
Amit Sanger, Ashwani Kumar, Arvind Kumar, **Ramesh Chandra**
Sensors & Actuators, Chemical B: **236** (2016) 16-26

12. Enhanced optical absorbance of hydrophobic Ti thin film: role of surface roughness
Jyoti Jaiswal, Amit Sanger, Ashwani Kumar, Satyendra Mourya, Samta Chauhan,
Ritu Daipuriya, Manpreet Singh and **Ramesh Chandra**
Adv. Mater. Lett. **7** (2016) 485-90

13. Highly sensitive and selective CO gas sensor based on hydrophobic SnO_2/CuO bilayer
A. Kumar, A. Sanger, A. Kumar and **R. Chandra**
RSC Advances, **6** (2016) 47178 - 47184 (3.84)

14. Study of magnetic behaviour in hexagonal-$YMn1\text{-}xFexO_3$ (x=0 and 0.2) nanoparticles using remanent magnetization curves
Samta Chauhan, Amit Kumar Singh, Saurabh Kumar Srivastava, **Ramesh Chandra**
J. Magnetism and Magnetic Materials, **414** (2016)187-193

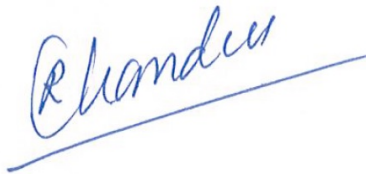
15. Highly sensitive & selective H_2 gas sensor using sputtered grown Pd decorated MnO_2 nanowalls
Amit Sanger, Ashwani Kumar, Arvind Kumar, **Ramesh Chandra**
Sensors & Actuators, Chemical B: **234** (2016) 8-14

16. Influence of antisite disorders on the magnetic properties of double perovskite Nd_2NiMnO_6
Amit Kumar Singh, Samta Chauhan, Saurabh Kumar Srivastava, **Ramesh Chandra**
Solid State Commun. 242, (2016) 74-78

17. Synthesis and characterization of magnetron sputtered ZrO_2 nanoparticles: Decontamination of 2-choloro ethyl ethyl sulphide and dimethyl methyl phosphonate
Monu Verma, **Ramesh Chandra**, Vinod Kumar Gupta
J. Environ. Chemi. Engg. 4, (2016) 219–229

18. Intrinsic Defects & Structural Phase of ZnS Nanocrystalline Films: Effects of Substrate Temperature
Shiv P. Patel, J. C. Pivin, Ramesh **Chandra,** D. Kanjilal, Lokendra Kumar,
J Mater Sci: Mater Electron, 27, (2016) 5640–5645

19. Decontamination of 2-chloro ethyl ethyl sulphide and dimethyl methyl phosphonate from aqueous solutions using manganese oxide nanostructures
Monu Verma, **Ramesh Chandra**, Vinod Kumar Gupta
J. Molecular Liquids 215 (2016) 285-292



(Dr. Ramesh Chandra)