

# **CURRICULUM VITÆ**

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## **Dr. Rajesh K. Gangwar**

Joint Director (Research)

Council of Science & Technology U.P.,

Vigyan Bhawan, 9, Nabiullah Road, Surajkund

Park, Lucknow – 226 018

Uttar Pradesh (India)

Email: [raj301082@gmail.com](mailto:raj301082@gmail.com)

[gangwar.rk@gov.in](mailto:gangwar.rk@gov.in)

Phone: +91 522 2284819

Mobile: +91 8573051401

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## **Education:**

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<b>Degree/Qualification</b>	<b>Year</b>	<b>University/Institution</b>
Ph.D. (Nanoscience)	2014	DIAT, Pune (Maharashtra)
B.Ed.	2006	CCS University, Meerut (U.P.)
M.Sc. (Physics)	2004	M.J.P. Rohilkhand University, Bareilly (U.P.)
B.Sc. (Physics, Maths.)	2002	M.J.P. Rohilkhand University, Bareilly (U.P.)

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## **Research/Teaching/Administrative Experience:**

<b>Position</b>	<b>Organization</b>	<b>Duration</b>
Joint Director (Research)	Council of Science & Technology U.P., Lucknow (U.P.)	29 Dec. 2016 to till date
Manager (R&D)	Uniphos Envirotronic Pvt. Ltd., Vapi (Gujarat)	21 Dec. 2015 to 26 Dec. 2016
Asst. Professor	Vivekananda Global University, Jaipur (Rajasthan)	01 July 2015 to 15 Dec. 2015
Asst. Professor	Suraj PG College, Mahendergarh (Haryana)	01 Sept. 2014 to 27 June 2015
Research Scholar (Ph.D.)	DIAT Pune (Maharashtra)	06 July 2009 to 04 July 2014
Physics Lecturer	SDSVMIC Meerganj, Bareilly (U.P.)	July 2006 to March 2008

## **Awards/Achievements:**

- ❖ Recognized as a reviewer for the journals such as “Mater. Sci. Engg. C”, “Drug Invention Today” and others.
- ❖ Best poster presentation award in Nanoworkshop 2015
- ❖ International Travel support from DST, Govt. of India (NanoBioMed 2013 in Italy)
- ❖ Dr. N.G. Patel prize for poster presentation in ISPTS 2012
- ❖ DIAT (DRDO) Scholarship
- ❖ CSIR-NET (LS) (Physics) 2011
- ❖ JEST (Physics) 2010
- ❖ GATE (Physics) 2009

## **Research Interests:**

- ❖ Chemical Synthesis, Phytosynthesis of Nanomaterials
- ❖ Bio-sensors, Gas Sensors
- ❖ Functionalization of Nanomaterials with Biomolecules/Drugs
- ❖ Gold Nanomaterials, Carbon Nanostructures
- ❖ Biomedical Applications
- ❖ Energy Storage/Harvesting Applications

## **Experimental Skills:**

- ❖ UV-Vis, FTIR and Raman spectroscopy
- ❖ Thermal Analysis with DSC and TGA
- ❖ FE-SEM, TEM, AFM and XRD
- ❖ Electrochemical Workstation

## Projects (ongoing/completed):

S. No.	Project Details	Amount & Funding Agency	Role
1.	Celebration of National Science Day 2018 in Uttar Pradesh	<b>Rs.12,50,000.00</b> (NCSTC, DST, Govt. of India)	Principal Coordinator
2.	Celebration of National Mathematics Day 2017 in Uttar Pradesh	<b>Rs.12,50,000.00</b> (NCSTC, DST, Govt. of India)	Principal Coordinator

## Programmes/Events Organized:

1. **“State Consultation Meet on India’s new Science, Technology & Innovation Policy”** held virtually on 29.09.2020. Vice Chancellors, Directors, Renowned Scientists from various Universities/Institutions/R&D Establishments have participated in the meet and shared their view for policy drafting. Prof. Ashutosh Sharma, secretary, DST, Govt. of India, has graced the event as a Chief Guest. (Role: Organizer)
2. **“Vigyan Utsav as part of Azadi ka Amrit Mahotsava (Theme: STI Ecosystem in Uttar Pradesh for Atma Nirbhar Bharat)”** held virtually on 13.09.2021. (Role: Organizer)
3. **“State Level National Children Science Congress–2019”** held at RPM Academy Gorakhpur during 04-06 December, 2019. 294 child scientists and 150 guide teachers/coordinators from 75 districts of U.P. have participated in the program. (Role: Programme Coordinator)
4. **“National Science Day-2019”** held at Council of Science & Technology U.P. Lucknow. (Role: Organizer)
5. Assisted in organization of many other Seminars/symposiums/workshops organized at Council of Science & Technology U.P.

## Other Activities

1. **Coordinator, “Assistance for S&T Secretariat to Uttar Pradesh”** under DST-State Science & Technology Program since August 2019.
2. **Life Member, Indian Science Congress Association (L37565)**

## Personal Details:

**Father's Name** : Shri Jamuna Prasad  
**Date of Birth** : 30<sup>th</sup> Oct. 1982  
**Gender** : Male  
**Marital Status** : Married  
**Languages known** : English, Hindi  
**Residential Address** : C-122, Sector-H, Aliganj, Lucknow (U.P.)  
226 018  
**Permanent Address** : Village – Jam, P.O. – Meerganj, District –  
Bareilly (UP) 243 504  
**Passport No** : **J 8925466**

## References:

- 1. Dr. Rishi B. Sharma (Retd.)**  
Scientist `G`  
DRDO Bhavan, Rajaji Marg, New Delhi - 110 011  
Email: [rbsharma111@rediffmail.com](mailto:rbsharma111@rediffmail.com)  
Mob: +91 9910447893
- 2. Prof. (Dr.) Sangeeta Kale**  
Dept. of Applied Physics,  
Defence Institute of Advanced Technology, Pune - 411025.  
Email: [sangeetakale2004@gmail.com](mailto:sangeetakale2004@gmail.com); [sangeetakale@diat.ac.in](mailto:sangeetakale@diat.ac.in)  
Tel: +91 2430 4097/4091, Mob. +91 9850497712
- 3. Prof. (Dr.) Prahlada**  
Missile Scientist  
Dept. of Management Studies,  
Indian Institute of Science (IISc), Bangalore – 560 012.  
Email: [prahlada.ramarao@gmail.com](mailto:prahlada.ramarao@gmail.com)  
Mob. +91 8275065951

Date: 20.08.2022

Place: Lucknow



(Dr. Rajesh K. Gangwar)

## Research Publications:

### (a) International Journals:

1. Arun Kumar, Samrat Mukherjee, Himanshu Sharma, Umesh Kumar Dwivedi, Sunil Kumar, **Rajesh K. Gangwar**, Ravi Kant Choubey “*Role of deposition parameters on the properties of the fabricated heterojunction ZnS/p-Si Schottky diode*” **Phys. Scr.** (2022) 97, 045819.
2. Vinayak A. Dhumale, **Rajesh K. Gangwar**, N. Pande “*Importance of gold nanoparticles for detection of toxic heavy metal ions and vital role in biomedical applications*” **Mater. Res. Innovations** 2021 25(6), 354-362.
3. B. P. Singh, S. Sikarwar, K. Agrahari, S. Tripathi, **Rajesh K. Gangwar**, R. Manohar, K.K. Pandey “*Electro-optical characterization of a weakly polar liquid crystalline compound influenced polyvinyl pyrrolidone capped gold nanoparticles*” **J. Molecular Liquids** (2021) 325, 115172.
4. Aradhana Roy, P.K. Tripathi, S. Mahabaleshwara, M. Srinivasulu, **Rajesh K. Gangwar**, R. Manohar “*Optimization of the dielectric and optical parameters of 1, 2, 4-oxadiazole ferroelectric mesophase with the suspension of PVP capped gold nanoparticles*” **Optical Materials** (2020) 107 110021.
5. **Rajesh K. Gangwar**, Vinayak A Dhumale, Kalyani S Date, Prashant Alegaonkar, Rishi B Sharma and Suwarna Datar “*Decoration of gold nanoparticles on thin multiwall carbon nanotubes and their use as a glucose sensor*” **Mater. Res. Express** (2016) 3, 035008.
6. A. K. Swarnkar, Sanjay Sahare, Nikhil Chander, **Rajesh K. Gangwar**, S.V. Bhoraskar and T. M. Bhawe “*Nano Crystalline Titanium Dioxide Sensitized with Natural Dyes for Eco-Friendly Solar Cell Application*” **J. Exp. Nanoscience** (2015) 10(13), 1001-1011.
7. **Rajesh K. Gangwar**, GB Tomar, VA Dhumale, S Zinjarde, RB Sharma, S Datar “*Curcumin conjugated silica nanoparticles for improving bioavailability and its anticancer applications*” **J. Agric. Food Chem.** (2013) 61, 9632-9637.
8. **Rajesh K. Gangwar**, VA Dhumale, SW Gosavi, RB Sharma, S. Datar “*Catalytic activity of allamanda mediated phytosynthesized anisotropic gold nanoparticles*” **Adv. Nat. Sci.: Nanosci. Nanotech.** (2013) 4, 045005.
9. Vinayak A. Dhumale, **Rajesh K. Gangwar**, Suwarna S. Datar, Rishi B. Sharma “*Gold Nanoparticles Based Ultrasensitive Colorimetric Sensor for Cd<sup>2+</sup> Ions*” **Adv. Sci. Eng. Med.** (2013) 5, 409- 413.
10. **Rajesh K. Gangwar**, Vinayak A. Dhumale, Tejashree M. Bhawe, Ashwin Kale, Suresh W. Gosavi, and Rishi B. Sharma “*Synthesis of Monodispersed Silica Nanoparticles for Antireflection Coatings*” **Adv. Sci. Eng. Med.** (2013) 5, 217-222.
11. **Rajesh K. Gangwar**, Vinayak A. Dhumale, Dimple Kumari, Umesh T. Nakate, S.W. Gosavi, Rishi B. Sharma, S.N. Kale, Suwarna Datar “*Conjugation of curcumin with PVP capped gold nanoparticles for improving bioavailability*” **Mater. Sci. Engg. C** (2012) 32, 2659–2663.

12. Vinayak A. Dhumale, **Rajesh K. Gangwar**, Suwarna S. Datar, Rishi B. Sharma “*Reversible Aggregation Control of Polyvinylpyrrolidone Capped Gold Nanoparticles as a Function of pH*” **Mater. Express** (2012) 2, 311-318.
13. Vinayak A. Dhumale, **Rajesh K. Gangwar**, Preeti V. Shah, Vasant N. Bhoraskar, Imtiaz S. Mulla and Rishi B. Sharma “*Synthesis of cube-shaped gold nanostructures by electron irradiation*” **Mater. Lett.** (2011) 65, 1605-1607.

**(b) Conference Proceedings:**

1. Sumit K. Shrivastava, Asita Kulshreshtha, Shikha Srivastava, **Rajesh K. Gangwar** “*Phytosynthesis of silver nanoparticles using Plumeria Pudica floral extract*” *Materials Today: Proceedings* (2022) 62 (6), 4440-4444.
2. **Rajesh K. Gangwar**, Vinayak A. Dhumale, Arvind Kumar, Prashant Alegaonkar, R. B. Sharma and S. S. Datar “*Gold-Graphene Nanocomposite based Ultrasensitive Electrochemical Glucose Sensor*” *IEEE Xplore* (2012) 282-285.
3. Sumit Dass, **Rajesh K. Gangwar**, Sandipan M. Nalawade, Tejashree M. Bhawe, “*A Novel Optical Fiber Humidity Sensor Coated with Superhydrophilic Silica Nanoparticles*” *AIP Conf. Proc.* (2011)1391, 428-430.

**Conferences (Participation/poster/oral):**

1. Participated in “**India International Science Festival**”, “**Indian Science Congress**” and many other National/International level events/conferences
2. **Rajesh K Gangwar**, “*Bioavailability and medicinal applications of curcumin*” Indo-UK Virtual Conference on ‘Current Innovations and the Future of Therapeutic Developments’ CIFTD-2020 organized by **VIT, Vellore** (01-03 June, 2020). (**Oral Presentation**)
3. **Rajesh K Gangwar**, Subodh Srivastava, R. K. Khanna, Suwarna Datar, “*Surface modification of thin multiwall carbon nanotubes and its catalytic activity*” International Conference on Polymer Metal nanocomposites (**Nanoworkshop 2015**), **Jaipur**. (02-05 Nov. 2015).
4. **Rajesh K Gangwar**, Suwarna Datar “*Bioavailability of Curcumin: Problems and Solutions*” National Conference on Recent Engineering Trends in Energy, Environment and Ecology (**RETEEE 2014**), **RIMT Bareilly**. (27-28 Sep. 2014). (**Invited Talk**)
5. **Rajesh K. Gangwar**, Suwarna S. Datar “*Therapeutic Roles of Curcumin: Problems and Solutions*” National conference on Bioscience and Health Engineering: Current Scenario (**BHE 2014**), **DIAT Pune**. (16-17 Jan 2014).
6. **Rajesh K. Gangwar**, Vinayak A. Dhumale, Rishi B. Sharma, SN Kale, Suwarna Datar “*Improved bioavailability of curcumin by conjugation with gold and silica*”

- nanomaterials*” Second Conference on Nanotechnology for Biological and Biomedical Applications (**Nano-Bio-Med 2013**), **ICTP, Trieste, Italy**. (14-18 Oct. 2013)
7. **Rajesh K. Gangwar**, Rishi B. Sharma and Suwarna S. Datar “*Synthesis and surface functionalization of gold nanoparticles with curcumin for biomedical applications*” International Workshop on Nanotechnology and Advanced Functional Materials (**NTAFM-2013**), **NCL Pune**. (24-25 July 2013).
  8. Anupama Joshi, **Rajesh K. Gangwar**, Kalyani Date, Vinayak A. Dhumale and Suwarna Datar “*Study of electronic properties of gold nanoparticles at different pH using scanning Tunneling Microscopy/Spectroscopy*” International Workshop on Nanotechnology and Advanced Functional Materials (**NTAFM-2013**), **NCL Pune**. (24-25 July 2013).
  9. **Rajesh Gangwar**, Vinayak A Dhumale, Rishi B Sharma and Suwarna Datar “*Biosynthesis of gold nanoparticles by Allamanda flower extract and its biomedical application*” **5<sup>th</sup> Banglore Nano 2012, JNCSAR Banglore** (5-7 Dec 2012).
  10. Arvind kumar, **Rajesh K. Gangwar**, suwarna Datar, Ashutosh abhyankar and P.S. Alegaonkar “*Enhanced Pauli-spin susceptibility in Graphene-like nanocarbon sheets*” **5<sup>th</sup> Banglore Nano 2012, JNCSAR Banglore** (5-7 Dec 2012).
  11. **Rajesh K. Gangwar**, Vinayak A. Dhumale, Arvind Kumar, Prashant Alegaonkar, R. B. Sharma and S. S. Datar “*Electrochemical Glucose Sensor based on Gold-CNT Nanocomposite*” International conference on functional materials for Defence (**ICFMD-2012**), **DIAT Pune**. (18-20 May 2012).
  12. **Rajesh K. Gangwar**, Vinayak A. Dhumale, Arvind Kumar, Prashant Alegaonkar, R. B. Sharma and S. S. Datar “*Gold-Graphene Nanocomposite based Ultrasensitive Electrochemical Glucose Sensor*” International Symposium on Physics and Technology of Sensors (**ISPTS-2012**), **CMET Pune** (8-10 March 2012).
  13. **Rajesh K. Gangwar**, Vinayak A. Dhumale, Suwarna S. Datar, Rishi B. Sharma, “*Colorimetric sensing of cadmium ( $Cd^{2+}$ ) ions at nanomolar concentration using PVP capped gold nanoparticles*” Seminar on Synthesis and Applications of Functional Materials (**SAFM-2011**), **NDA Pune** (23 Sept 2011).
  14. Vinayak A. Dhumale, **Rajesh K. Gangwar**, Suwarna S. Datar, Rishi B. Sharma, “*PVP capped gold nanoparticles for reversible colorimetric pH sensing*” Seminar on Synthesis and Applications of Functional Materials (**SAFM-2011**), **NDA Pune** (23 Sept 2011).
  15. Sumit Dass, **Rajesh Kumar Gangwar**, Sandipan M. Nalawade, Tejashree M. Bhawe, “*A Novel Optical Fiber Humidity Sensor Coated with Superhydrophilic Silica*

*Nanoparticles*” An International Conference on Light (**Optics 11**), **NIT Calicut** (25-27 May 2011).

16. **Rajesh Kumar Gangwar**, Vinayak A. Dhumale, Ashwin Kale, Rishi B. Sharma, Tejashree Bhavne “*Highly monodispersed and stable silica nanoparticles for Antireflection and Superhydrophilic coatings*” International conference on Nanomaterials and Nanotechnology (**NANO 2010**), **KSRCT Tiruchengode** (13-16 Dec 2010).
17. Vinayak A. Dhumale, Preeti V. Shah, **Rajesh Kumar Gangwar**, Vasant N. Boraskar, Rishi B. Sharma “*Synthesis of cubic gold nanostructures by high energy electron irradiation*” National Seminar on Nanomaterials for Devices : Characterization and Applications (**NSM 2010**), **UoP Pune** (24-26 June 2010).