

# Brief Curriculum Vitae

**RAJ KUMAR**

updated on 11/07/2020

**Ph.D. in 2014** (Motilal Nehru National Institute of Technology Allahabad)

**M.Sc. in 1998** (I.I.T. Roorkee formally **University of Roorkee**)

**Associate Professor** (AGP-9000) in Mathematics from May 2018

Joined VBS Purvanchal Univ. as a **Lecturer** in March, 2004



**Research Interests:** Similarity transformations method, Similarity reductions and closed form solutions of nonlinear differential Equations

### **Hobbies:**

1. Gardening and striving to make lush green the VBS PU campus
2. To work for society welfare providing them free coaching/ possible financial support or making them employable through Kaushal Vikas Kendra of PU

**Current Research Focus:** My primary research interest lies in the domain of nonlinear differential equations and solving them by Similarity transformations method (STM). Some of my recent work includes the exact solutions of non linear evolution equations occurring in fluids like (3+1)-Burgers System, (2+1)- BLP system, (3 + 1)-dimensional Korteweg-de Vries Benjamin-Bona-Mahony, (3 + 1)-dimensional KP-BBM, (1+1)-coupled Drinfel'd-Sokolov-Wilson (DSW) system etc. The STM is a good technique to solve system of PDE's analytically which is based on invariance property of PDE's that leaves PDE's invariant. The invariance reduces the number of independent variables by one in PDE's.

**Thesis title:** *ON SIMILARITY SOLUTIONS OF NONLINEAR FLUID PROBLEMS*

**Academic Experience:** 16 years teaching including 2 Yrs. as Associate Professor and 14 Yrs as Assistant Professor in Department of Mathematics at V.B.S. Purvanchal University with effective from 15 March, 2004.

### **Distinctions & scholarship:**

1. Academic Career **throughout first**
2. Availed **National scholarship** during 1991-92.
3. **Distinction** in English, Science and Mathematics (10<sup>th</sup> class)
4. **Distinction** in Physics & Mathematics (12<sup>th</sup> Class)
5. **Distinction** in Mathematics (B.Sc.)
6. **Distinction** in 5 papers (M.Sc.)

### **Awards & Honours:**

1. **Second Prize** on Best poster presentation in International Conference on Recent Trends in Electrical, Electronics and Computer Science Engineering-2020 during 10-11 Jan. 2020.
2. **Outstanding Reviewer Award 2016** by Computers & Mathematics with Applications (**Elsevier**).
3. Awarded **first position** at college level in 10<sup>th</sup> class.

### **Member of selection boards of commission**

Uttar Pradesh Maadhymik Shiksha Sewa Chayan Board, Pryagraj, Uttrakhand PSC

### **National Level Achievements:**

3. Qualified **LS (Dec'2000)**, **JRF (June'2000)**, **JRF (Dec'2001)** and **LS (June'2006)** of National Eligibility Test (CSIR- UGC) in Mathematical Sciences
4. Qualified **GATE-2000** with Percentile score 96.02 and **All India Rank 30** in Mathematics
5. Qualified **GATE-2001** with Percentile score 86.61 and **All India Rank 117** in Mathematics

### Conference/workshops/lecture series/ programmes organised etc.:

1. **Convener, International Webinar** on Impact of Covid-19 on *Indian Economy: Challenges and Opportunities*, On June 09, 2020 organised by Department of Mathematics and Financial Studies
2. **Member** of Organizing Committee of a national webinar on *Intellectual Property Rights: Protection of Intellectual Property and Way Forward* during 22-23 May, 2020 and organised by Intellectual Property Rights Cell, VBS Purvanchal University Jaunpur.
3. **Convener, International Conference** on *Recent Trends in Electrical, Electronics and Computer Science Engineering-2020* during **10-11 Jan. 2020** organised by UNSIET
4. **Co-chair, an international conference** “*International Conference on Ultrasonics and Materials Science for Advanced Technology*” (ICUMSAT- 2019) during **16-18 November 2019** and jointly organised by Prof. Rajendra Singh Institute of Engineering of Physical Study and Research, VBS PU Jaunpur and Ultrasonics Society of India, New Delhi, India.
5. **Co- Convener** of **inaugural ceremony** of “कौशल विकास एवं प्रशिक्षण केंद्र” on 16/09/2019.
6. **Co- Convener** of **one day national seminar** on “विश्वविद्यालयीय शिक्षा की स्वायत्तता” on **14 August 2019**.
7. **Convener of National seminar** entitled “*Samsamyik Pridrasya men Ekatm Manavvad*” on 22th September, 2018 on the occasion of inaugural day of Pt. Deen Dayal Shodh Peeth and organized by V.B.S. Purvanchal Univ. Jaunpur.
8. **Convener** of a **National seminar** entitled “*Ekatm Manavdarshan ka Yugbodh* (एकात्म मानव दर्शन का युगबोध)” on **25<sup>th</sup> September, 2019** in the campus of V.B.S. Purvanchal Univ. Jaunpur.
9. **Convener** of a **National workshop** entitled “*Growth of Science & Technology in the Campus of Purvanchal University (GSTCPU-2017)*” during 8-10<sup>th</sup> September, 2017.
10. **Convener of Workshop** entitled “*Communication Skills*” organized by V.B.S. Purvanchal University, Jaunpur during 17-18<sup>th</sup> September, 2016 for all students of campus.
11. **Convener** of Lecture series entitled “**Numerical Techniques and Programming in MATLAB**” during 22-28<sup>th</sup> July, 2016 for UG students.
12. **Convener** of Workshop “**Numerical Computation Using MATLAB**” during 26-30 November, 2015 for all CSE/IT students of campus.
13. **Convener** of Workshop on “**Better Engineer**” during 10-13 November, 2010.
14. **Convener and Co Convener** of ‘**National Science Day (NSD-2014 to 2017)**’ organized on the occasion of **National Science day** 28 Feb. 2014, 2015, 2016, 2017, 2018, 2019, 2020
15. **Co Convener** of “**National Youth Day**” celebration on 12<sup>th</sup> January, 2019 on the occasion of 146<sup>th</sup> Jubilee of Swami Vivekanand in the campus of V.B.S. Purvanchal Univ. Jaunpur.
16. **Co Convener** of “**मतदाता जागरूकता अभियान**” in the V.B.S. Purvanchal University, Jaunpur campus on 18<sup>th</sup> Feb., 2017



- [1]. On Similarity Solutions of Zabolotskaya-Khokhlov Equation, with Mukesh Kumar and Anshu Kumar, *Computers & Mathematics with Applications (Elsevier)*, 68, 2014, 454-463. **Citations 30, Impact factor 1.861, SCI Total Citations 32, Self Citations 6**
- [2]. On New Similarity Solutions of the Boiti-Leon-Pempinelli System, with Mukesh Kumar, *Communications in Theoretical Physics (IOP Ltd.)*, 61(1), 2014, 121-126, **Impact factor 1.178, SCI, Total Citations 15, Self Citations 6**

**2013:**

- [1]. Some Soliton Solutions of Non linear Partial Differential Equations by Tan-Cot Method, with Mukesh Kumar & Anshu Kumar, *IOSR–Journal of Mathematics*, 6, 2013, 23-28, **Non-SCI, Total Citations 11, Self Citations 1**
- [2]. On Some New Exact Solutions of Incompressible Steady State Navier-Stokes Equations, with Mukesh Kumar, *Meccanica (Springer)*, 49, 2014, 335-345, **Impact factor 2.211, SCI Total Citations 20, Self Citations 1**

**2007:**

- [1]. Digital Video Authentication for forensic Application, with Saurabh Upadhyay and Sanjay Singh, *Atmbohdh*, 4(1), 2007, 54-60 UGC listed **Total Citations 0**

**Research Guidance:**

**04 (ongoing)** Mr. Saurabh Kumar Singh, Mr. Avnish Kumar,  
Mr. Kripa Shankar Pandey, Mr. Ravi Shanker Verma

**02 (Completed)** Atul Kumar Tiwary, Digvijay Tanwar (completed under by my assistance in supervision)

**Current Sponsored Projects: 01****Member of Editorial boards as Reviewer in SCI Journals:**

1. Proceedings of the National Academy of Sciences, India Section A: Physical Sciences (Springer Publisher)
2. The Asian Journal of Mathematics (A Journal by the International Press)
3. Computers & Mathematics with Applications (Elsevier Publisher)
4. Physia A: Statistical Mechanics and its Applications (Elsevier Publisher)
5. *Waves in Random and Complex Media* (formerly *Waves in Random Media*)

**No. of Invited Lectures 16 and conference papers presented is 12**

**No. of Courses/Summer Institute/Training programme attended: 22**

**Membership of Professional Bodies/Societies etc.**

1. Life Member Ship of Indian Mathematical Society
2. Annual membership of World Physics Association (WPA) From Nov. 2015 to Dec. 2016

**Portfolio at V.B.S. Purvanchal University, Jaunpur**

1. **Coordinator**, Green Campus Incharge
2. **Incharge**, Media Cell, VBS PU Campus
3. **Member**, IPR Cell
4. **Nodal officer**, Kaushal Vikas & Prashikshan Kendra at campus from last 10 months
5. **Chief Warden** from last three years
6. **Member of Academic Council** from last two years
7. **Coordinator**, Purvanchal University Combined admission test (PUCAT)-2019,2016, member PUCAT 2017-18
8. **Assistant Dean of Students Welfare** for two Yrs (2014-2016)

9. **Programme Officer:** Unit-III of NSS for 2 Yrs (2014-2016)
10. **Head, Department of Mathematics** during last 13 yrs (2004-2011, 2014-till date)
11. **Convener, Board of Studies,** Department of Mathematics during last 13 yrs (2004-2011, 2014-till date)
12. **Coordinator, Technical cell** (Result preparation cell for the whole campus courses),
13. **Coordinator, B. Tech. OBC Scholarship Cell,** for 5 yrs (2005-2010)
14. **Organising Secretary, Sports meet of campus** from 2017 to July 2020.
15. **Assistant Proctor from last 13 years**
16. **Member of internal screening committee** for regular teacher's post applications.
17. **Dy. Coordinator,** UGC Sponsored **Remedial Coaching** for SC/ST/OBC students, etc. for 2 yrs.
18. **Dy. Coordinator,** Academic Activities of B.Tech First year from 2014 till date.
19. **Coordinator, Internet maintenance committee**
20. **Member of E-tendering committee, Infrastructure committee, Auction of disposable materials committee**  
and some others

### **Tasks for University campus and social Development**

1. As a Coordinator of a Free Coaching "**Prerna**" which is running in nearby villages of the V.B.S. Purvanchal University, Jaunpur to upgrade the knowledge of financially weak children w.e.f. Sept. 2014, I have been thoroughly involved there to improve extension activity of the campus.
2. Continuously striving to make lush green the campus
3. I actively participated as Deputy Coordinator of a committee constituted for making proposal and implementation for “**स्वच्छ भारत अभियान**” of Govt. of India in the locality of the VBS Purvanchal University, Jaunpur from 29/05/2015 to April 2016.

**(Dr. Raj Kumar)**