Dr. Rakesh Kumar

CONTACT INFORMATION

Current Affiliation:

Professor
Department of Mathematics
Punjabi University, Patiala-147 002, India

Previous Affiliation:

Professor (Associate)
Head of the Department (08 June, 2018–07 June, 2021)
Department of Basic and Applied Sciences
Punjabi University, Patiala-147 002, India

Emails: rakesh_bas@pbi.ac.in; dr_rk37c@yahoo.co.in
Contact No. +91-98154-30944

PERSONAL DETAILS

Father's Name:	Sh. Mohan Lal
Mother's Name:	Smt. Bhagwanti
Spouse's Name:	Dr. Rachna Rani
Nationality:	Indian
ResearchGate Profile:	www.researchgate.net/profile/Rakesh-Kumar-51
ORCID Id:	https://orcid.org/0000-0001-8896-7539/
SCOPUS Id:	24759245100
Web of Science Researcher Id:	AAN-7511-2020

RESEARCH INTERESTS

- Differential geometry with indefinite metrics.
- Geometry of null submanifolds and hypersurfaces of semi-Riemannian manifolds.
- Geometry of indefinite Golden and Statistical manifolds.
- Null hypersurfaces of Lorentzian manifolds with Rigging vector field
- Study of submersions and Riemannian maps

EDUCATION

- M.Sc.(Mathematics) with Gold Medal, from Punjabi University, Patiala, India, in April 2002.
- UGC-CSIR (NET) held on 22-06-2003 under Roll No. 403560 vide CSIR letter no. F.No.10-2(5)2003(I)-EU.II dated 01-11-2003.
- Ph.D. degree under the supervision of Dr. R.K. Nagaich, Department of Mathematics, Punjabi University, Patiala with title **Geometry of manifolds with indefinite metrics**, in December 2008.

AWARDS	• **Professor H. P. Dikshit Memorial Award-2018** for contributions to mathematics by International Academy of Physical Sciences during 23rd International Conference of International Academy of Physical Sciences, November 16–18, 2018, organized by Nepal Academy of Science and Technology, Kathmandu, Nepal.

AWARDS

- Professor H. P. Dikshit Memorial Award-2018 for contributions to mathematics by International Academy of Physical Sciences during 23rd International Conference of International Academy of Physical Sciences, November 16–18, 2018, organized by Nepal Academy of Science and Technology, Kathmandu, Nepal.

- Adarsh Vidya Saraswati Rashtriya Puraskar for contribution in Mathematics by the Global Management Council, Glacier Journal Research Foundation, Ahmedabad, India, on 02 March, 2018.

- Outstanding Faculty Award for the contribution in the field of Differential Geometry by the Board of Management of the Venus International Foundation on July 9, 2016 at Chennai, India.

- Young Geometer Award by The Tensor Society, India in the International Conference on Differential Geometry and its Applications, organized by the Department of Mathematics, Jadavpur University, Kolkata, during 16-18 Oct., 2014.

- Best Paper Presentation Award in International Conference on Mathematical Modeling and Statistical Analysis organized by Department of Mathematics, JC DAV College, Dasuya, Hoshiarpur, Punjab on September 30, 2014.

- Young Geometer Award by The Tensor Society, India in an International Conference on Differential Geometry and Relativity, organized by Department of Mathematics, Aligarh Muslim University, Aligarh, during 20-23 Nov., 2012.

- Junior Research Fellowship (JRF) by UGC-CSIR for pursuing Ph.D.

- Gold Medal for ranking first in M. Sc. Examination at Punjabi University, Patiala in April 2002.

TRAVEL GRANTS

- Travel Grant by International Mathematical Union in collaboration with the International Congress of Mathematicians (ICM) Organizing Committee to attend ICM-2018 at Rio de Janeiro, Brazil, during 01–09 August, 2018.

- Travel Grant with Letter No. ITS/812/2017-18 dated May 24, 2017 by Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Government of India, to deliver an invited talk in the conference Differential Geometry, organized by Institute of Mathematics of the Polish Academy of Sciences at The Mathematical Research and Conference Center in Bedlewo, Poland, during June 18-24, 2017.

- Travel Grant by Abdus Salam International Centre for Theoretical Physics, Trieste, Italy to attend School and Workshop on Complex Analysis, Geometry and Dynamics, at ICTP, Italy from September 21 to October 3, 2015.

- Travel Grant by International Mathematical Union in collaboration with the International Congress of Mathematicians (ICM) Organizing Committee to attend ICM-2010 at Hyderabad during 19-27 August, 2010.

HONORS

- Member of Scientific Committee of 18th International Geometry Symposium to be held at Inonu University, Malatya, Turkey, during July 12–13, 2021.

- Member of Scientific Committee of 3rd Ege Geometric Day to be held at Ege University, Izmir, Turkey, on June 28, 2021.

- Attended Virtual Heidelberg Laureate Forum, organized by Heidelberg Laureate Forum Foundation, Heidelberg, Germany, during September 21–25, 2020.
- Member of Scientific Committee of 16th International Geometry Symposium to be held at Manisa Celal Bayar University, Manisa, Turkey, during July 4–7, 2018.

TEACHING EXPERIENCE

- Working as a Regular Professor (Mathematics) in the Department of Mathematics, Punjabi University, Patiala, from 1st April, 2022 to till date.
- Worked as a Regular Associate Professor (Mathematics) in the Department of Basic and Applied Sciences, Punjabi University, Patiala, from 7th June, 2017 to 31st March, 2022.
- Worked as a Regular Assistant Professor (Mathematics) in the Department of Basic and Applied Sciences, Punjabi University, Patiala, from 6th June, 2005 to 7th June, 2017.
- Worked as a Guest Faculty in Department of Statistics, Panjabi University Patiala for teaching Calculus, Vector Analysis and Geometry to B.Sc. students from 2006 to 2010.
- Worked as a Guest Faculty in Department of Mathematics, Panjabi University Patiala for teaching Discrete Mathematics to M. Sc. students from Jan. 2011 to May 2011.

ADMINISTRATIVE AND ACADEMIC RESPONSIBILITIES

- Member of Board of Post Graduate Studies in Mathematics, Punjabi University, Patiala from 29th April, 2023 to 31st December, 2024.
- Member of Faculty of Physical Sciences, Punjabi University, Patiala from 18th April, 2023 to 11th January, 2025.
- Member of Research Award Committee of Faculty of Physical Sciences, Punjabi University, Patiala from 12th January, 2023 to 11th January, 2025.
- Co-coordinator for Criterion-II (Teaching-Learning and Evaluation) for NAAC Accreditation, to be held in February, 2023.
- Member of Faculty of Physical Sciences, Punjabi University, Patiala from 3rd September, 2021 to 11th January, 2023.
- Member, A.C.D., Department of Basic and Applied Sciences, Punjabi University, Patiala, from 1st May, 2021 to 30th April, 2022.
- Head, Department of Basic and Applied Sciences, Punjabi University, Patiala, from 8th June, 2018 to 7th June, 2021.
- Member of Faculty of Physical Sciences, Punjabi University, Patiala from 1st February, 2019 to 11th January, 2021.
- Member of Faculty of Engineering and Technology, Punjabi University, Patiala from 17th December, 2018 to 11th December, 2020.
- Member of Academic Council, Punjabi University, Patiala from 5th November, 2019 to 26th July, 2020.
- Member of Board of Studies in Basic and Applied Sciences, Punjabi University, Patiala, from 2nd August, 2018 to 15th July, 2020.

- Member of Faculty of Physical Sciences, Punjabi University, Patiala from 4th July, 2018 to 11th January, 2019.
- Member of Board of Studies in Basic and Applied Sciences, Punjabi University, Patiala, from 11th June, 2018 to 15th July, 2018.
- Member, A.C.D., Department of Basic and Applied Sciences, Punjabi University, Patiala, from 11th June, 2018 to 30th April, 2019.
- Member of Board of Studies in Basic and Applied Sciences, Punjabi University, Patiala, from 21th July, 2014 to 15th July, 2016.
- Member of Faculty of Engineering and Technology, Punjabi University, Patiala from 18th November, 2013 to 11th December, 2014.

REFERENCES FOR RECOMMENDATION

- Prof. Zafar Ahsan
  Department of Mathematics, Aligarh Muslim University, Aligarh, India
  Email: zafar.ahsan@rediffmail.com
  Contact No. +91- 98973-99337

- Prof. Uday Chand De
  Department of Pure Mathematics, University of Calcutta, Kolkata, India
  Email: uc_de@yahoo.com
  Contact No.: +91-94335-33873

- Prof. Sudhir Kumar Srivastava
  Department of Mathematics and Statistics, Deen Dayal Upadhyaya University, Gorakhpur. India
  Email: sudhir.mathstat@ddugu.ac.in; sudhirpr66@rediffmail.com
  Contact No. +91- 98895-05305; +91-94153-03852

MEMBERSHIP OF RESEARCH BODIES

- Affiliate member of American Mathematical Society, America, from 1st January, 2019 to 31th December, 2023. Membership Code KMRKXC.
- Life member of Punjab Academy of Sciences, India. Membership No. 1042.
- Life member of International Association of Mathematical Physics, Denmark. Membership No. 1851.
- Life member of The Tensor Society, India, Membership No. 72.
- Life member of International Association of Engineers, Hon Kong, Membership No. 113515.
- Life member of Ramanujan Mathematical Society, India, Membership No. 1088.
- Senior member of the International Association of Computer Science and Informational Technology, Singapore. Membership No. 80345626.
- Department Teacher In-Charge of The National Programme on Technology Enhanced Learning (NPTEL) Local Chapter, Punjabi University, Patiala.

EDITOR/ REVIEWER OF THE JOURNALS

- Reviewer of Mathematical Reviews, Mathematical Reviews Author Id: 774812.
- Joint Editorial Secretary of Journal of The Tensor Society, India.

1. Mrs. Reetu
   Topic: A Study of Geometric Aspects of Riemannian Maps
   Status: Registered.

2. Mr. Saurav Verma
   Topic: On the Geometry of Statistical Manifolds
   Status: Registered.

3. Mr. Amrinder Pal Singh
   Topic: Geometry of Null Hypersurfaces of Lorentzian Manifolds with Rigging Technique
   Status: Submitted

4. Ms. Rajni Bala
   Topic: A Study of Mappings, Invariants and Functor Adjunctions in Generalized Topological Spaces
   Status: Awarded on September 04, 2023

5. Ms. Rupali
   Topic: Geometry of Lightlike Submersions
   Status: Awarded on October 06, 2020.

6. Ms Garima Gupta
   Topic: Geometry of Lightlike Submanifolds of semi-Riemannian Manifolds
   Status: Awarded on April 02, 2019.

7. Ms. Rashmi Sachdeva
   Topic: The Geometry of Slant Lightlike Submanifolds
   Status: Awarded on November 9, 2016.

8. Mr. Varun Jain
   Topic: The Geometry of GCR-Lightlike Submanifolds of Indefinite Sasakian Manifolds
   Status: Awarded on May 28, 2015.

9. Mr. Sangeet Kumar
   Topic: The Geometry of GCR-Lightlike Submanifolds of Indefinite Kaehler Manifolds
   Status: Awarded on May 28, 2015.

10. Mr. Manish Gogna
    Topic: The Geometry of CR-Lightlike Submanifolds
    Status: Awarded on July 8, 2013.

Referring for
the Journals

- Differential Geometry and its Applications
- Mediterranean Journal of Mathematics
- Turkish Journal of Mathematics
- Bulletin of Korean Mathematical Society
- Filomat
- Matematicki Vesnik

- Konuralp Journal of Mathematics
- Novi Sad Journal of Mathematics
- Analele Stiintifice ale Universitatii"Al. I. Cuza" din Iasi
- Acta Universitatis Sapientiae Mathematica
- Facta Universitatis, Series: Mathematics and Informatics
- Honam Mathematical Journal
- International Electronic Journal of Geometry
- AIMS Mathematics
- Applied Mathematics and Nonlinear Sciences

INVITED TALKS

1. Delivered expert Lectures on *Foundation of technical writing using LATEX*, in **Guru-Dakshta Faculty Induction Program**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 04–30 September, 2023.

2. Delivered expert Lectures on *Foundation of technical writing using LATEX*, in **Refresher Course in Research Methodology**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 1–14 August, 2023.

3. Delivered an invited talk on *Geometry of Null Hypersurfaces with Rigging Technique*, in **International Conference on Differential Geometry and Relativity**, organized by Soban Singh Jeena University, Almora in association with the Tensor Society, India, during 18–20 May, 2023.

4. Delivered expert Lectures on *Foundation of technical writing using LATEX*, in **48th Faculty Induction Program for the College and University Teachers**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 9, January–7 February, 2023.

5. Delivered an invited talk on *Geometry of null hypersurfaces with Rigging vector field of indefinite Kaehler manifolds*, in 28th **International Conference of International Academy of Physical Sciences on Innovations in Computational and Physical Sciences for Sustainable Development**, organized by Vijayanagara Sri Krishnadevaraya University, Ballari, Karnataka, during 21–23 December, 2022.

6. Delivered an invited Lecture on *Effective Online Pedagogy for Mathematics E-Content Delivery*, in **STC on E-Content Development and Online Pedagogy**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 1–8 August, 2022.

7. Delivered expert Lectures on *Foundation of technical writing using LATEX*, in **47th Faculty Induction Program for the College and University Teachers**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 1–29 July, 2022.

8. Delivered an invited talk (Online) on *A study of conformal Riemannian maps*, in **Conference and Department Workshop on Mathematics,**

Computer Science and Technical Education, organized by Depatment of Mathematics and Computer Science, Technical University of Civil Engineering Bucharest, Romania, on June 11, 2022.

9. Chaired a session and delivered an invited talk on *Geometry of null hypersurfaces of Lorentzian manifolds with Rigging technique*, in **Online International Symposium on Differential Geometry and its Applications**, organized by the Department of Mathematis, Maulana Azad National Urdu University, Hyderabad during 30–31 March, 2022.

10. Delivered an expert Lecture on *Foundation of technical writing using LaTeX*, in **Online Two Days Workshop on Scientific Writing using LaTeX**, organized by Department of Electronics and Communication Engineering and Department of Electrical and Instrumentation Engineering, SLIET, Longowal, during 14–15 March, 2022.

11. Delivered expert Lectures on *Foundation of technical writing using LaTeX*, in **Faculty Induction Program for the College and University Teachers**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 14 February–17 March, 2022.

12. Delivered an invited talk on *Introduction about LaTeX and its Applications* in **One Week Faculty Development Programme on Computing with MATLAB and LaTeX Software: Indispensable Tools for Researchers**, jointly organized by Department of Mathematics, Baba Farid College, Bathinda, Department of Mathematics, Mizan-Tepi University, Ethiopia and MathTech Thinking Foundation, India, during 05–11 January, 2022.

13. Delivered an invited talk on *Geometry of conformal slant submersions from nearly Kaehler manifolds* and Chaired a session in 27th **International Conference of International Academy of Physical Sciences on Recent Advances in Differential Geometry and Topology**, organized by Department of Mathematics and Statistics, Central University of Punjab, Bathinda, during 26–28 October, 2021.

14. Delivered an invited talk on *Demonstration of space curves and surfaces* and Chaired a session in **National Conference on Recent Trends of Innovation in Basic and Applied Sciences**, organized by School of Basic and Applied Sciences, IEC University, Baddi, on 22nd October, 2021.

15. Delivered an invited talk on *Study of null hypersurfaces of Lorentzian manifolds with Rigging technique* in **NASI-TMC Summer School on Differential Geometry**, organized by Department of Mathematics and Statistics, Central University of Punjab, Bathinda, during 05–24 July, 2021.

16. Delivered an invited talk on *Curves and Surfaces in Euclidean* $3-Space$ in **Two Days National Webinar Series on Recent Developments in Mathematics-2021**, organized by Department of Mathematics, Davangere University, Davangere, Karnataka, during 10–11 June, 2021.

17. Delivered four expert lectures in **Two Days Online National Workshop on LaTeX**, organized by PG Department of Physics, GSSDGS Khalsa College, Patiala, during 01–02 March, 2021.

18. Delivered two expert lectures on *Essentials of Technical Writing and LaTeX*, in **STC on Technical Writing using LaTeX**, organized by National Institute of Technical Teacher's Training and Research (NITTTR), Chandigarh during 15–19 February, 2021.

19. Delivered a Guest lecture on *Applications of Mathematics*, in Swami Vivekanand Institute of Engineering & Technology, on 11th February, 2021.

20. Chaired a session and delivered a talk on *Rigging technique on null hypersurfaces of indefinite Kaehler manifolds*, in Online **International Conference on Riemannian Geometry and Applications (RIGA 2021)**, jointly organized by Technical University of Civil Engineering Bucharest, Romania and University of Bucharest, Romania during 15–17 January, 2021.

21. Delivered an invited talk on *Geometrical representation of Curves and Surfaces*, in **Refresher Course in Mathematical Science**, organized by the Department of Mathematics and Statistics, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur during 29th December, 2020 to 11th January, 2021.

22. Chaired a session and delivered an invited talk on *Geometry of semi-invariant lightlike submanifolds of indefinite Kaehler manifolds*, in **26th International Conference of International Academy of Physical Sciences on Advances in Topology and Differential Geometry**, organized by the Department of Mathematics, Guru Ghasidas University, Bilaspur during 18–20 December, 2020.

23. Delivered an expert Lecture on *Curves and Surfaces*, in 80th−**Refresher Course in Mathematics and Statistics Sciences**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 16–28 November, 2020.

24. Delivered an expert Lecture on *Introduction of LaTeXfor Technical Writing*, in 45th−**Faculty Induction Programme for College and University Teachers**, organized by the UGC-Human Resource Development Centre, Punjabi University, Patiala during 03–31 October, 2020.

25. Delivered an expert Lecture on *Effective Technical Writing using LaTeX*, in 86th−**Refresher Course in Research Methodology for College and University Teachers**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 03–16 October, 2020.

26. Delivered an expert lecture on *Essentials of Technical Writing and LaTeX*, in the National Level Online Faculty Development Program on **Research Pedagogy and Technical Writing**, organized by National Institute of Technical Teacher's Training and Research (NITTTR), Chandigarh during 21–25 September, 2020.

27. Delivered an expert lecture on *Effective Technical Writing using LaTeX*, in National Level Online Workshop on **Effective Online Teaching and Blended Learning in Emerging Scenario**, organized by School of Management Studies, Punjabi University, Patiala, during 05–11 September, 2020.

28. Delivered expert lectures on *Effective Technical Writing using LaTeX*, in **TEQIP-III Sponsored One Week e-STC on Modern Tools and Techniques for Effective Research and Publication**, organized by Department of Industrial and Production Engineering, Dr B. R. Ambedkar N.I.T., Jalandhar, during 21–25 August, 2020.

29. Delivered an expert Lecture on *Writing Research Paper Using LaTeX*, in 84th−**Refresher Course in Information Communication Technology (ICT) for College and University Teachers**, organized by UGC-Human Resource Development Centre, Punjabi University, Patiala during 10–24 August, 2020.

30. Delivered an expert Lecture on *Effective Technical Writing Using LaTeX*, in 44th−**Faculty Induction Program for College and University Teachers**, organized by the UGC-Human Resource Development Centre, Punjabi University, Patiala during 10–18 August, 2020.

31. Delivered an expert Lecture on *Power of LaTeX: Hands on Training* in TEQIP-III Sponsored **One Week STC on Effective Research Proposal and Paper Writing**, organized by Department of Industrial and Production Engineering, National Institute of Technology (NIT), Jalandhar, Punjab during 20–24 December, 2019.

32. Chaired a session and delivered an invited talk on *Geometry of Kaehler-Norden-Golden manifolds and Harmonicity*, in **4th National Conference on Recent Trends in Mathematical Sciences**, organized by School of Mathematics, Shri Mata Vaishno Devi University, Katra, in association with International Academy of Physical Sciences (IAPS), Prayagraj (Allahabad), December 13–14, 2019.

33. Delivered expert Lectures in the **Two Days National Workshop on Effective Technical Writing Using LaTeX**, organized by the P. G. Department of Mathematics, Mata Gujri College, Fatehgarh Sahib, Punjab during 22–23 October, 2019.

34. Delivered an invited talk on *Curves and Surfaces*, in **National Seminar on Popularization of Physical Sciences**, organized by Department of Mathematics, Multani Mal Modi College, Patiala, in association with International Academy of Physical Sciences (IAPS), Prayagraj (Allahabad) during 26–27 September, 2019.

35. Delivered an invited talk on *Geometry of totally umbilical pointwise slant lightlike submanifolds*, in 24th **International Conference of International Academy of Physical Sciences on Innovations in Physical Sciences**, organized by Department of Mathematics, Ch. Charan Singh University, Meerut during 9–11 August, 2019.

36. Delivered an invited talk on *An introduction to geometry of pointwise slant lightlike submanifolds*, in **International Conference on Gravitation, Cosmology and Mathematical Physics**, organized by GLA University, Mathura, in collaboration with the Tensor Society of India, during 4–7 April, 2019.

37. Chaired a Technical Session during **International Conference on Transformation through Innovations: Strategic Applications of Management, IT, Mathematics and Basic Sciences**, organized by Satish Chander Diwan Government College, Ludhiana, India during 16–17 March, 2019.

38. Chaired a Technical Session during **National Seminars on Usage and Prospects of Mathematics**, organized by Multani Mal Modi College, Patiala, India on 7 March, 2019.

39. Delivered an invited talk on *A study of pointwise slant lightlike submanifolds of indefinite Hermitian manifolds*, in **23rd International Conference of International Academy of Physical Sciences on Advances in Physical Sciences to Achieve Sustainable Development Goals**, organized by Nepal Academy of Science and Technology, Kathmandu, Nepal during 16–18 November, 2018.

40. Delivered an invited talk on *The geometry of pointwise slant lightlike submanifolds*, in **National Conference on Recent Advances in Mathematics**, organized by Department of Mathematics, Central University, Jammu, India during 04–05 October, 2018.

41. Delivered an invited talk on *Some characterization theorems for lightlike hypersurfaces of semi-Riemannian manifolds admitting a semi-symmetric non-metric connection*, in **16th International Geometry Symposium**, organized by Department of Mathematics, Manisa Celal Bayar University, Manisa, Turkey during 04–08 July, 2018.

42. Delivered an invited talk on *Geometry of Kaehler-Norden-Golden manifolds and Harmonicity*, in **22nd International Conference of International Academy of Physical Sciences on Recent Trends in Physical Sciences**, organized by the Faculty of Science, Dr Ram Manohar Lohia Avadh University, Faizabad during 13–15 April, 2018.

43. Delivered an extension lecture on *An introduction to non-Euclidean geometry*, organized by P.G. Department of Mathematics, Mohindra College, Patiala, on 26 March, 2018.

44. Delivered an invited talk on *Recent developments of mathematics in higher studies* in the **Internship Camp under INSPIRE (Innovation in Science Pursuit for Inspired Research) Program** organized by Shanti Devi Arya Mahila College, Dinanagar, Distt Gurdaspur, Punjab during 14-18 December, 2017.

45. Delivered an invited talk on *Radical screen transversal lightlike submanifolds of indefinite Kaehler manifolds admitting a quarter-symmetric non-metric*

connection in **National Conference on Differential Geometry and General Relativity** organized Department of Mathematics, Sardar Patel University, Vallabh Vidyanagar, Gujrat, during 28-29 November, 2017.

46. Delivered an invited talk on *Geometry of real half lightlike submanifolds of indefinite Kaehler manifolds* in the **2nd National Conference on Role of Mathematics and Computer Science in Advancement of Physics** organized Government Degree College, Kathua during 10-11 November, 2017.

47. Delivered an invited talk on *Geometry of radical screen transversal lightlike submanifolds of indefinite Kaehler manifolds* in the **21st International Conference of the International Academy of Physical Sciences on Symbiotic Development of Mathematical, Physical, Chemical and Computational Sciences** organized by the Department of Mathematics, Guru Jambheshwar University, Hissar during 28-30 October, 2017.

48. Delivered a keynote lecture in the **One Week National Workshop on LaTeX and Matlab: Indispensable Tools for Researchers**, organized by Department of Applied Science, Guru Kashi University, Talwandi Sabo, Bathinda on August 1, 2017.

49. Delivered an expert talk on *Effective technical writing using LaTeX* in **One Week Faculty Development Program**, organized by Department of Computer Science and Engg., Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib on July 3, 2017.

50. Delivered an invited talk *On geometry of real half lightlike submanifolds of indefinite Kaehler manifolds with quarter symmetric metric connection* in Conference **Differential Geometry** organized by the Institute of Mathematics of the Polish Academy of Sciences at The Mathematical Research and Conference Center, Bedlewo, Poland during 18-24 June, 2017.

51. Delivered an invited talk on *Curves and surfaces* in **National Workshop on Advanced Computational Mathematics and its Applications**, organized by Department of Mathematics, Guru Nanak College, Budhlada during 24-25 April, 2017.

52. Delivered an invited talk on *Half lightlike submanifolds of indefinite Kaehler manifolds* in **National Conference on Topology, Analysis, Algebra and Their Applications**, organized by Department of Mathematics, Shri Mata Vaishno Devi University, Katra during 7-8 March, 2017.

53. Delivered an extension lecture on *Role of differential geometry in daily life* at S. C. D. Government College, Ludhiana on February 27th, 2017.

54. Delivered an invited talk on *The applications of Numerical Methods* in the Centre for Mathematics and Statistics, Central University of Punjab, Bathinda on February 15, 2017.

55. Chaired and delivered an invited talk on *Real half lightlike submanifolds of indefinite Kaehler manifolds with quarter symmetric metric connection* in

National Conference on Differential Geometry & **Its Applications**, organized by Department of Mathematics and Statistics, D.D.U. University, Gorakhpur during 27-28 January, 2017.

56. Delivered an expert talk on *Numerical methods* in **Workshop for PG Students**, Mata Gujri College Fathegarh Sahib, Punjab on December 13, 2016.

57. Delivered an invited talk on *The geometry of lightlike submanifolds of semi-Riemannian manifolds* in **International Conference on Mathem-atics for Brain Studies**, organized by School of Sciences, Center for Research Studies, Noida International University, Greater Noida, during 1-3 February, 2016.

58. Delivered an extension lecture on *Solution of algebraic and transcendental equations*, organized by the PG Department of Mathematics, Government Mahindra College, Patiala on December 4, 2015.

59. Delivered an invited talk on *Lightlike submanifolds of semi-Riemannian manifolds* in **81st Annual Conference of The Indian Mathematical Society**, organized by Department of Mathematics and Department of Computer Science & Engineering, Visvesvaraya National Institute of Technology, Nagpur, India, during December 27-30, 2015.

60. Delivered an expert talks on *Real analysis* in **One week Faculty Development Program**, organized by the University School of Engineering and Technology, Rayat-Bahra University, Mohali, during June 15-19, 2015.

61. Delivered an expert Lecture on *Application of Latex in paper writing* in **UGC sponsored National Workshop on Research Tools in Mathematics**, organized by PG Department of Mathematics, Mata Gujri College, Sri Fathegarh Sahib, Punjab, India on December 24, 2014.

62. Delivered an expert Lecture on *Introduction of Latex in research* in **UGC sponsored National Workshop on Research Tools in Mathematics**, organized by PG Department of Mathematics, Mata Gujri College, Sri Fathegarh Sahib, Punjab, India, on December 23, 2014.

63. Delivered two expert talks on *Laplace transform* in **Faculty Development Program on Engineering Mathematics**, organized by Rayat-Bahra Inst-itute of Engineering and Bio-Technology, Mohali on July 18, 2014.

64. Delivered invited talks on *$\LaTeX$ Software* in **Refresher Course in Mathe-matics**, organized by University Institute of Engineering, Chandigarh University, Mohali during July 7-12, 2014.

65. Chaired Lab Sessions in *National Workshop on $\LaTeX$*, organized by School of Applied Sciences, Chitkara University, Rajpura during July 8-10, 2013.

1. Amrinder Pal Singh, Cyriaque Atindogbe, Rakesh Kumar and Varun Jain, Rigged scalar curvature on null hypersurfaces of GRW spacetimes, *Publicationes Mathematicae Debrecen*, Accepted on 17th January, 2023. (SCI & SCOPUS Indexed)

2. Reetu Maini, Garima Gupta, Rakesh Kumar, Rashmi Sachdeva, Rachna Rani and S. S. Bhatia, Study of conformal Riemannian maps whose total manifold admits a Yamabe soliton, *Int. J. Geom. Methods Mod. Phys.*, **20** (11) (2023), 1–18. (SCI & SCOPUS Indexed)

3. Amrinder Pal Singh, Cyriaque Atindogbe, Rakesh Kumar and Varun Jain, Normalized null hypersurfaces of indefinite Kaehler manifolds, *International Electronic Journal of Geometry*, **16** (1) (2023), 417–434. (SCOPUS Indexed)

4. Varun Jain, S.S. Bhatia and Rakesh Kumar, Induced Ricci type tensors of $GCR-$lightlike submanifolds of indefinite Sasakian manifolds, *Palestine J. Math.*, **12** (2) (2023), 371–382. (SCOPUS Indexed)

5. Rupali Kaushal, Rakesh Kumar and Rachna Rani, Harmonicity of slant conformal Riemannian maps, *Mathematical Notes*, **113**(2) (2023), 243–254. (SCI & SCOPUS Indexed)

6. Rupali Kaushal, Garima Gupta, Rashmi Sachdeva and Rakesh Kumar, Conformal slant Riemannian maps with totally umbilical fibers, Mediterranean Journal of Mathematics, **20** (1) (2023), 1–24. (SCI & SCOPUS Indexed)

7. Adara Monica Blaga, Rakesh Kumar and Rachna Rani, On the geometry of complex metallic Norden manifolds, *Bull. Korean Math. Soc.*, **59**(5) (2022), 1069–1091. (SCI & SCOPUS Indexed)

8. Garima Gupta, Rashmi Sachdeva, Rakesh Kumar and Rachna Rani, On conformal Riemannian maps whose total manifold admits a Ricci soliton, *Journal of Geometry and Physics*, **178** (2022), Article Id. 104539, 1–19. (SCI & SCOPUS Indexed)

9. Varun Jain, Rachna Rani and Rakesh Kumar, On $GCR-$lightlike submanifolds of indefinite Kaehler manifolds, *Journal of Geometry and Symmetry in Physics*, **63**(1) (2022), 21–37. (SCOPUS Indexed)

10. Garima Gupta, Rakesh Kumar, Rachna Rani and Rashmi Sachdeva, Harmonicity of almost Norden submersions between almost Norden manifolds, *Bull. Korean Math. Soc.*, **59**(2) (2022), 375–395. (SCI & SCOPUS Indexed)

11. Rupali Kaushal, Rakesh Kumar, R. K. Nagaich, On geometry of pointwise slant lightlike submersions with totally umbilical fibers, *Afrika Mathematika*, **33**(1) (2022), Article No. 22, 1–12. https://doi.org/10.1007/s13370-022-00963-4. (SCOPUS Indexed)

12. Pooja Bansal and Rakesh Kumar, η-Ricci solitons in nearly Kaehler $6-$sphere, Indian J. Pure App. Maths. **53**(2) (2022), 484–491. (SCI & SCOPUS Indexed)

13. Garima Gupta, Rakesh Kumar and R. K. Nagaich, Chen-like inequalities on lightlike hypersurfaces of semi-Riemannian manifolds, *Advanced Studies: Euro-Tbilisi Mathematical Journal*, **14**(4) (2021), 97–110. (SCOPUS Indexed)

14. Amrinder Pal Singh, Cyriaque Atindogbe, Rakesh Kumar and Varun Jain, Chen-like inequalities on null hypersurfaces with closed rigging of a Lorentzian manifold, *Int. J. Geom. Methods Mod. Phys.*, **18**(8) (2021), Article Id. 2150125, 1–23. (SCI & SCOPUS Indexed).

15. Rashmi Sachdeva, Rupali Kaushal, Garima Gupta and Rakesh Kumar, Conformal slant submersions from nearly Kaehler manifolds, *Int. J. Geom. Methods Mod. Phys.*, **18**(6) (2021), Article Id. 2150088, 1–27. (SCI & SCOPUS Indexed). (MR4262258)

16. Rupali Kaushal, Rakesh Kumar and R. K. Nagaich, On the geometry of screen conformal submersions of semi-transversal lightlike submanifolds, *Asian-European Journal of Mathematics*, **14**(8), Article Id. 2150133 (2021), 1–13. (SCOPUS Indexed).

17. Garima Gupta, Rakesh Kumar and R. K. Nagaich, Geometry of semi-invariant lightlike product manifolds, *New York Journal of Mathematics*, **26** (2020), 1338–1354. (SCI & SCOPUS Indexed). (MR4180226)

18. Rupali Kaushal, Rashmi Sachdeva, Rakesh Kumar and R. K. Nagaich, Semi-invariant Riemannian submersions from nearly Kaehler manifolds, *Int. J. Geom. Methods Mod. Phys.*, **17**(7) (2020), 2050100 (15 pages). (SCI & SCOPUS Indexed). (MR4116204)

19. Varun Jain, Amrinder Pal Singh and Rakesh Kumar, On the geometry of lightlike submanifolds of indefinite statistical manifolds, *Int. J. Geom. Methods Mod. Phys.*, **17**(7) (2020), 2050099 (17 pages). (SCI & SCOPUS Indexed). (MR4116203)

20. Garima Gupta and Rakesh Kumar, Geometry of half lightlike submanifolds of indefinite Kaehler manifolds with a quarter-symmetric metric connection, *Commun. Korean Math. Soc.*, **35**(3) (2020), 979–998. (SCOPUS Indexed). (MR4160740)

21. Rakesh Kumar, Garima Gupta and Rachna Rani, Adapted connections on Kaehler-Norden Golden manifolds and harmonicity, *Int. J. Geom. Methods Mod. Phys.*, **17**(2) (2020), 1–17. (SCI & SCOPUS Indexed). (MR4072993)

22. Rupali Kaushal, Rashmi Sachdeva, Rakesh Kumar and R. K. Nagaich, Generic Riemannian submersions from nearly Kaehler manifolds, *J. Tensor Soc.*, **13** (2019), 1–20. (MR4308123)

23. Garima Gupta, Rakesh Kumar and Rashmi Sachdeva, Geometry of lightlike submanifolds of golden semi-Riemannian manifolds, J. Int. Acad. Phys. Sci., **23**(3) (2019), 211–227. (MR4106934)

24. Rupali Kaushal, Rakesh Kumar and R. K. Nagaich, Lightlike submersions from totally umbilical semi-transversal lightlike submanifolds, Miskolc Math. Notes, **19**(2) (2018), 953–968. (SCI & SCOPUS Indexed). (MR3911464)

25. Garima Gupta, Rashmi Sachdeva, Rakesh Kumar and R. K. Nagaich, Pointwise slant lightlike submanifolds of indefinite Kaehler manifolds, Mediterr. J. Math., **15**(3) (2018), 1–17. (SCI & SCOPUS Indexed). (MR3799084)

26. Garima Gupta, Rakesh Kumar and R. K. Nagaich, Radical screen transversal lightlike submanifolds of indefinite Kaehler manifolds admitting a quarter-symmetric non-metric connection, *Int. J. Geom. Methods Mod. Phys.*, **15**(2) (2018), 1–21. (SCI & SCOPUS Indexed). (MR3749450)

27. Rashmi Sachdeva, Rachna Rani, Rakesh Kumar and S. S. Bhatia, Study of totally contact umbilical hemi-slant lightlike submanifolds of indefinite Sasakian manifolds, *Balkan J. Geom. Appl.*, **22** (1) (2017), 70–80. (SCOPUS Indexed). (MR3678011)

28. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Totally umbilical slant lightlike submanifolds of indefinite Kaehler manifolds, *Kyungpook Math. J.*, **57**(3) (2017), 503–516. (SCOPUS Indexed). (MR3722705)

29. Varun Jain, Rachna Rani, Rakesh Kumar and R. K. Nagaich, Some characterization theorems on holomorphic sectional curvature of GCR light-like submanifolds, *Int. J. Geom. Methods Mod. Phys.*, **14** (3), (2017), 1–18. (SCI & SCOPUS Indexed). (MR3608891)

30. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, The axioms of indefinite hemi-slant planes and spheres, *Lobachevskii J. Math.*, **38** (1) (2017), 125-130. (SCOPUS Indexed). (MR3615333)

31. Rachna Rani, Rakesh Kumar and R. K. Nagaich, The axioms of spheres in lightlike geometry of submanifolds, *Proc. Indian Acad. Sci. (Math. Sci)*, **126** (4) (2016), 613–621. (SCI & SCOPUS Indexed). (MR3568253)

32. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Slant lightlike submersions from indefinite almost Hermitian manifold onto a lightlike manifold, *Ukrainian Math. J.*, **68** (7) (2016), 963–971. (SCI & SCOPUS Indexed). (MR3552040)

33. Rachna Rani, Sangeet Kumar, Rakesh Kumar and R. K. Nagaich, Characterizations of null holomorphic sectional curvature of GCR-lightlike submanifold of an indefinite nearly Kaehler manifold, *Anal. Theory Appl.*, **32** (2) (2016), 122–134. (MR3529324)

34. Garima Gupta, Rakesh Kumar and R. K. Nagaich, Screen conformal lightlike submanifolds of semi-Riemannian manifolds, *J. Geometry*, **107** (2016), 635–655. (SCOPUS Indexed). (MR3563217)

35. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Warped product slant lightlike submanifolds of indefinite Sasakian manifolds, *Balkan J. Geom. Appl.*, **20** (1) (2015), 98–108. (SCOPUS Indexed). (MR3367070)

36. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Totally contact umbilical slant lightlike submanifolds of indefinite Kenmotsu manifolds, *Tamkang J. Maths.*, **46**(2) (2015), 179–191. (SCOPUS Indexed). (MR3352356)

37. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Totally umbilical hemi-slant lightlike submanifolds, *New York J. Math.*, **21** (2015), 191–203. (SCI & SCOPUS Indexed). (MR3336552)

38. Varun Jain, Rakesh Kumar and R. K. Nagaich, Non existence of totally contact umbilical GCR-lightlike submanifolds of indefinite Kenmotsu manifolds, *Hacet. J. Math. Stat.*, **44** (1) (2015), 83–91. (SCI & SCOPUS Indexed). (MR3363766)

39. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Non existence of totally umbilical proper slant lightlike submanifold of indefinite Sasakian manifolds, *Bull. Iranian Math. Soc.*, **40** (5) (2014), 1135–1151. (SCI & SCOPUS Indexed). (MR3273829)

40. Sangeet Kumar, Rakesh Kumar and R. K. Nagaich, Ricci Tensor for GCR-lightlike submanifolds of indefinite nearly Kaehler manifolds, *Afr. Diaspora J. Math.(N.S.)*, **17** (1) (2014), 32—48. (MR3270011)

41. Sangeet Kumar, Rakesh Kumar and R. K. Nagaich, GCR-lightlike submanifolds of a semi-Riemannian product manifold, *Bull. Korean Math. Soc.*, **51** (3) (2014), 883—899. (SCI & SCOPUS Indexed). (MR3214253)

42. Manish Gogna, Rakesh Kumar and R. K. Nagaich, On totally contact umbilical CR-lightlike submanifolds of indefinite Sasakian manifolds, *Demonstratio Math.*, **47** (1) (2014), 170–178. (ESCI & SCOPUS Indexed). (MR3200194)

43. Rakesh Kumar, Rachna Rani, Manish Gogna and R. K. Nagaich, Characterization of GCR-lightlike warped product of indefinite Sasakian manifolds, *Arab J. Math. Sci.*, **20** (4) (2014), 191–204. (MR3227418)

44. Sangeet Kumar, Rakesh Kumar and R. K. Nagaich, GCR-lightlike submanifolds of indefinite nearly Kaehler manifolds, *Bull. Korean Math. Soc.*, **50** (4) (2013), 1173—1192. (SCI & SCOPUS Indexed). (MR3092381)

45. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Totally contact umbilical hemi-slant lightlike submanifold of an indefinite Cosymplectic manifold, Proceedings of International Conference on Information and Mat-hematical Sciences, Baba Farid College of Engineering and Technology, Bathinda, Punjab, during 24-26 October, 2013, 146–149.

46. Varun Jain, Rakesh Kumar and R. K. Nagaich, Integrability of the distributions in GCR-lightlike submanifolds, *Mathematical Sciences and Appl. E-Notes*, **1** (2) (2013), 1–10.

47. Sangeet Kumar, Rakesh Kumar and R. K. Nagaich, Ricci tensor of GCR-lightlike submanifolds of indefinite complex space, *Bull. Iranian Math. Soc.*, **39** (5) (2013), 1009–1029. (SCI & SCOPUS Indexed). (MR3126270)

48. Rakesh Kumar, Characterization of the GCR-lightlike warped product of indefinite Kenmotsu manifolds, *Mat. Vesnik*, **65** (4) (2013), 533–546. (SCOPUS Indexed). (MR3101437)

49. Varun Jain, Rakesh Kumar and R. K. Nagaich, Integrability of the distributions in GCR-lightlike submanifolds of indefinite Sasakian manifolds, *Kyungpook Math. J.*, **53** (2) (2013), 207–218. (SCOPUS Indexed). (MR3078083)

50. Rashmi Sachdeva, Rakesh Kumar and S. S. Bhatia, Totally contact umbilical slant lightlike submanifolds of indefinite Cosymplectic manifolds, *ISRN Geometry*, Volume 2013, Article ID 231869, 1–8. (MR3095653)

51. Rachna Rani, Rakesh Kumar and R. K. Nagaich, Totally contact umbilical lightlike hypersurfaces of indefinite S-manifolds, *Journal of Mathematics*, Volume 2013, Article ID 395787, 1–7.(SCI & SCOPUS Indexed). (MR3097212)

52. Varun Jain, Rakesh Kumar and R. K. Nagaich, Non existence of totally contact umbilical GCR-lightlike submanifolds of indefinite Cosymplectic manifolds, *Vietnam J. Math.*, **41** (2) (2013), 121–134. (SCOPUS Indexed). (MR3089811)

53. Varun Jain, Rakesh Kumar and R. K. Nagaich, Integrability of the distributions in GCR-lightlike submanifolds of indefinite Cosymplectic manifolds, *Lobachevskii J. Math.*, **34** (1) (2013), 76–84. (SCOPUS Indexed). (MR3031558)

54. Rakesh Kumar and R. K. Nagaich, Characterization of GCR-lightlike warped product of indefinite Cosymplectic manifolds, *Novi Sad J. Math.*, **42** (2) (2012), 111–126. (MR3099741)

55. Manish Gogna, Rachna Rani, Rakesh Kumar and R. K. Nagaich, Totally umbilical lightlike hypersurfaces of semi-Riemannian manifolds, *J. Tensor Soc.*, **6** (2) (2012), 145–156. (MR3076205)

56. Varun Jain, Rakesh Kumar and R. K. Nagaich, On GCR-lightlike product of Indefinite Cosymplectic manifolds, *Int. J. Math. Math. Sci.*, Volume 2012, Article ID 605816, 1–12. (SCOPUS Indexed). (MR2959591)

57. Sangeet Kumar, Rakesh Kumar and R. K. Nagaich, Characterization of holomorphic bisectional curvature of GCR-lightlike submanifolds, *Adv. Math. Phys.*, Volume 2012, Article ID 356263, 1–18. (SCI & SCOPUS Indexed). (MR2945124)

58. Sangeet Kumar, Rakesh Kumar and R. K. Nagaich, Integrebility of distributions in GCR-lightlike submanifolds of indefinite Kaehler manifolds, *Commun. Korean Math. Soc.*, **27** (3) (2012), 591–602. (SCOPUS Indexed). (MR2978726)

59. Manish Gogna, Rakesh Kumar and R. K. Nagaich, Integrability of the distributions in CR-lightlike submanifolds of indefinite Sasakian manifolds, *Int. J. Math. Anal.*, **6** (2012), 199–207. (SCOPUS Indexed). (MR2876191)

60. Rachna Rani, Rakesh Kumar and R. K. Nagaich, Characterization of CR lightlike warped product of indefinite Kaehler manifolds, *ISRN Mathematical Physics*, Volume 2012, Article ID 957176, 1–14.

61. Manish Gogna, Rakesh Kumar and R. K. Nagaich, Generalized Cauchy Riemann lightlike submanifolds, *J. Math. Anal.*, **2** (2) (2011), 29–37. (MR2877998)

62. Rakesh Kumar, R. K. Nagaich and J. B. Jun, Vanishing of the Bochner curvature tensor of indefinite almost Hermitian manifolds, *Eurasian Math. J.*, **2** (3) (2011), 82–88. (MR2910842)

63. Rakesh Kumar, Sanget Kumar and R. K. Nagaich, GCR lightlike product of indefinite Kaehler manifolds, *ISRN Geometry*, Volume 2011, Article ID 531281, 1–13.

64. Varun Jain, Rakesh Kumar and R. K. Nagaich, Totally contact umbilical GCR-lightlike submanifolds of indefinite Sasakian manifolds, *Vietnam J. Math.*, **39** (1) (2011), 91-103. (SCOPUS Indexed). (MR2841638)

65. Rakesh Kumar, Varun Jain and R. K. Nagaich, GCR-lightlike product of indefinite Sasakian manifolds, *Adv. Math. Phys.*, Volume 2011, Article ID 983069, 1–13. (SCI & SCOPUS Indexed). (MR2801348)

66. Rachna Rani, Rakesh Kumar and R. K. Nagaich, Indefinite nearly Kahler manifolds of constant type, *Eurasian Math. J.*, **2** (1) (2011), 120–127. (MR2910825)

67. Rakesh Kumar, Jasleen Kaur and R. K. Nagaich, On CR lightlike product of an indefinite Kaehler manifold, *Int. J. Math. Math. Sci.*, Volume 2011, Article ID 857953, 1–10. (SCOPUS Indexed). (MR2793387)

68. Rakesh Kumar, Rachna Rani and R. K. Nagaich, On contact CR-lightlike submanifolds of indefinite Sasakian manifolds, *Vietnam J. Math.*, **38** (4) (2010), 485–499. (SCOPUS Indexed). (MR2798142)

69. Manish Gogna, Rakesh Kumar and R. K. Nagaich, Totally umbilical CR-lightlike submanifolds of indefinite Kaehler manifolds, *Bull. Math. Anal. Appl.*, **2** (4) (2010), 54–61. (MR2747887)

70. Rakesh Kumar, Rachna Rani and R. K. Nagaich, Some properties of lightlike submanifolds of semi-Riemannian manifolds, *Demonstratio Math.*, **43** (3) (2010), 691–701. (ESCI & SCOPUS Indexed). (MR2683366)

71. Rakesh Kumar, Rachna Rani and R. K. Nagaich, The axiom of spheres in semi-Riemannian geometry with lightlike submanifolds, *Kodai Math. J.*, **32** (2009), 52–58. (SCI & SCOPUS Indexed). (MR2518553)

72. Rachna Rani, Rakesh Kumar and R. K. Nagaich, Constancy of ϕ sectional curvatures of (ϵ)-Sasakian manifold, *Lobachevskii J. Math.*, **30** (1) (2009), 76–80. (SCOPUS Indexed). (MR2506057)

73. Rakesh Kumar, Rachna Rani and R. K. Nagaich, Constancy of ϕ-holomorphic sectional curvature in indefinite Sasakian manifolds, *Int. Elec. J. Geom.*, **2** (1) (2009), 34–40. (MR2501384)

74. Rakesh Kumar and R. K. Nagaich, Indefinite RK-manifolds of constant holomorphic sectional curvature, *Int. J. Math. Anal.*, **3** (11) (2009), 527–534. (SCOPUS Indexed). (MR2553966)

75. Jasleen Kaur, Rakesh Kumar, S. B. Singh and R. K. Nagaich, A note on indefinite Quasi-Kaehler manifolds with constant holomorphic sectional curvature, *Int. J. Math. Anal.*, **3** (24), (2009), 1177–1182. (SCOPUS Indexed). (MR2604357)

76. Rakesh Kumar and R. K. Nagaich, Generlaziation of Cartan's Lemma for indefinite K-spaces, *Lobachevskii J. Math.*, **29** (1) (2008), 21–23. (SCOPUS Indexed). (MR2411207)

77. Rakesh Kumar, Jasleen Kaur and R. K. Nagaich, Indefinite Quasi Kahler manifolds, *Bull. Cal. Math. Soc.*, **100** (2) (2008), 177-184. (MR2437542)

78. Rakesh Kumar, Rachna Rani and R. K. Nagaich, On sectional curvatures of (ϵ)-Sasakian manifolds, *Int. J. Math. Math. Sci.*, Volume (2007), Article ID 93562, 1–8. (SCOPUS Indexed). (MR2365734)

79. R. K. Nagaich and Rakesh Kumar, Conditions of constancy of holomorp-hic sectional curvature in an K-space, *Ganita*, **58** (1) (2007), 41–46. (MR25-26003)

80. Rakesh Kumar and R. K. Nagaich, The axiom of Coholomorphic 3-spheres in an indefinite K-space, *Bull. Cal. Math. Soc.*, **97** (4) (2005), 373–376. (MR2189605)

BOOK/CHAPTER
PUBLICATIONS

1. Published a Book Chapter entitled **Slant Lightlike Submanifolds of Indefinite Contact Manifolds** in the Book entitled "Contact Geometry of Slant Submanifolds". Editors: B.Y. Chen, M.H. Shahid and F. Al-Solamy. Springer Nature Singapore Pvt. Ltd (June, 2022) with ISBN 978-981-16-0016-6. https://doi.org/10.1007/978-981-16-0017-3_12.

2. Published a Book Chapter entitled **Slant Lightlike Submanifolds of Indefinite Kaehler Manifolds and their Warped Product Manifolds** in the Book entitled "Complex Geometry of Slant Submanifolds". Editors: B.Y. Chen, M.H. Shahid and F. Al-Solamy. Springer Nature Singapore Pvt. Ltd (May, 2022) with ISBN 978-981-16-0020-3. https://doi.org/10.1007/978-981-16-0021-0_12.

3. Published a Book Chapter entitled **Warped Product Slant Lightlike Submanifolds on Indefinite Kaehler Manifolds** with page no. 33–44, in "Differential Geometry, Algebra and Analysis", Springer Proceedings in Mathematics & Statistics, Volume 327, Springer Nature, Singapore, (2020). ISBN: 978-981-15-5454-4. (MR4151046)

4. A book entitled **The Geometry of Slant Lightlike Submanifolds** jointly written with Dr Rashmi Sachdeva and Dr S. S. Bhatia has been published by Scholar's Press, International Book Market Service Limited, Mauritius on February, 2018 with ISBN 978-620-2-30702-4.

5. A book entitled **Manifolds with Indefinite Metrics** jointly written by Jasleen Kaur, Rakesh Kumar and R. K. Nagaich has been published by

LAP Lambert Academic Publishing, Germany on November 11th, 2014 with ISBN-13: 978-3-659-63256-3 and ISBN-10: 3659632562.

6. Edited and Compiled the Abstract Book of **International Conference on Emerging Areas of Mathematics for Science and Technology** in conjunction with the 12th Annual Conference of the Indian Society of Industrial and Applied Mathematics, organized by the Department of Mathematics, Punjabi University, Patiala, from January 30 to February 1, 2015.

7. Published a Book Chapter **Generic Lightlike Submanifolds of Indefinite Kaehler Manifolds**, with page no. 22–33, in a book entitled "Differential Geometry, Functional Analysis and Applications", published by the Narosa Publishing House Pvt. Ltd. ISBN 978-81-8487-421-1, (2015).

8. Published a Book Chapter **Slant Lightlike Submanifolds of Indefinite almost Contact Manifolds**, with page no. 46–56, in a book entitled "Differential Geometry, Functional Analysis and Applications", published by the Narosa Publishing House Pvt. Ltd. ISBN 978-81-8487-421-1, (2015).

COUNTRY (CITY) VISITED

Romania (Timisoara), Hungary (Budapest), Austria (Vienna), Russia (Moscow), France (Paris), Nepal (Kathmandu), Brazil (Rio de Janeiro), UAE (Dubai), Turkey (Manisa), Poland (Bedlewo), Germany (Frankfurt), Italy (Trieste, Venice).

CITATIONS AS PER GOOGLE SCHOLAR

- **Citations:** 301
- **h-index:** 08
- **i10-index:** 08

CONFERENCE/ WORKSHOP ORGANIZED

1. As a Convener, organized **One Day Workshop on Clinical Hypnotherapy for Lifetyle Stress Management** in the Department of Basic and Applied Sciences, Punjabi University, Patiala during 04 February, 2020.

2. As a Convener, organized a **Short Term Course on Smart Materials and Nanotechnology** in collaboration with National Institute of Technical Teacher's Training and Research (NITTTR), Chandigarh in the Department of Basic and Applied Sciences, Punjabi University, Patiala during 02–06 December, 2019.

3. As a Convener, organized a **Three Days National Workshop on Research Methods and Data Analysis using SPSS** in the Department of Basic and Applied Sciences, Punjabi University, Patiala during 29–31 March, 2019.

4. As a Convener, organized a **Three Days National Workshop on LaTeX and Technical Writing** in the Department of Basic and Applied Sciences, Punjabi University, Patiala during 23–25 November, 2018.

5. As a Organizing Secretory, organized **International Conference on Emerging Areas of Mathematics for Science** & **Technology** in conjunction with the 12th Annual Conference of the Indian Society of Industrial and Applied Mathematics, from 30th January to 1st February, 2015.

<div style="color:red">PAPER PRESENTATIONS</div>

1. Presented a paper in **Workshop on Contact and Poisson Geometry** organized by West University of Timisoara, Timisoara, Romania, during October 31–02 November, 2019.

2. Presented a paper in **International Congress in Mathematician (ICM-2018)** organized by International Mathematical Union at Rio de Janerio, Brazil, during 01–09 August, 2018.

3. Presented a paper in **International Conference on Differential Geometry, Algebra and Analysis** organized by Department of Mathematics, Jamia Milia Islamia, New Delhi, during November 15–17, 2016.

4. Presented a paper in **18th International Conference of International Academy of Physical Sciences (CONIAPS-XVIII) on the Recent Trends in Physical Sciences**, organized by Faculty of Sciences, University of Allahabad, Allahabad, during December 22–24, 2015.

5. Presented a paper in **National Conference on Recent Development in Mathematical Modelling and Fuzziology** organized by Department of Applied Sciences, Chandigarh University, Khrar, during October 28–29, 2015.

6. Presented a paper in the **National Conference on Recent Trends in Mathematical Sciences** organized by School of Mathematics, Shri Mata Vaishno Devi University, Katra, Jammu & Kashmir, during October 8–9, 2015.

7. Presented a paper in **International Conference on Recent Trends in Mathematics** organized by Department of Mathematics, University of Allahabad, Allahabad during July 10–12, 2015.

8. Presented a paper in **International Conference on Emerging Areas of Mathematics for Science** & **Technology** organized by Department of Mathematics, Punjabi University, Patiala during 30th January to 1st February, 2015.

9. Presented a paper in **National Conference on Differential Geometry** & **its Applications** organized by Department of Mathematics, University of Allahabad, Allahabad, during December 27–28, 2014.

10. Presented a paper in the **International Conference on Algebra, Geometry, Analysis and Their Applications** organized by Department of Mathematics, Jamia Milia Islamia, New Delhi, during November 27–29, 2014.

11. Presented a paper in **Conference on Exploring Basic and Applied Sciences**, organized by Lovely Professional University, Jalandhar, during November 14–15, 2014.

12. Presented a paper in the **International Conference on Differential Geometry and its Applications**, organized by the Department of Mathematics, Jadavpur University, Kolkata in collaboration with The Tensor Society, during October 16–18, 2014.

13. Presented a paper in the **International Conference on Mathematical Modeling and Statistical Analysis** organized by PG Department of Mathematics, JC DAV College, Dasuya, Hoshiarpur, on September 30, 2014.

14. Presented a paper in **International Conference on Advances in Pure and Applied Mathematics**, organized by Department of Mathematics, Government Degree College, Haripur (Manali), Himachal Pradesh, during March 7–9, 2014.

15. Presented a paper in **International Conference on Differential Geometry and Relativity 2013**, organized by Department of Mathematics, Deen Dyal Upadhyaya Gorakhpur University, Gorakhpur in collaboration with The Tensor Society, during November 09–11, 2013.

16. Presented a paper in the **International Conference on Information and Mathematical Sciences**, organized by Department of Mathematics, Baba Farid College of Engineering and Technology, Bathinda, Punjab, during October 24–26, 2013.

17. Presented a paper in the **International Conference in Mathematical Sciences**, organized by Department of Mathematics, Government Degree College, Haripur (Manali), Himachal Pradesh, during March 8–9, 2013.

18. Presented a paper in the **International Conference on Differential Geometry and Relativity**, organized by Department of Mathematics, Aligarh Muslim University, Aligarh in collaboration with The Tensor Society, during November 20–22, 2012.

19. Presented a paper in the **International Conference on Differential Geometry, Functional Analysis and Applications**, organized by the Department of Mathematics, Jamia Millia Islamia, New Delhi during Sept. 08–10, 2012.

20. Presented a paper in the **National Conference on Recent trends in Mathematics and Its Applications**, organized by the Department of Mathematics, Sant Longowal Institute of Engineering and Technology, Longowal, Distt Sangrur, during December 16–17, 2011.

21. Presented a paper in the **2nd International Conference on Recent Advancement in Technology and Management**, organized by the Continental Group of Institutes, Jalvehra, Fathegarh Sahib on November 5, 2011.

22. Presented a paper in **13th International Conference of International Academy of Physical Sciences (CONIAPS-XIII) on the Emerging Interfaces of Physical Sciences and Technology**, organized by the University of Petroleum and Energy Studies, Dehradun, Uttarakhand during June 14–16, 2011.

23. Presented a paper in **14th Punjab Science Congress, Theme: Role of Scientific Innovations and Knowledge in Economic Development**, organized by the Sant Longowal Institute of Engineering and Technology, Longowal during February 7–9, 2011.

24. Presented a paper in **International Conference on Recent Trends in Mathematics and its Applications**, organized by Department of Mathematics, Jamia Millia Islamia, New Delhi during March 30–31, 2009.

25. Presented a paper in **8th Punjab Science Congress**, organized by the Department of Zoology, Punjabi University, Patiala, during February 7–9, 2005.

CONFERENCE/
WORKSHOPS
ATTENDED

1. Attended *Virtual Heidelberg Laureate Forum*, organized by Heidelberg Laureate Forum Foundation, Heidelberg, Germany, during September 21–25, 2020.

2. Attended *International Workshop on Geometry of Continued Fractions: Ramanujan and his Successors*, organized by Srinivasa Ramanujan Department of Mathematics, Centre for vedic Mathematical Studies, Central University of Himachal Pradesh, Dharamshala, during September 14–15, 2020.

3. Attended a Webinar on *Almost $C(\alpha)-$manifolds and their classification*, organized by Poornima College of Engineering, Jaipur, on June 19, 2020.

4. Attended Two days Live Online Webinar on *Optimization Techniques: An introduction with Applications*, organized by Department of Applied Sciences, Chitkara University, Punjab, during June 12–13, 2020.

5. Attended One day Online Workshop on *Book and Article Publishing and Springerlink Platform Demonstration*, organized by School of Education, Guru Nanak Dev University, Amritsar, on April 22, 2020.

6. Attended a Short Term Course for Assistant Professor Grade III on *Quality Management in Higher Education* organized by the Human Resource Development Centre, Panjab University, Chandigarh, during January 17-23, 2017.

7. Attended *School and Workshop on Complex Analysis, Geometry and Dynamics*, organized by The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy from 21st September to 3rd October, 2015.

8. Attended *30th Annual Conference of Ramanujan Mathematical Society* organized by Indian Institute of Science Education and Research, Mohali during May 15–17, 2015.

9. Attended workshop on *Some High Points of Undergraduate Mathematics Education* organized by Ramanujan Mathematical Society at Indian Institute of Science Education and Research, Mohali on May 14th, 2015.

10. Attended *ATM workshop on Lattices: Geometry and Dynamics* organized by Indian Institute of Science Education and Research, Mohali in collaboration with National Center for Mathematics, during December 17–22, 2014.

11. Attended *NRC-M Workshop on Phase-field Modelling* organised by UGC Networking Resource Centre for Materials, Dept. of Materials Engineering, Indian Institute of Science, Bangalore during June 08–12, 2014.

12. Attended *Teacher Enrichment Workshop (TEW) on Finite Group Theory*, organized by Department of Mathematics, Punjabi University, Patiala in collaboration with National Centre of Mathematics during May 27 to June 2, 2014.

13. Attended *Instructional School for Lecturers on Topology and Geo-metry* organized by Harish Chandra Research Institute, Jhunsi, Allahabad in collaboration with the National Centre for Mathematics and Advanced Training in Mathematics, during December 16–28, 2013.

14. Attended one day technical workshop on the *Smart Technologies in Education* organized by the Academic Staff College, Punjabi University, Patiala on January 15, 2013.

15. Attended *15th Punjab Science Congress*, organized by Guru Nanak Dev University, Amritsar during February 7–9, 2012.

16. Attended a *Workshop on Differential Geometry*, organized by the DST Centre for Interdisciplinary Mathematical Sciences, Banaras Hindu University, Varanasi, during May 02–11, 2011.

17. Attended *International Congress of Mathematicians (ICM-2010)* at Hyderabad during 19–27 August, 2010.

18. Attended *UGC Sponsored Refresher Course* organized by Academic Staff College, Punjabi University, Patiala during May 03–22, 2010.

19. Attended *UGC Sponsored Workshop on Emerging Technologies in Nano Sciences*, organized by Department of Physics, Punjabi University, Patiala on February 20, 2008.

20. Attended *UGC Sponsored Orientation Program*, organized by the Academic Staff College, Aligarh Muslim University, Aligarh during 17th May to 13th June, 2006.

21. Attended *UGC Sponsored Refresher Course*, organized by the UGC Refresher Course Centre, Thapar Institute of Engineering & Technology, Patiala during December 12–31, 2005.

1. K. Meena and A. Yadav, Conformal Submersions Whose Total Manifolds Admit a Ricci Soliton, Mediterr. J. Math. (2023) **20**:168.

2. A. Ciobanu and M. Mirea, New Inequalities on Isotropic Spacelike Submanifolds in Pseudo-Riemannian Space Forms, Rom. J. Math. Comput. Sci. **11** (2) (2021), 48–52.

3. M. Shuaib and T. Fatima, A note on conformal hemi-slant submersions, Afrika Matematika (2023) 34:4.

4. F. Sahin, B. Sahin and F. E. Erdogan, Golden Riemannian manifolds having constant sectional curvatures and their submanifolds, *Mediterr. J. Math.*, (2022) 19:171.

5. R. Sari, Generic $\xi^\perp-$Riemannian Submersions, *Hacet. J. Math. Stat.*, **51** (2) (2022), 309–403.

6. T. Fatima, M.A. Akyol and A.A. Alzulaibani, On a submersion of generic submanifold of a nearly Kaehler manifold, *Int. J. Geom. Methods Mod. Phys.*, **19**(4) (2022), 1–15.

7. M. Antic, Z. Hu, M. Moruz and L. Vrancken, Surfaces of the nearly Kahler $\mathbb{S}^3\times\mathbb{S}^3$ preserved by the almost product structure, *Mathematische Nachrichten*, **294** (2021), 2286–2301.

8. J. Roy, L.-I. Piscoran and S.K. Hui, Certain Classes of Warped Product Submanifolds of Sasakian Manifolds, Differential Geometry, Algebra and Analysis, Springer Proceedings in Mathematics & Statistics, Singapore, **327** (2020), 77-90.

9. U.C. De, S. Shenawy and B. Unal, $\varphi(Ric)-$vector fields on warped product manifolds and applications, *Afrika Matematika*, **32** (2021), 1709–1716.

10. M. Umehara and K. Yamada, Hypersurfaces with light-like points in a Lorentzian manifold II, *Kodai Math. J.*, **44** (2021), 69–76.

11. M. Karimumuryango, H.F. Tetsing, D. Ndayirukiye and G. Nibaruta, Rigging and existence of stable currents in null hypersurface of Lorentzian manifold, *Differential Geometry - Dynamical Systems*, **23** (2021), 74–89.

12. Miroslava Antic and Djordje Kocic, Three-dimensional CR submanifolds in $\mathbb{S}^6(1)$ with umbilical direction normal to $\mathcal{D}_3$, *Int. Electron. J. Geom.*, **14**(1) (2021), 125–131.

13. A. H. Alkhaldi, A. Ali and J. W. Lee, The Lawson-Simons' theorem on warped product submanifolds with geometric information, *AIMS Mathematics*, **6**(6) (2021), 5886–5895.

14. P. Bansal, M.H. Shahid and J.W. Lee, $\zeta-$Ricci solitons on real hypersurfaces of nearly Kaehler 6$-$sphere with SSMC, *Mediterr. J. Math.*, (2021) 18:93.

15. A. Mustafa and S. Uddin, Chen-Ricci inequality for $CR-$warped products and related open problems, *Mediterr. J. Math.*, (2021) 18:67.

16. A. Ali, R.P. Agrawal, F. Mofarreh and N. Alluhaibi, The base of warped product submanifolds of Sasakian space forms characterized by differential equations, *Adv. Differ. Equ.*, **2021**, 69 (2021).

17. S. Kumar, Geometry of semi-transversal lightlike warped product submanifolds of indefinite Kaehler manifolds, *Asian-European Journal of Mathematics*, **14**(1) (2021), 2150001, 1–12.

18. A. Ali, F. Mofarreh, W. A. Mior Othman and D. S. Patra, Applications of differential equations to characterize the base of warped product submanifolds of cosymplectic space forms, *Journal of Inequalities and Applications*, (2020) 2020:241.

19. F. Etayo, A. deFrancisco, R. Santamaria, Classification of almost Norden golden manifolds, *Bull. Malays. Math. Sci. Soc.*, **43** (2020), 3941–3961.

20. C. W. Lee and J. W. Lee, Generic lightlike submanifolds of an indefinite Kaehler manifold with an $(l, m)-$type metric connection, *Armenian J. Math.*, **12**(6) (2020), 1–17.

21. Siraj Uddin, Adela Mihai, Ion Mihai and Awatif AL-Jedani, Geometry of bi-warped product submanifolds of locally product Riemannian manifolds, *RACSAM*, **114**(42) (2020), 1–17.

22. Najma Abdul Rehman, Curvature Inequalities for Submanifolds of S-space form, *European Journal of Pure and Applied Mathematics* **12** (2019), 1811–1818.

23. Siraj Uddin, F. R. Al-Solamy, Noura M. Al-Houiti, Generic warped products in locally product Riemannian manifolds, *Journal of Geometry and Physics* **146** (2019), 1–11.

24. Burcin Dogan, Bayram Sahin and Erol Yasar, Screen Generic Lightlike Submanifolds, *Mediterr. J. Math.* **16** (2019), 1–21.

25. F. R. Al-Solamy, M. F. Naghi, S. Uddin, Geometry of warped product pseudo-slant submanifolds of Kenmotsu manifolds, *Quaestiones Mathematicae*, **42**(3) (2019), 373–389.

26. H. M. Tastana, Biwarped product submanifolds of a Kähler manifold, *Filomat*, **32**(7) (2018), 2349–2365.

27. J. Bae, J. Park and K. Sekigawa, A one-parameter family of totally umbilical hypersurfaces in the nearly Kähler 6-sphere, *J. Korean Math. Soc.*, **55**(4) (2018), 963–974.

28. D.H. Jin, Generic lightlike submanifolds of an indefinite Kaehler manifold with a quartr-symmetric metric connection, *Bull. Korean Math. Soc.*, **55**(2) (2018), 515–531.

29. F. Massamba and S. Ssekakka, A new approach to totally umbilical null submanifolds, *Novi Sad J. Math.*, **47**(2) (2017), 63–76.

30. D.H. Jin, Generic lightlike submanifolds of an indefinite Kaehler manifold with a non-metric ϕ-symmetric connection, *Commun. Korean Math. Soc.*, **32**(4) (2017), 1047–1065.

31. Andreea Olteanu, Doubly Warped Products in Locally Conformal Almost Cosymplectic Manifolds, *Int. Electron. J. Geom.*, **10**(2) (2017), 73–81.

32. Yoon-Tae Jung, A-Ryong Kim, and Soo-Young Lee, The existence and the completeness of some metrics on Lorentzian warped product manifolds with fiber manifold of class (B), *Honam Mathematical J.*, **39**(2) (2017), 187–197.

33. Li U, Juan Zhang, Xun Xie, Hypersurfaces satisfying $\tau_2(\phi) = \eta\tau(\phi)$ in pseudo-Riemannian space forms, *Math. Phys. Anal. Geom.*, **20** (2017), 1–23.

34. Hyang Sook Kim and Jin Suk Pak, Integral curves of the characteristic vector fields on CR-submanifolds of maximal CR-dimension, *Commun. Korean Math. Soc.*, **32** (1) (2017), 107–118.

35. F. Massamba and S. Ssekajja, A note on quasi-generalized CR-lightlike geometry in the indefinite nearly μ-Sasakian manifolds, *Int. J. Geom. Methods Mod. Phys.*, **14** (3) (2017), 1–17.

36. Miroslava Antic, Four dmensional CR submanifolds of the sphere $S^6(1)$ with two dimensional nullity distribution, *J. Math. Anal. Appl.*, **445** (2017), 1–12.

37. Hakan Mete Taştan and Mukut Mani Tripathi, Semi-slant submanifolds of a locally conformal Kähler manifold, *An. Ştiinţ. Univ. Al. I. Cuza Iaşsi Mat. (N.S.)*, **62** (2016), 337–347.

38. S.S. Shukla and Akhilesh Yadav, Pseudo-slant lightlike submanifolds of indefinite Sasakian manifolds, *An. Ştiinţ. Univ. Al. I. Cuza Iaşsi Mat. (N.S.)*, **62** (2016), 571–583.

39. Adela Mihai and Ion Mihai, CR-Submanifolds in Complex and Sasakian Space Forms, Chapter 8, *Geometry of Cauchy-Riemann Submanifolds*, 217-266, Springer, Singapore (2016).

40. Velichka Milousheva and Nurettin Cenk Turgay, Quasi-minimal Lorentz surfaces with pointwise 1-type Gauss map in pseudo-Euclidean 4-space, *J. Geom. Phys.*, **106** (2016), 171–183.

41. Akram Ali, Wan Ainun Mior Othman, Cena Ozel, Characterizations of contact CR-warped product submanifolds of nearly Sasakian manifolds, *Balkan J. Geom. Appl.*, **21** (2) (2016), 9–20.

42. Marie-Amelie Lawna and Miguel Ortega, A fundamental theorem for the hypersurfaces in semi-Riemannian warped products, *J. Geom. Phys.*, **90** (2015), 55–70.

43. Yoon-Tae Jung, Jeong-Mi Lee and Ga-Young Lee, The completeness of some metrics on Lorentzian warped product manifolds with fiber manifold of Class (B), *Honam Mathematical J.*, **37** (1) (2015), 127–134.

44. H. Mirandola and F. Vitorio, Global isometric embeddings of multiple warped product metrics into quadrics, *Kodai Math. J.*, **38** (2015), 119–134.

45. Shuhei Oshio and Yoshio Matsuyama, On hypersurfaces in a real space form with the Ricci tensor satisfying certain conditions, The International Conference *Differential Geometry - Dynamical Systems.* DGDS-2014, September 1-4, 2014, 61–68.

46. Mohammed Jamali, Jae-Bok Jun, Mohammad Hasan Shahid and Mobin Ahmad, A remark on the axiom of spheres with lightlike submanifolds and application of Jacobi equation, *Bull. Malays. Math. Sci. Soc.*, **37** (2) (2014), 565–574.

47. Jorge H. ira and Gabriela A. Wanderley, Existence of Nonparametric Solutions for a Capillary Problem in Warped Products, *Pacific J. Math.*, **269** (2) (2014), 407–424.

48. S. Kazan and B. Sahin, Pseudosymmetric lightlike hypersurfaces, *Turk. J. Math.*, **38** (2014), 1050–1070.

49. D. H. Jin, Geometry of lightlike submanifolds of an indefinite Kenmotsu manifold, *Honam Mathematical J.*, **36** (4) (2014), 707–722.

50. Shyuichi Izumiya, Takami Sato, Lightlike hypersurfaces along spacelike submanifolds in Minkowski spacetime, *J. Geom. Phys.*, **71** (2013), 30–52.

51. D. H. Jin, Eintein half lightlike submanifolds of a Lorentzian space form with a semi-symmetric non-metric connection, *J. Inequal. Appl.*, **2013**; 403.

52. D. H. Jin, Two characterization theorems for lightlike hypersurfaces of a semi-Riemannian space form, *Honam Mathematical J.*, **35** (3) (2013), 329–342.

53. Suleyman Cengiz, Lightlike hypersurfaces with harmonic curvature in the Lorentzian space form, *Bull. Math. Anal. Appl.*, **5** (4) (2013), 14-18.

54. Brian Carlsen and Jeanne N. Clelland, The geometry of lightlike surfaces in Minkowski space, *J. Geom. Phys.*, **74** (2013), 43–55.

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