

NEWSLETTER



"Our mentor's light illuminates our path, guiding us with wisdom and inspiration"

Prof. A.H. Siddiqi
(1943- 2020)

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**THE A. H. SIDDIQI CENTRE FOR
ADVANCED RESEARCH IN APPLIED
MATHEMATICS & PHYSICS (CARAMP)**



CARAMP- CHRONICLE- VOL. 1
**"VENTURE OF CENTER'S PROGRESS AND
ACHIEVEMENTS"**

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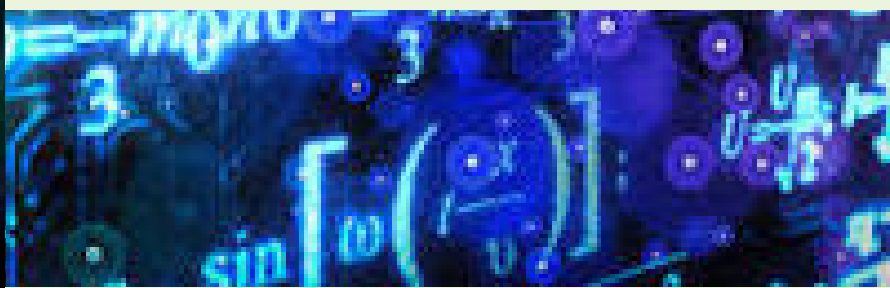
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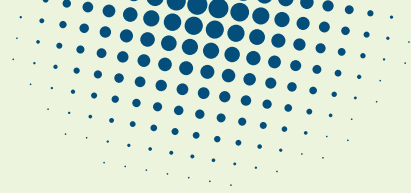
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Dr. Sweta Srivastav

Editor
Associate Professor Mathematics,
Sharda School of Basic Sciences and Research





CARAMP- CHRONICLE

“VENTURE OF CENTER'S PROGRESS AND ACHIEVEMENTS”

MESSAGE FROM THE DESK OF COORDINATOR

As the coordinator of "The A. H. Siddiqi Centre for Advanced Research in Applied Mathematics & Physics (CARAMP)," I am honored to share the highlights of our remarkable journey and contributions to the field. Established in July 2018 by the late Prof. Abul Hasan Siddiqi, in collaboration with the Nadeem Tarin Education Foundation, our Centre is dedicated to advancing interdisciplinary research in Mathematics and Applied Sciences. In 2022, we paid tribute to Prof. Siddiqi's legacy by renaming the Centre in his honor.



Our aim is to promote research in cutting-edge areas such as Image Processing, Wavelets, Signal Systems, Fractals, Chaos Control, Non-linear Dynamical Systems, Inventory Modeling, and Biomedical Sciences. This includes Medical Imaging, disease prediction, brain studies, and natural calamity forecasting. We are also dedicated to applying mathematical research to industries like Railways, Metro systems, and Oil and Gas through collaborations with leading researchers in India and abroad.

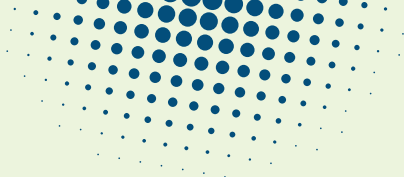
Since our inception, CARAMP has become a vibrant hub of research and academic activity. In 2020, we organized an online international seminar in memory of Prof. A. H. Siddiqi, featuring distinguished speakers like Prof. Rane Lozi from France and Prof. M. Shah Jahan from the USA. The following year, we initiated the A. H. Siddiqi memorial lecture series with Prof. U. B. Desai, Founding Director of IIT Hyderabad, delivering the inaugural lecture on "IoT, CPS, and AI". In 2022, we hosted Prof. Mehiddin Al-Baali from Sultan Qaboos University, Oman, for a memorial lecture on advanced optimization methods.

Our flagship event, the International Conference on Applied & Industrial Mathematics (ICAIM 2023), held at Sharda University, brought together renowned academics from around the world, including Prof. Günter Leugering from Germany and Prof. Barry Arnold from the USA. Additionally, we have conducted numerous guest lectures, such as Prof. Sultana N. Nahar from The Ohio State University on "Exoplanets and Spectroscopic Search for Life Forms". Over the past five years, our faculty and research scholars have published approximately 33 research papers, underscoring our commitment to academic excellence.

Moving forward, we plan to expand our activities with a series of international conferences, workshops, and Faculty Development Programs (FDPs). We will also host summer schools, hackathons, and research symposia to enhance research capabilities and provide networking opportunities. Our future goals include fostering national and international collaborations, familiarizing the scientific community with emerging mathematical areas, and offering practical training in mathematical software.

Prof. Khursheed Alam

(Coordinator CARAMP)



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PROGRESS REPORT **(Jan 2020- Dec 2023)**

Seminars / Symposium

An online international seminar was conducted in the memory of the late Prof. A. H. Siddiqi on September 12, 2020. During this event, a prestigious assembly of following speakers provided enlightening lectures that enhanced the commemoration of his legacy.

1. Prof. Rane Lozi, Professor Mathematics, University of Nice, France.
2. Prof. M. Shah Jahan, Professor, Department of Physics and Materials Science, The University of Memphis, Memphis, USA.
3. Hans Georg Feichtinger, Professor, Department of Mathematics, University of Vienna.
4. Ahmed I. Zayed, Professor and Chair of the Department of Mathematical Science, University of California-Berkeley, University of Central Florida, USA.
5. Prof. Rashmi Bhardwaj, I. P. University, New Delhi, India.
6. Prof. MD Kalimuddin Ahmad, Professor, Department of Mathematics, Aligarh Muslim University, AMU, Aligarh, India.

Guest Lectures

Speaker: Dr. Selby Jose, Associate Professor and head of the Department of Mathematics, Institute of Science, Mumbai, December 30, 2020.

Topic: “Application of Mathematics in Google Search”

Speaker: Prof. Sultana N. Nahar, Professor, Department of Astronomy, Ohio State University, USA, on September 23, 2022.

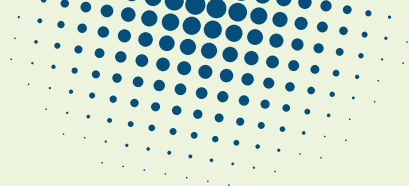
Topic: "Exoplanets and spectroscopic search for life forms"

Speaker: Prof. Idris Qureshi, Professor in the Department of Applied Sciences, Faculty of Engineering and Technology, JMI, New Delhi, June 13, 2023.

Topic: “The Science Behind the Study: Understanding the Anatomy of Research Methodology”

Prof. A. H. Siddiqi Memorial Lectures

1. Speaker: Prof. U. B. Desai, Founding Director, IIT Hyderabad, delivered the 1st memorial lecture of A. H. Siddiqi memorial lecture series on January 20, 2021.
Topic: “IoT, CPS and AI”



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2. Speaker: Prof. Mehiddin Al- Baali, Sultan Qaboos University, Oman, on January 20, 2022.
Topic: "Improved Diagonal Updating Methods for Large-Scale Unconstrained Optimization"
3. Speaker: Prof. Md. Kalimuddin Ahmad, Professor in the Department of Mathematics, Aligarh Muslim University (AMU), Aligarh, India, on January 20, 2023.
Topic: “Some Recent Trends in Applied Mathematics”

International Conference

An online international conference titled “International Conference on Applied & Industrial Mathematics” (ICAIM 2023) was organized on March 24-26, 2023, at Sharda University, India. The following Keynote Speakers, Plenary Speakers, and Invited Speakers were present:

1. Prof. Günter Leugering, Friedrich-Alexander-University, Germany
2. Prof. Dumitru Baleanu, Çankaya University, Türkiye and Institute of Space Sciences, Romania
3. Prof. Barry Arnold, University of California, USA
4. Prof. H. Georg Feichtinger, University of Vienna, Austria
5. Prof. Stephané Jaffard, University of Paris - Est, France
6. Prof. Barbara Lee Keyfitz, The Ohio State University, USA
7. Prof. Shaher Momani, Ajman University, UAE
8. Prof. Yu-Dong Zhang, University of Leicester, UK
9. Prof. Mehiddin Al-Baali, Calabria University, Italy
10. Prof. Zafer Aslan, Istanbul Aydin University, Turkey
11. Prof. Osvaldo Gervasi, University of Perugia, Italy
12. Prof. Yeliz Karaca, University of Massachusetts, USA
13. Prof. Akhtar Khan, Rochester Institute of Technology, USA
14. Prof. René Lozi, University of Nice, France
15. Prof. Sita Ram Sharma, Chitkara University, India
16. Prof. Farokh Marvasti, (Sharif University of Technology, Iran
17. Prof. Ravi. P. Agarwal, Texas A&M University-Kingsville, Texas, USA
18. Prof. Ayoub Khan, University of Bisha, Kingdom of Saudi Arabia
19. Prof. Khan Muhammad, Sungkyunkwan University, Republic of Korea
20. Prof. Mukhayo Rasulova, Institute of Nuclear Physics Academy of Sciences of Uzbekistan
21. Prof. Luis Manuel Sánchez Ruiz, Universitat Politècnica de Valencia, Spain
22. Prof. Liliana Guran, Western University of Arad, Romania
23. Prof. Maria Skopina, St. Petersburg State University, Russia.
24. Prof. Md. Kalimuddin Ahmad, Aligarh Muslim University, India
25. Prof. Muhammad Shah Jahan, The University of Memphis, USA.



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Invited Speakers (ICAIM-2023)



Prof. Günter Leugering,
(Friedrich-Alexander-
University, Germany)



Prof. Dumitru Baleanu
(Çankaya University,
Türkiye and Institute of
Space Sciences,
Romania)



Prof. Barry Arnord
(University of
California, USA)



**Prof. H. Georg
Feichtinger**
(University of Vienna,
Austria)



**Prof. Stéphane
Jaffard**
(University of
Paris - Est,
France)



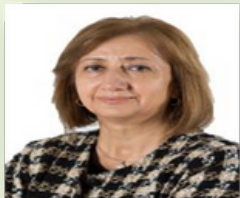
**Prof. Barbara Lee
Keyfitz**
(The Ohio State
University, USA)



**Prof. Shaher
Momani**
(Ajman
University, UAE
and The
University of
Jordan, Jordan)



**Prof. Yu-Dong
Zhang**
(University of
Leicester, UK)



Prof. Zafer Aslan
(Istanbul Aydin
University, Turkey)



Prof. Osvaldo Gervasi
(University of Perugia,
Italy)



Prof. Yeliz Karaca
(University of
Massachusetts, MIT,
USA)



Prof. Akhtar Khan
(Rochester Institute
of
Technology, USA)



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Prof. René Lozi
(Université Côte d'Azur,
France)



Prof. Sita Ram Sharma
(Chitkara University,
India)



**Prof. Farokh
Marvasti**
(Sharif University of
Technology, Iran)



Prof. Ravi. P. Agarwal
(Texas A&M
University - Kingsville,
Texas, USA)



**Prof. Khan
Muhammad**
(Sungkyunkwan
University,
Republic of Korea)



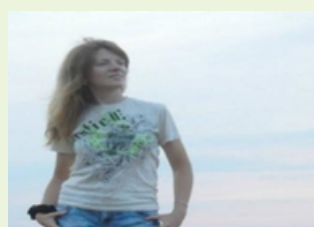
**Prof. Mehiddin Al-
Baali,**
(Sultan Qaboos
University,
Oman)



**Prof. Luis Manuel
Sánchez Ruiz**
(Universitat Politècnica
de
Valencia, Spain)



Prof. Liliana Guran
(Western University of
Arad, Romania)



Prof. Maria Skopina
(St. Petersburg State
University, Russia)



**Prof. Md. Kalimuddin
Ahmad**
(Aligarh Muslim
University, India)



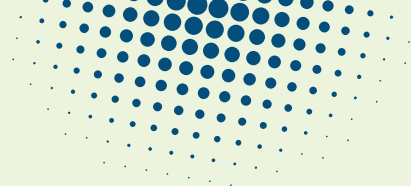
**Prof. Muhammad
Shah Jahan,**
(The University of
Memphis, USA)



**Prof. Sanjeev Kumar
Sharma,**
(Dr. B. R. Ambedkar
University, India)



Prof. Mukhayo Rasulova,
(National University of Uzbekistan, Uzbekistan)

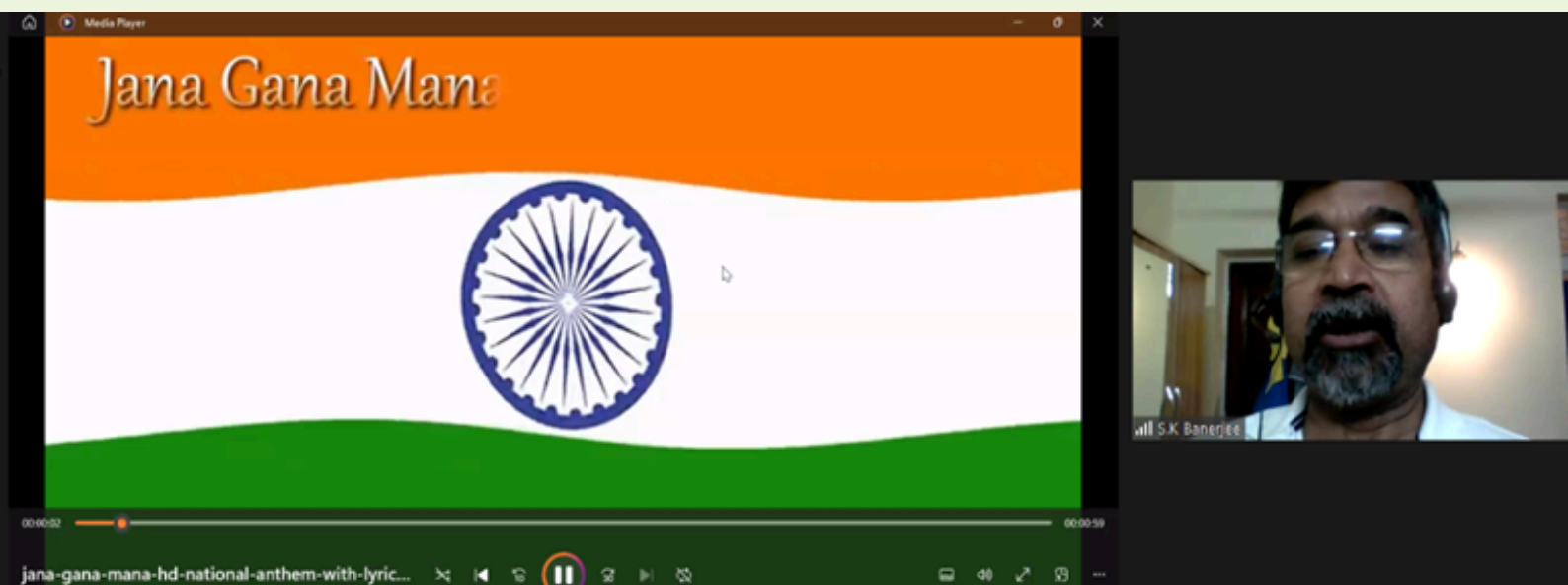


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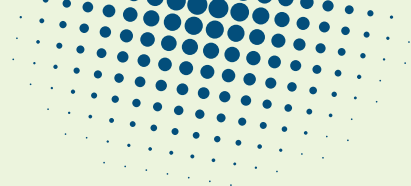
Glimpse of ICIAM 2023



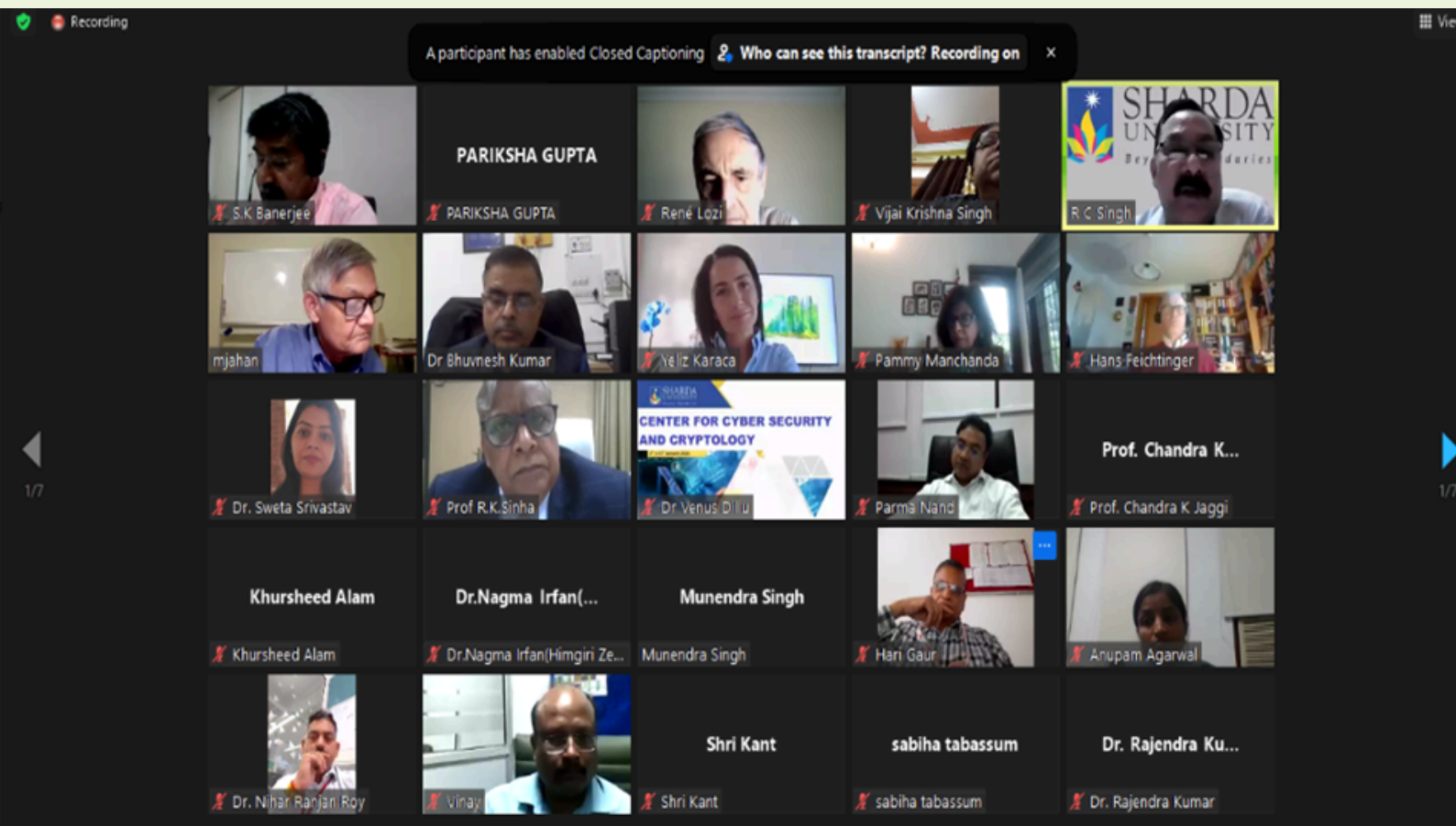
Prof. Khursheed Alam, Coordinator CARAMP addressing the guests in Inaugural function, ICAIM 2023



Prof. S.K. Banerjee, Dean, Sharda School of Basic Sciences and Research, welcoming the guests in Inaugural function, ICAIM 2023

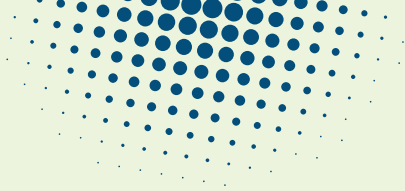


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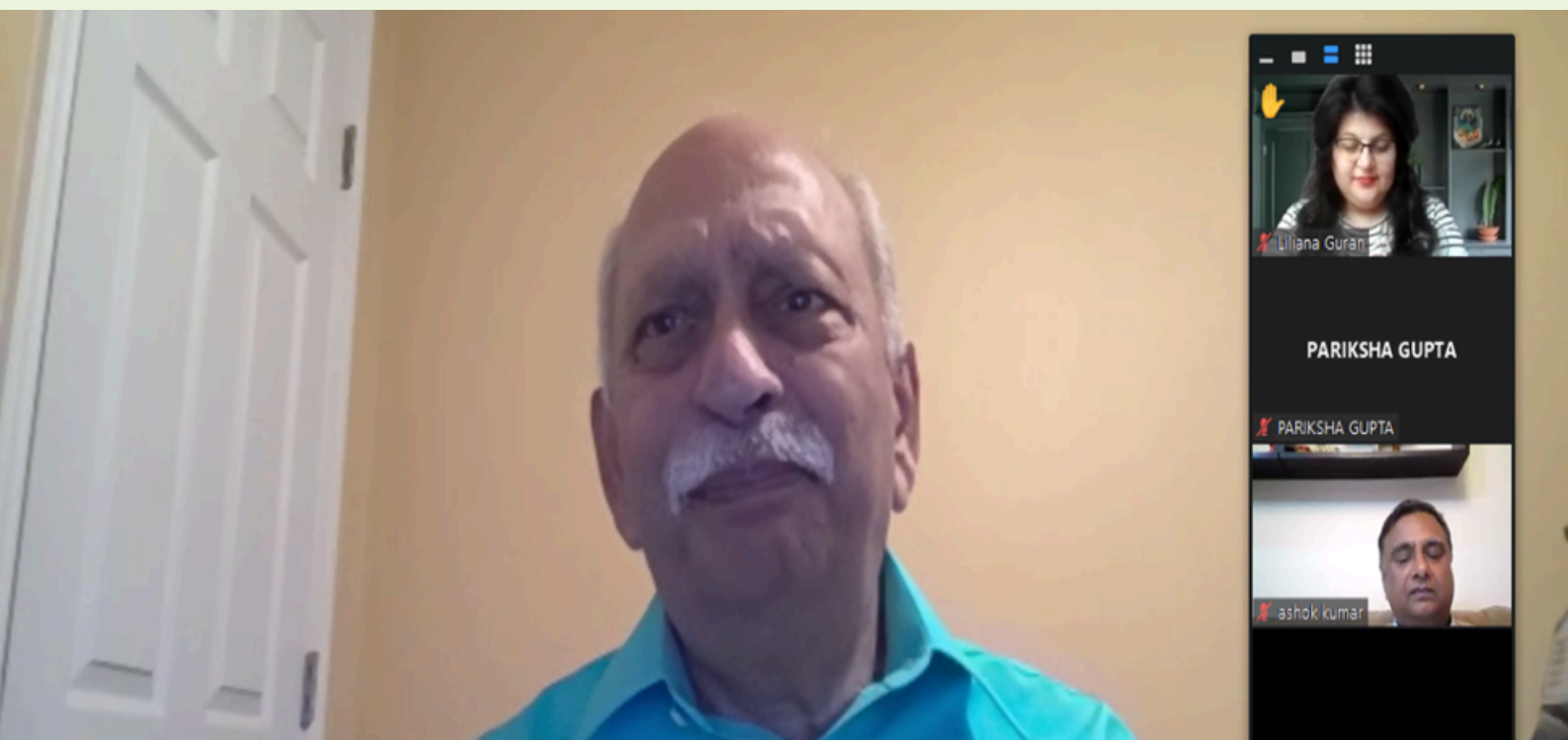
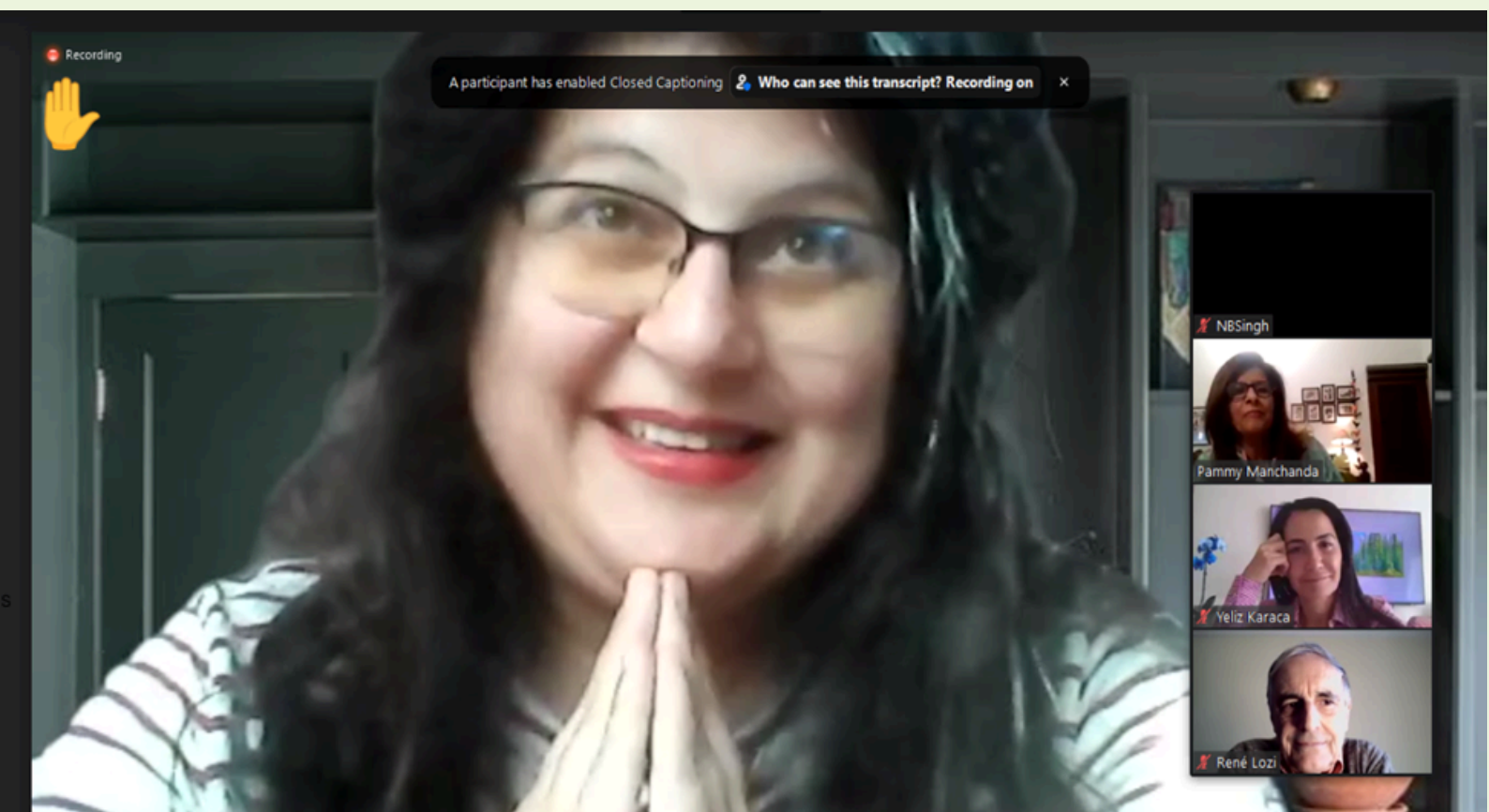


Prof. R.C. Singh addressing during the Inaugural function, ICAIM 2023

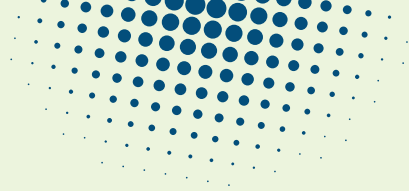




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Prof. R.P. Agarwal, Texas University, U.S.A. addressing at the Valedictory function, ICAIM 2023



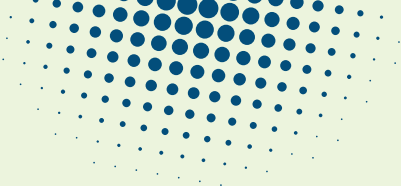
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Prof. Zafer Aslan, Istanbul Aydin University, Turkey addressing at the Valedictory function, ICAIM 2023



Prof. P. Manchanda, Guru Nanak Dev University, Amritsar addressing at the Valedictory function, ICAIM 2023



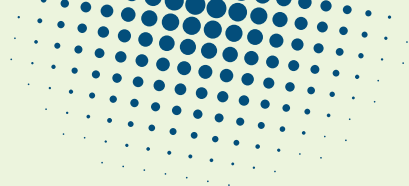
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Dr. Sweta Srivastav, Sharda University presenting the vote of thanks in Valedictory function, ICAIM 2023

Educational Visit

The research scholars from the mathematics department visited the Central Science Library, IIT Delhi on 20th June 2023.

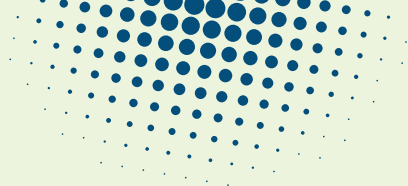


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Photographs



Research Scholars in Central Science Library, IIT Delhi



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Publications through CARAMP

39 research papers have been published by the faculty members, research scholars and others who have been associated with the CARAMP. The following is the list of publications:

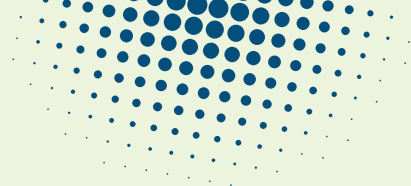
SCOPUS-Indexed Journals

1. Chaos Theory and Applications, (Q1)

1. Novel Traveling Wave Solutions of Jaulent-Miodek Equations and Coupled Konno-Oono Systems and Their Dynamics by Raj Kumar Kripa Shankar Pandey Avneesh Kumar Anshu Kumar.
<https://doi.org/10.51537/chaos.1320442>
2. Different Variants of Bernstein Kantorovich Operators and Their Applications in Sciences and Engineering Field by Parveen Bawa Neha Bhardwaj Sumit Kaur Bhatia.
<https://doi.org/10.51537/chaos.1320442>
3. Weighted and Well-Balanced Nonlinear TV-Based Time-Dependent Model for Image Denoising by Alka Chauhan Santosh Kumar Khursheed Alam.
<https://doi.org/10.51537/chaos.1324355>

2. PROCEEDINGS ON ENGINEERING SCIENCES, (Q4)

1. Analysis of inventory model with price-dependent demand, constant deterioration rate, salvage value, time-dependent holding cost, and partially backlogged shortage by Taruna Sharma, R. K. Srivastava, and Sangeeta Gupta.
[DOI: 10.24874/PES06.02A.003](https://doi.org/10.24874/PES06.02A.003)
2. A deep learning-based enhanced computational model for dental caries classification by Saptadeepa Kalita, Ram Chandra Singh, Ali Imam Abidi, Hemant Sawhney.
[DOI:10.24874/PES06.02A.001](https://doi.org/10.24874/PES06.02A.001)
3. Soft computing approach for optimal power control in large-scale nuclear power reactors under adverse operating conditions by Ruchi Varshney, Amit Dixit.
[DOI:10.24874/PES06.02A.002](https://doi.org/10.24874/PES06.02A.002)
4. Transformative Impact of Technology on the Healthcare Industry: A SWOT Analysis by Siya Bhatia, Mridul Dharwal, Sumeet Bhatia, Varun Mohan.
[DOI:10.24874/PES06.02A.004](https://doi.org/10.24874/PES06.02A.004)

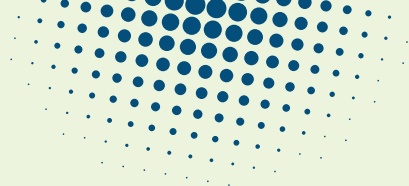


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Web of Science Indexed Journal

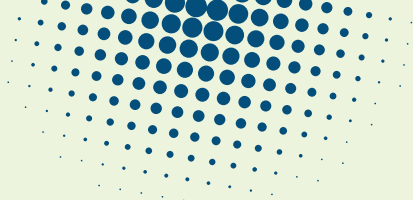
Indian Journal of Natural Sciences

1. On Similarity Solution of (3+1)-Dimensional Jimbo-Miwa Equations Arising in Fluids by Raj Kumar.
Ref: [IJONS/PUB-78/VOL-14/JUNE/475/2023](#)
2. Analysis of Effects of E-Games on Human Cognitive and Physical Behavior by Ujjawal Tiwari, Gautam Suri, Rajendra Kumar
Ref: [IJONS/PUB-78/VOL-14/JUNE/476/2023](#)
3. On Identity of Ramanujan and Continued Fraction Related to It by Satya Prakash Singh¹, Akash Rawat¹ and Nidhi Sahni
Ref: [IJONS/PUB-78/VOL-14/JUNE/477/2023](#)
4. Machine Learning based Comprehensive Analysis of COVID-19 and its Vaccination in India by Aashish Jain¹, Rohit Khokher, Rajendra Kumar and Ram Chandra Singh.
Ref: [IJONS/PUB-78/VOL-14/JUNE/478/2023](#)
5. Mathematical Modeling of Covid - 19 with Treatment by Diksha Sharma and Alpna Mishra.
Ref: [IJONS/PUB-78/VOL-14/JUNE/479/2023](#)
6. Retinal Fundus Multi-Disease Classification using Machine Learning and Computer Vision Techniques by Aparna Chaudhary and H.D.Arora.
Ref: [IJONS/PUB-78/VOL-14/JUNE/480/2023](#)
7. A Non-Destructive Deep Learning Technique for Fresh and Rotten Fruits Classification by Surya Kant Pal, Suyog Khanal¹, Prem Shankar Jha and Rita Roy.
Ref: [IJONS/PUB-78/VOL-14/JUNE/481/2023](#)
8. Haar - Vilenkin Wavelets and MRA by Meenakshi¹ and P.Manchanda.
Ref: [IJONS/PUB-78/VOL-14/JUNE/482/2023](#)
9. IoT based Real-Time Water Level Monitoring and Early Warning cum Alert System for Dams by Ramesh Kumar Sah, Suman Lata, Soma Deb and Kalpana Sagar.
Ref: [IJONS/PUB-78/VOL-14/JUNE/483/2023](#)
10. Few Summation Theorems for Appell's Function F₂ of Second Kind Having Different Arguments by Bhawna Gupta¹, M.S. Babool an Ashfaq Ahmad.
Ref: [IJONS/PUB-78/VOL-14/JUNE/484/2023](#)
11. A Practical Approach to Solving Differential Equation with MATLAB Simulink for Solar PV Panel by Chosching Lazes, Isaac TC Vanlalhruaizela and Khursheed Alam.
Ref: [IJONS/PUB-78/VOL-14/JUNE/485/2023](#)



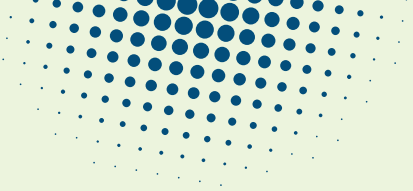
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12. Design and Development of IoT based PV Monitoring System by S.Wend_Kuuni Boris Jean Armand, Suman Lata, Mohammad. Hassan and Shubham Kumar.
[Ref: IJONS/PUB-78/VOL-14/JUNE/486/2023](#)
13. Partnership to Achieve Goal: To Protect Aquatic Life by Iftikhar Haider¹, Chosching Lazés, Santosh Kumar² and Sakshi Pathak.
[Ref: IJONS/PUB-78/VOL-14/JUNE/487/2023](#)
14. Inventory Model for Price-Dependent Demand with Deterioration under Permissible Delay in Payments by Renu Gautam¹, Sangeeta Gupta and Sweta Srivastav.
[Ref: IJONS/PUB-78/VOL-14/JUNE/488/2023](#)
15. Product Cordial Labeling in Context of Some New Graphs by Varsha Rathi¹, Sweta Srivastav and Sangeeta Gupta.
[Ref: IJONS/PUB-78/VOL-14/JUNE/489/2023](#)
16. Cordial Labeling In Context Of Some New Graphs by SlashiLeel, Sweta Srivastav and Sangeeta Gupta.
[Ref: IJONS/PUB-78/VOL-14/JUNE/490/2023](#)
17. A Study on Climate Conditions of Various Geographical Territories in the World through Machine Learning Techniques by Deepti Gupta, Rudra Pratap Jena and Soumya Sucharita Patel.
[Ref: IJONS/PUB-78/VOL-14/JUNE/491/2023](#)
18. A Partially Backlogged Inventory Model for Deteriorating Items with Ramp-Type Demand, Time-Dependent Holding Cost and Salvage Value by Ekta Chauhan, R. K. .Srivastav and Sangeeta Gupta.
[Ref: IJONS/PUB-78/VOL-14/JUNE/492/2023](#)
19. e-Card for Futuristic Indian Education System by Rajendra Kumar, Aman Anand¹, Praveen Pachauri, Devanshi Singh and Khursheed Alam.
[Ref: IJONS/PUB-78/VOL-14/JUNE/493/2023](#)
20. Multimodal Brain Tumor Segmentation using 3D-U-Net by Novsheena Rasool and Javaid Iqbal Bhat.
[Ref: IJONS/PUB-78/VOL-14/JUNE/494/2023](#)
21. Implementation of Machine Learning Techniques for the Detection of the Pediatric Diseases by Arun Kumar, Surya Kant Pal, Santosh Kumar, Subhodeep Mukherjee and Rita Roy.
[Ref: IJONS/PUB-78/VOL-14/JUNE/495/2023](#)



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22. Organization in Management Students' Persuasive Texts by SwadhaBhartia , Anil Sehwat and R. C. Sharma.
Ref: [IJONS/PUB-81/VOL-14/DEC/563/2023](#)
23. Technology and its Effect on Student Academic Achievement and Motivation by Priyanka Agarwal, Nitendra Kumar, and Khursheed Alam.
Ref: [IJONS/PUB-81/VOL-14/DEC/564/2023](#)
24. Awareness and Behavior of Investor towards derivative market in India by Priyanka Agarwal, Nitendra Kumar, Khursheed Alam, Vijay Kumar and Ankit Mahur.
Ref: [IJONS/PUB-81/VOL-14/DEC/565/2023](#)
25. Shifting Paradigms of Women Representation in India: Tracing through Aurat and Mother India (1957) by Mohammad Ashraf Ali and Ritu.S.Sood.
Ref: [IJONS/PUB-81/VOL-14/DEC/566/2023](#)
26. Role of Technology in Education Sector during Covid-19 by Khursheed Alam, Santosh Kumar, Krish Kunjan and Ummulvara Shaik.
Ref: [IJONS/PUB-81/VOL-14/DEC/567/2023](#)
27. Transforming Recruitment Processes: The Impact and Strategic Implications of Artificial Intelligence by Abubakar Bello Mohammed, Aarti Sharma, Mridul Dharwal, Anup Kumar Srivastava and Deepa Chauhan.
Ref: [IJONS/PUB-81/VOL-14/DEC/568/2023](#)
28. Importance of Preventative Healthcare Measures in Rural Areas by SalamKailashSingh, Akansha Singh, MalashiIpoFabrice and Santosh Kumar.
Ref: [IJONS/PUB-81/VOL-14/DEC/569/2023](#)
29. A Study on Five-Dimensional Geometry With Chaplygin Equation of State in Lyra Geometry by Gitumani Sarma Anupam Dutta and Mustafizur Rahman.
Ref: [IJONS/PUB-81/VOL-14/DEC/570/2023](#)
30. Applications of First-Order Differential Equations in Simple Electric Circuits, Using MATLAB Simulink, To Analyse the Performance of A Solar Photovoltaic Panel by Masood Alam, ÖzenÖZER and Khursheed Alam.
Ref: [IJONS/PUB-81/VOL-14/DEC/571/2023](#)
31. Advanced Approaches in Fake News Detection Using Machine Learning by Masood Alam, Özen ÖZER, Khursheed Alam and Santosh Kumar.
Ref: [IJONS/PUB-81/VOL-14/DEC/573/2023](#)



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32. Performance Management Practices in Entrepreneurial Marketing among SME'sx by Siddhartha Shankar, Sanjeev Bansal and Preeti Mishra.

Ref: [IJONS/PUB-81/VOL-14/DEC/575/2023](#)

As we conclude this edition of Caramp-Chronicle, we honor the journey of our Center's progress and achievements, looking forward to continued success and innovation

*We value your insights and would love to hear your suggestions.
Please share your thoughts with us.*

caramp.sharda@gmail.com