CV: Prof. Bedangadas Mohanty

Name : Bedangadas Mohanty
Affiliation : National Institute of Science Education and Research Bhubaneswar
Address : School of Physical Sciences, National Institute of Science Education and Research (NISER), PO- Jatni, Dist-Khurda, Pin: 752050; Odisha, India
Email id : bedanga@niser.ac.in
Telephone : +918895584872
Nationality : Indian
Date of Birth : 8th April 1973
Date of Degree of PhD : July 2002 (**WA98 Experiment at CERN**)
Discipline : Physical Science
Field of Specialization : Experimental High Energy Physics

Employment History:

S.N	Period	Employer	Designation
1.	July 2016 – till date	**National Institute of Science Education and Research, Bhubaneswar**	**Professor**
2.	February 2019 – February 2020	**CERN** (on sabbatical from NISER)	**Scientific Associate**
3.	August 2016 till date	Homi Bhabha National Institute, Mumbai	Professor
4.	June 2012 – June 2016	National Institute of Science Education and Research, Bhubaneswar	Associate Professor
5.	July 2012 – June 2016	Homi Bhabha National Institute, Mumbai	Associate Professor
6.	August 2009 – July 2012	Homi Bhabha National Institute, Mumbai	Assistant Professor
7.	January 2004 to July 2008	Variable Energy Cyclotron Centre, Kolkata	Scientific Officer-D
8.	August 2008 to June 2012	Variable Energy Cyclotron Centre, Kolkata	Scientific Officer-E

Educational Qualification:

S.N	Degree	Institute/University	Year	Specialization	Division
1	B.Sc	Utkal University	1994	Physics	1st (Best Graduate)
2	M.Sc	Utkal University	1996	Physics	1st (Gold Medalist)
3	PhD	Institute of Physics	2002	Experimental High Energy Physics (**WA98 experiment at CERN**)	Awarded best thesis by Indian Physics Association
4	Post-Doc	Variable Energy Cyclotron Centre, Kolkata	2002-03	Experimental High Energy Physics (**ALICE at CERN**)	Department of Atomic Energy K. S. Krishnan Fellow (Highest

		Lawrence Berkeley National Laboratory	2006-07	**STAR at RHIC**	paid PDF in the country that time) Offered Staff position - Declined

Awards and Recognitions:

1. Year 2021: Elected as **India-STAR-ALICE Collaboration Spokesperson**
2. Year 2021: ALICE Conference Committee Member, LHC, CERN, Geneva
3. Year 2020: **Fellow of American Physical Society.** *Citation: "For distinguished contributions to the study of the quantum chromodynamics phase diagram and the search for the QCD critical point in high-energy nuclear collisions at both the Relativistic Heavy Ion Collider and the Large Hadron Collider."*
4. Year 2019-2020: **Visiting Professor** Position in Institute of Modern Physics, Chinese Academy of Sciences (CAS), Lanzhou, China as part of **CAS President's International Fellowship Initiative (PIFI)**.
5. Year 2017: Awarded Prestigious **J C Bose National Fellow**, Department of Science and Technology, Govt of India, New Delhi.
6. Year 2017: Elected **Fellow of National Academy of Sciences India (NASI)**, Allahabad.
7. Year 2017: Elected **Fellow of Indian Academy of Sciences** (IAS), Bangalore.
8. Year 2017: Awarded **Utkalmani Yuva Prativa Samman-2017 in the field of Education** by 'The Samaja', a Premier Odia Daily.
9. Year 2017: **Editor of International Journal of Modern Physics E** (World Scientific Publishing).
10. Year 2016: Elected **Fellow of Indian National Science Academy (INSA) New Delhi** (effective from 1st January 2017) *Citation: For his influential contributions and leadership in the international STAR collaboration on the phase diagram of strongly interacting nuclear matter and for his collaborative work with theorists to help pinpoint the critical point of this phase diagram from experimental measurements of heavy ion collisions.*
11. Year 2015: **Shanti Swarup Bhatnagar Prize (Highest scientific prize in India)**. *Citation: For his outstanding contributions and leadership role in determining the QCD crossover temperature, a fundamental parater of strong interaction physics and discovery of the heaviest anti-matter nuclei, with implications for the fields of nuclear physics, astrophysics and cosmology.*
12. Year 2014-2017: Elected member of **Editorial Board ALICE** experimental at the Large Hadron Colider Facility, CERN, Geneva.
13. Year 2011-2014 : **Deputy Spokesperson** STAR Experiment at Relativistic Heavy Ion Collider Facility at Brookhaven National Laboratory, New York, USA.
14. Year 2010-2011 : **SwarnaJayanti Fellowship**- Department of Science and Technology, Govt. of India.
15. Year 2010: Outstanding Research Investigator award- **DAE-Science Research Council Fellowship**- Govt. of India. (Council Membership: Prof. C. N. R Rao, Prof. P. Rama Rao, Prof. R. Chidambaram, Prof. Obaid Siddiqui, Dr. R. Grover, AEC Chairman and Director BARC).
16. Year 2008-2011 : **Physics Coordinator** STAR Experiment, Brookhaven National Laboratory, New Year, USA.
17. Year 2006 : Young Scientist award – Department of Atomic Energy, Govt of India.
18. Year 2003: **Associate of Indian Science Academy**, Bangalore.
19. Year 2003: **INSA Young Scientist Medal** – Indian National Science Academy, New Delhi.
20. Year 2002: Best thesis award in nuclear physics, Indian Physics Association.
21. Year 2002: Dr. K.S. Krishnan Fellowship – Department of Atomic Energy and Board of Research in Nuclear Sciences, Govt. of India *(At that time the highest paid RA position in*

India).

22. Year 1997: L.K. Panda Award, Institute of Physics, Bhubaneswar.
23. Year 1997: Junior Research Fellowship in Physical Sciences, by CSIR New Delhi and eligibility for lectureship by UGC, New Delhi.
24. Year 1996: **University Gold Medal**, Utkal University, Bhubaneswar.
25. Year 1994: Best Graduate Trophy for all streams in Bachelor program, Utkal University.

Supervised 11 PhD students for degree:

1. **Dr. Md. Nasim**, postdoctoral fellow at UCLA, USA and then *Faculty at Indian Institute of Science Education and Research, Berhampur.*
2. **Dr. Chitrasen Jena**, postdoctoral fellow at University of Padova, Italy, and then *Faculty at Indian Institute of Science Education Research, Tirupati.*
3. **Dr. Ranbir Singh**, visiting scientist at University of Catania, Italy and then *Scientist at NISER.*
4. **Dr. Subhash Singha**, initially postdoctoral fellowship at KSU, USA stationed at BNL, USA, now *Chief scientist at Institute of Modern Physics, Lanzhou, China*
5. **Dr. Md. Rihan Haque**, initially postdoctoral fellow at University of Utrecht, Netherlands, now postdoctoral fellow at Warsaw, Poland. Honorable mention – Rahul Basu best thesis award in high energy physics.
6. **Dr. Sabita Das**, postdoctoral fellow at CCNU, Wuhan, China and then *Faculty at KKS Govt. Women's College, Balasore.*
7. **Dr. Kishora Nayak**, postdoctoral fellow at CCNU, Wuhan.
8. **Dr. Vipul Bairathi**, postdoctoral fellow at University of Tarapaca, Chile
9. **Dr. Debadeepti Mishra**
10. **Dr. Sourav Kundu,** *CERN Fellow, Geneva*
11. **Dr. Ashutosh Dash,** *Humboldt Fellow at Frankfurt Institute of Advanced Studies*

Supervised Master's Thesis for 15 students:

1. **Dr. Roli Esha**, was graduate student at **UCLA, USA** (*Best MSc Thesis Award*), current postdoctoral fellow at **SUNY, USA**
2. **Dr. Evan John Phillip**, was graduate student at University of Stony Brook, USA, currently postdoctoral fellow at BNL, USA.
3. **Mr. Arabinda Behera**, currently graduate student at **University of Stony Brook, USA** (*Best MSc Thesis Award*).
4. **Mr. Himangshu Neog**, currently graduate student at **Texas A&M University, USA**.
5. **Mr. Amit Nanda**, currently graduate student at **Stefan Meyer Institute for Subatomic Physics, Austrian Academy of Sciences.**
6. **Mr. Rohith Saradhy**, currently graduate student at **University of Minnesota, USA**.
7. **Mr. Somadatta Bhatta**, currently graduate student at **SUNY, USA**.
8. **Mr. Ganesh Parida**, currently graduate student at **University of Wisconsin-Madison, USA**
9. **Mr. Diptanil Roy**, currently graduate student at **Rutgers University, New Jersey, USA**.
10. **Mr. Viraj Thakkar**, currently pursing Data Science at **New York University, USA**.
11. **Mr. Rik Bhattacharyya**, currently graduate student at **Texas A&M University, USA**.
12. **Mr. Aman Dimri**, has been offered graduate studentship at **SUNY, USA**
13. **Mr. Aranya Giri,** has been offered graduate studentship at **University of Houston, USA**
14. **Mr. Sharada P. Sahoo,** has been offered graduate studentship at **Texas A&M University, USA**.
15. **Mr. Aditya Prasad Dash,** has been offered graduate studentship at **UCLA, USA**

Supervised 12 Postdoctoral Fellows:

1. **Dr. Victor Roy**, Postdoctoral Fellow 2012, then was Alexander von Humboldt fellow FIAS, Frankfurt, Germany, currently *Faculty at NISER.*
2. **Dr. Anirban Lahari**, Postdoctoral Fellow 2013, followed by Postdoctoral Fellow at TIFR, Mumbai, Currently PDF in Germany.

3. **Dr. Sandeep Chatterjee**, Postdoctoral Fellow 2014, Followed by PDF at Warswa and Currently *Faculty position at IISER, Berhampur*.
4. **Dr. Sabyasachi Ghosh**, Postdoctoral Fellow 2015, D. S. Kothari Fellow at University of Calcutta and then *Faculty at Indian Institute of Technology, Bhilai*.
5. **Dr. Ajay Dash**, Postdoctoral Fellow 2015-2018, *Scientific Officer in School of Earth and Planetary Sciences, NISER*
6. **Dr. Purba Bhattacharya,** Postdoctoral Fellow 2015, then was Postdoctoral Fellow at Weisemann Institute, Israel.
7. **Dr. Meghna K K,** Postdoctoral Fellow 2016 – 2017, then was Postdoctoral Fellow in Warsaw.
8. **Dr. Ram Chandra Baral**, Postdoctoral Fellow 2017.
9. **Dr. Subhasis Samanta**, Postdoctoral Fellow 2017-2019, currently postdoctoral fellow at Warsaw, Poland
10. **Dr. Abhik Jash**, Postdoctoral Fellow 2018, currently postdoctoral fellow at Weismann Institute, Israel.
11. **Dr. Mriganka Mouli Mondal**, Postdoctoral fellow 2018-2019, currently postdoctoral fellow at SUNY, USA
12. **Dr. Mohammad Yousuf Jamal**, Postdoctoral fellow since 2019.

Teaching:

Teaches undergraduate at NISER, Bhubaneswar, core courses of Mechanics and Thermodynamics, Quantum Mechanics, Nuclear and Particle physics, Relativity, Laboratory courses related to Modern Physics, Nuclear Physics, Solid State Physics and Optics, has been lecturer at various international schools aboard (Tokyo Institute of Technology, **Japan**, Institute of Particle Physics, Wuhan, **China** and **Peking University, China**) and **SERC schools** (SERC School in theoretical high energy physics, SERC schools in experimental high energy physics) in India.

Academic/Scientific/Administrative Positions

Currently:

1. Member drafting Group of **Mega Science Vision 2035,** by Principal Scientific Advisor Office
2. **Member Conference Committee**, ALICE at LHC, CERN
3. **Member of Charter Committee** for the Electron Ion Collider (**EIC**) at BNL, USA
4. **Member of DST committee** on Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions (**FIST**) Program
5. Member Consultative Committee of Young Scientist, Department of Science and Technology, Govt. of India – to provide vision for Science in India.
6. **Member INDIA-CERN Task Force set up by DAE and DST to monitor all aspects of Indian participation at CERN.**
7. Member and representing India in **Advisory Committee of CERN Users** (ACCU) at CERN – appointed by D.G. CERN.
8. **Convenor of Undergraduate Board of studies**, HBNI, Mumbai (Deemed University)
9. Odisha Government nominated member to the **Syndicate of Utkal University**
10. Member **Physics Advisory Council, IIT Gandhinagar**
11. Executive Committee Member of Odisha Bigyan Academy.
12. Member Institutional Advisory Board/Departmental Advisory Board, NCERT, New Delhi.
13. Member **Board of Studies for Physical Sciences**, HBNI, Mumbai (Deemed University).
14. Member **Senate of IISER, Berhampur**.
15. Member **Board of Governors, NISER**.
16. Member Academic Council, CET, Govt. of Odisha.
17. **Dean of Faculty Affairs, NISER** (Since 2013).
18. Member STAR Experiment Council, BNL, USA (Since 2012).
19. Member Collaboration Board, ALICE, LHC, CERN (Since 2013).
20. Member of Council of Super CDMS (Dark Matter experiment) (Since 2015).

21. Member Subject Research Committee of P.G. Department of Physics, Utkal University (Since 2012).
22. Member Academic Council, NISER (Since 2012).
23. Life member of Indian Physics Association; Member of American Physical Society; Member of National Academy of Sciences, India.
24. Member Planning Committee of Experimental High Energy Physics SERC Schools, Department of Science and Technology, Govt. of India (Since 2015).
25. Reviewer of applications of prestigious D. S. Kothari Postdoctoral Fellowship by Universities Grants Commission of India.
26. Executive committee member of Indian Physics Association (since 2021)

Previously:

1. **Deputy Spokesperson**, STAR Experiment, BNL USA (2011-2014).
2. **Physics Analysis Coordinator**, STAR Experiment, BNL, USA (2008-2011).
3. Co-convenor of Spectra Physics Working Group, STAR Experiment, BNL, USA (2006-2008).
4. Member ALICE experiment **Editorial Board**, LHC, CERN (2014-2018).
5. Coordinator ALICE-India light flavour spectra group and Chair ALICE-India Physics Analysis task force
6. Chairperson School of Physical Sciences, NISER - 2013-2019.
7. Chairman Post Graduate Council of Schools, NISER
8. Member Disciplinary Action Committee, NISER
9. Member of STAR Experiment Decadal Plan Committees for future physics prospects and programs of STAR at RHIC, BNL, USA.
10. Member of 2009/2010 RHIC & AGS Users Executive Committee, BNL, USA
11. Member STAR Beam User Request Preparation committee in the years 2008, 2009 and 2010.
12. STAR Trigger Board in the year 2008, 2009 and 2010 and STAR By-laws committee
13. Presented the case of high energy nuclear physics in DAE-DST Vision Meeting of Nuclear, Particle and High Energy Physics (Long range plan), August 2014.
14. Member Committee on Formulation of Academic Master Plan for Second Campus of Ravenshaw University.
15. Member of Committee to evaluate the institutional developmental plans for higher education in Odisha, Govt. Of Odisha and World Bank joint program.

Organizing or Advisory Committee Member of Conferences (Selected list):

1. International Advisory Committee Member - **Quark Matter 2022**, Krakow, **Poland**
2. International Advisory Committee Member - **Asia-Europe-Pacific School of High-Energy Physics 2022**, **South Korea**
3. International Advisory Committee Member - **Strange Quark Matter 2021**, BNL **USA**
4. **Chair of the DAE-BRNS Symposium on High Energy Physics,** December 2020, NISER, India - https://www.niser.ac.in/daehep2020/
5. **Member Rapid Reaction Task Force** "Dynamics of critical fluctuations: Theory – phenomenology – heavy-ion collisions", which was organized by the ExtreMe Matter Institute EMMI and held at GSI, Darmstadt, Germany in April 2019: https://doi.org/10.1016/j.nuclphysa.2020.122016
6. International Advisory Committee Member - **Quark Matter 2019**, Wuhan, **China**
7. International Advisory Committee Member - **Strange Quark Matter 2019**, Bari, **Italy**
8. International Advisory Committee Member - Asian Triangular Heavy-Ion Conference 2018, USTC, China
9. Director SERC School on Experimental High Energy Physics, NISER, November 7 – 27, 2017.
10. International Advisory Committee Member **Strangeness in Quark Matter**, Utrecht, **Netherlands** from July 10 – 15, 2017.
11. International Advisory Committee Member **Strangeness in Quark Matter**, UC

Berkeley Clark Kerr Campus, **Berkeley, USA** from June 27 – July 1, 2016.

12. International Advisory Committee Member Asian Triangular Heavy-Ion Conference, New Delhi 15-19 February 2016.
13. International Advisory Committee Member **Strangeness in Quark Matter**, **Dubna**, July 6-11, 2015.
14. Member of International Program Committee for the international conference on "Heavy ion collisions in the LHC era", Qui Nhon, in central Vietnam, 27th - 31st July, 2015.
15. International Advisory Committee Member **Strangeness in Quark Matter**, **Birmingham** (SQM2013) - July 22-27 2013.
16. Organizing Committee Member National Meeting on Physics of Heavy Flavour - HF India Meet 2013 IIT, Mumbai, 29-Apr to 01-May-2013.
17. Member National Organizing Committee DAE HEP Symposium, Shantiniketan, January 13-19, 2013.
18. Member of International Program Committee for the international conference on "Heavy ion collisions in the LHC era", Qui Nhon, in central Vietnam, 15th - 21st July, 2012.
19. International Advisory Committee Member for Asian Triangular Heavy Ion Conference, Pusan, Korea, 7 - 10th November 2012.
20. Co-ordinator Non-perturbative Strong Interaction Physics, Workshop on High Energy Physics Phenomenology XII, Mahabaleswar 02 - 15 January, 2012.
21. International Advisory Committee Member for The 40th (XL) edition of the **International Symposium on Multiparticle Dynamics** will be held in Antwerp, **Belgium**, 21-25, September 2010.
22. Organizing Committee Member of the 6th International Conference on Physics and Astrophysics of Quark Gluon Plasma, Goa, (ICPAQGP 2010), December 5 - 10, 2010.
23. Scientific secretary and Organizing Committee member of Understanding the Universe through LHC on 28 February, 2009 an outreach program, held at VECC/SINP, Kolkata, India.
24. Organizing Committee member, 20th International Conference on Ultra- relativistic Heavy ion Collisions (Quark Matter 2008), Jaipur, India, February, 2008.
25. Co-ordinator QCD-QGP working group WHEPPX, Xth WORKSHOP ON HIGH ENERGY PHYSICS PHENOMENOLOGY (WHEPP-X), Institute of Mathematical Sciences (IMSc), Chennai, India, from Jan 2-13, 2008.
26. Organizing Committee member of BRNS Workshop on Quark Gluon Plasma (QGP Meet 2006), Kolkata, India, February 5-7, 2006.
27. Scientific secretary and Organizing Committee member of the 5th International conference on physics and astrophysics of quark gluon plasma, Kolkata, India, February 8-12, 2005.

Selection Committee, Referee and Examiner (Selected list):

1. Referee for the Physical Review Letters, Physical Review, Physics Letters B, Modern Physics Letters, Journal of Physics G, Current Science and Pramana journals.
2. **Project Reviewer**: Veni grant in the Innovational Research Incentives Scheme, **Netherlands Organisation for Scientific Research**, Hague, Netherlands
3. **Project reviewer**: Lise Meitner-Postdoctoral -position received by the **Austrian Science Fund**, Vienna, Austria
4. **Project Reviewer**: **Office of Nuclear Physics (NP) within the Department of Energy Office of Science, USA (evaluated research projects for grants received from MSU, LANL, Purdue University, Wayne State, SUNY etc)**
5. **Project Reviewer** of grant proposal for **National Science Centre in the OPUS funding scheme, Poland Project Reviewer** of grant proposal for **National Science Centre in the OPUS funding scheme, Poland**
6. **Referee for Shanti Swarup Bhatnagar Prize, CSIR, Govt. of India**
7. Ph. D Thesis Examiner at IIT, Calcutta UNiversity and Utkal University, MSc

examiner Sambalpur University

8. Member of interview board for Kishore Vaignanik Protsahan Yojana program since 2012
9. Faculty selection committee member at Institute of Physics, Bhubaneswar, IIIT, Bhubaneswar, IISER, Tirupati, IIT Bhubaneswar, IISER Berhampur and NISER, Bhubaneswar. Promotion committee member /evaluator at NISER, Bhubaneswar, IISER Berhampur, IIT Madras, IIT Bombay, Jammu University.
10. Selection committee of doctoral students at IOP, Bhubaneswar, VECC, Kolkata and NISER, Bhubaneswar
11. Reviewer of Tsinghua University, **China 221 Program Evaluation**
12. Evaluator of seed money grant proposal, IIT, Bhubaneswar
13. Member of Selection Committee for Rahul Basu memorial best thesis award in the area of high-energy physics since 2012.
14. Member on Committee for Academic Master Plan of second campus of Ravenshaw University

Invited Talks Selected (*talks in the highest conference in the field/Prestigious):

Sl. No	Invited Talk/Session Chair	Conference/Workshop/Symposium/Institute	Place	Date
76	QCD phase structure in high energy nuclear collisions	Quark Matter Research Centre Colloquium.	IMP, Lanzhou China	29th October 2020
***75**	**Spin alignment measurements of vector mesons with ALICE at LHC**	**ICHEP2020 conference**	**Prague, Czech**	**28 July – 6th August 2020**
74	RHIC – Beam Energy Scan Program: Experimental Highlights	Peking University	Beijing, China	4th August 2020
73	Beam Energy Scan Program at RHIC	Czech Technical University Colloquium	Prague, Czech	27th November 2020
72	Experimental measurements of critical fluctuations	Workshop on Criticality and Chirality: Novel Phenomena in Heavy Ion Collisions May 11 - 22, 2020, Institute of Nuclear Theory, University of Washington, USA	Virtual Workshop, INT, University of Washington, USA	15th May 2020
71*	**Spin alignment of vector mesons measured in Pb-Pb collisions with ALICE**	**CERN-LHC seminar**	**CERN Main Auditorium, Geneva**	**28th January 2020**
70	Indian participation in Heavy-ion and EIC related experiments	QCD with Electron Ion Collider (EIC)	IIT Bombay, Mumbai	4-7th January 2020
69	existing and future experimental efforts of the STAR experiment regarding the measurements of fluctuations	EMMI Rapid Reaction Task Force "Dynamics of critical fluctuations: theory - phenomenology - HIC	GSI Darmstadt, Germany	8-12th April 2019
68	Hadron Spectra in beam Energy Scan Program at RHIC	ATHIC	USTC, Hefei, China	4th November 2018
67	Properties of a Plasma of	Indian Institute of Science	Tirupati, India	16th

	Quark and Qluons	Education and Research		November 2018
66*	**Measurements of spin alignment of vector mesons and global polarization of hyperons with ALICE at the LHC**	**Strangeness in Quark Matter 2017, University of Uretch, Netherlands, 14th July 2017**	**Netherlands**	**14th July 2017**
65.	Hadron Resonance Gas Model, Fluctuations and the QCD Phase Diagram	International EMMI Workshop on Critical Fluctuations near QCD Phase Boundary in Relativistic Nuclear Collisions	Wuhan, China	October 10-15, 2017
64.	The Phase Diagram of QCD (Colloquium)	Indian Institute of Technology, Madras	Chennai, India	18th January 2017
63.*	**Freeze-out dynamics in heavy-ion collisions**	**Strangeness in Quark Matter**	**UC Berkeley Clark Kerr Campus, Berkeley, USA**	**June 27 – July 1, 2016**
62.	De-confined state of quarks and gluons – Quark Gluon Plasma (Colloquium)	NSF Colloquium Tata Institute of Fundamental research	Mumbai, India	4th May 2016
61.	New form of Matter: De-confined state of Quarks and Gluons	TIFR Centre for Interdisciplinary Sciences	Hyderabad, India	28th April 2016
60.	New form of Matter: De-confined state of Quarks and Gluons (Colloquium)	International Centre for Theoretical Studies (ICTS)	Bangalore, India	18th April 2016
59.	Phases of QCD	Indian Institute of Technology Bombay	Mumbai, India	9th April 2016
58.	New form of Matter: De-confined state of Quarks and Gluons	Indian Institute of Science Education and Research	Kolkata, India	5th March 2016
57.	New form of Matter: De-confined state of Quarks and Gluons (Colloquium)	Saha Institute of Nuclear Physics	Kolkata, Idnia	24th February 2016
56	Physics of Relativistic Heavy-Ion Collisions	6th Asian Triangular Heavy Ion Conference	New Delhi	February 15-19, 2016
55.	Freeze-out Dynamics at RHIC Beam Energy Scan Program	Strongly Interacting Hot and Dense Matter: Theory and Experiment	GSI, Darmstadt, Germany	November 2-6, 2015
54.	Search for Critical Pointin QCD phase Diagram	13th international eXtreme QCD (XQCD)	Central China Normal University (CCNU), Wuhan, China	September 21-23, 2015
53.	Freeze-out dynamics in high energy heavy-ion collisions	Discussion Meeting on High Moment of Net-charge, Net-Kaon and Net-protons in High-Energy Nuclear Collisions	Lawrence Berkeley National Laboratory, Berkeley USA	June 22-24, 2015
52.	Search for QCD Critical Point and Beam Energy Scan	7th International Conference on Physics and Astrophysics of Quark Gluon Plasma	VECC/SINP Kolkata, India	February2-6, 2015

		(ICPAQGP-2015)		
51.	Exploring the QCD phase diagram through high energy nuclear collisions at RHIC	QCD at High Density	TIFR, Mumbai, India	January 27-30, 2015
50.	Experimental Overview of the QCD Phase Diagram	5th Asian Triangle Heavy Ion Conference (ATHIC) 2014	Osaka University, Japan	August 5 - 8, 2014
49.	Baselines for high moment analysis to study QCD Phase Diagram	Topical Meeting on High Moment Analysis in High Energy Nuclear Collisions	Central China Normal University, Wuhan, China	July 10 - 16, 2014.
48.*	**Study of QCD phase structure through high energy heavy-ion collisions**	**New Frontiers in QCD 2013, Yukawa Institute of Theoretical Physics**	**Kyoto, Japan**	**November 18 - December 20, 2013**
47.	Exploring the QCD phase structure through relativistic heavy-ion collisions	International Symposium on Nuclear Physics	Mumbai, India	December 2-6, 2013.
46.	A new state of matter in relativistic heavy-ion collisions	Workshop on High Energy Physics and Phenomenology, WHEPP13	Puri, India	December 12-21, 2013
45.	Exploring the QCD phase structure through relativistic heavy-ion collisions	International Nuclear Physics Conference	Frienze, Italy	June 2-7 , 2013
44.	High Energy Nuclear Collisions and Phase Diagram of strong interactions	National Conference on Nuclear Physics, NCNP 2013	Sambalpur, India	March 01-03, 2013
43.*	**QCD Phase Diagram, An Overview**	**8th International Workshop on Critical Point and Onset of Deconfinement, CPOD 2013**	**Nappa Valley, CA, USA**	**March 11-15, 2013**
42.	Results from the Beam Energy Scan Program at RHIC	EMMI Workshop	GSI, Darmstadt, Germany	February 15, 2013
41.	Phi-meson production a probe for de-confinement transition in high energy heavy-ion collisions	Lawrence Berkeley National Laboratory	Berkeley, USA	December 4, 2012
40.	Summary of RHIC results and future directions	University of California, Los Angeles	Los Angeles, USA	December 3, 2012
39.	Beam Energy Scan Program at RHIC	Asian Triangle Heavy Ion Conference 2012	Haeundae, Pusan, South Korea	November 14, 2012
38.	Relativistic Heavy Ion Collider Experiments: What have we learned?	QGP-Meet 2012	Variable Energy Cyclotron Center, Kolkata, India	July 3, 2012
37.	Results from the Relativistic Heavy Ion Collider	DAE-BRNS Symposium on Nuclear Physics	Andhra University, Vishakhapatana	December 26-30, 2011

			m, India	
36.	Studying the QCD phase diagram using conserved number distributions in high energy collisions	7th International Workshop on Critical Point and Onset of Deconfinement	Institute of Particle Physics (CCNU), China	7-11 November 2011
35. *	**STAR experiment results from the beam energy scan program at RHIC**	**XXII International Conference on Ultrarelativistic Nucleus-Nucleus Collisions (QM2011)**	**Annecy, France**	**23-28 May 2011**
34.	Possible evidence for thermalization at RHIC	The Phase Diagram of QCD - Bring your own	Tata Institute Of Fundamental Research, Mumbai, India	December 13 - 14, 2010
33.*	**Exploring the QCD landscape with high-energy nuclear collisions**	**2010 Annual Fall Meeting of the APS Division of Nuclear Physics**	**Convention Center in downtown Santa Fe, NM, USA**	**November 2-6, 2010**
32.	QCD Critical Point	Third Asian Triangle Heavy-Ion Conference (ATHIC 2010)	Institute of Particle Physics, Central China (Hua-Zhong) Normal University, Wuhan, China	October 18-20, 2010
31.	Search for the QCD Critical Point	QCD IN THE MEDIUM	Department of Physics, University of Calcutta, India	4 - 6 October 2010.
30.	Experimental study of the QCD phase diagram using high energy nuclear collisions	Strong Interactions in the 21st Century	Tata Institute Of Fundamental Research, Mumbai, India	February 10 - 12, 2010
29.	Current status of Thermalization from available STAR results	Workshop on critical point, fluctuations and thermalization	Jammu University, Jammu (Patnitop), India	17th Sept to 19th Sept, 2009
28.	Experimental study of the QCD phase diagram and search for the critical point at RHIC	Free Meson Seminar	Tata Institute of Fundamental Research, Mumbai, India	June 23, 2009
27.	Search for the QCD Critical Point Through Study Of Higher Moments Of E-by-ENet-Proton Distributions	Heavy Ion Tea Seminar	Lawrence Berkeley National Laboratory, Berkeley, USA	April 14, 2009
26. *	**Phase transitions, Fluctuations and Correlations**	**21st International conference on nucleus-nucleus collisions at ultrarelativistic energies, QM2009**	**Knoxville, USA**	**March 30 - April 4, 2009**
25.	New Results from Relativistic Heavy Ion Collider	Homi Bhabha Centenary DAE-BRNS Symposium on High Energy Physics 2008	Varanasi, India	14-18 December 2008
24.	Probe the QCD phase	Strange Quark Matter	Beijing, China	6-10 October

	diagram with phi-mesons in high energy nuclear collisions	2008		2008
23. *	**STAR results on medium properties and response of medium to highly energetic partons**	**20th International conference on ultra relativistic nucleus-nucleus collisions, QM2008**	**Jaipur, India**	**February 4-10, 2008**
22.	Search for the color factor effect at RHIC	International Symposium on Multiparticle Dynamics	LBNL, Berkeley, USA	August 4-9, 2007
21.	Search for Effects of the QCD Color Factor in High-Energy Collisions at RHIC	Nuclear Science Division Special Seminar	Lawrence Berkeley National Laboratory, Berkeley, USA	May 29, 2007
20.	Effect of color charge dependence on energy loss at RHIC	23rd Winter workshop on nuclear dynamics (WWND07)	Big Sky, Montana, USA	February 12-18, 2007
19. *	**Properties of particle production at large transverse momentum in Au+Au and Cu+Cu collisions at RHIC**	**Quark Matter 2006, 19th International Conference on Ultra-relativistic Nucleus-Nucleus Collisions**	**Shanghai, China**	**November, 2006**
18.	A view on present and vision for future	VECC Foundation Day Celebration, R and D Activities at VECC - Present and Future	Kolkata, India	June 16, 2006
17.	Experimental results from forward rapidity at RHIC	QGP MEET 2006	Kolkata, India	February 6, 2006
16.	Results from STAR experiment at RHIC	9th Workshop on High Energy Physics Phenomenology(WHEPP-9)	Bhubaneswar, India	January 3-14, 2006
15.	Results from the Relativistic Heavy Ion Collider	50th DAE-BRNS International Symposium on Nuclear Physics	Mumbai, India	December 12-16, 2005
14.	Results on transverse momentum spectra in p+p and d+Au collisions from STAR experiment at RHIC	47th Workshop on Physics of Hadronic Interaction at LHC withNucleons and Nuclei and Phase Transition Physics and "The 1st physics ALICE week	Erice, Italy	December 2-10, 2005
13.	Identified hadron spectra at large transverse momentum in p+p and d+Au at 200 GeV	Brookhaven National Laboratory Nuclear Physics Seminar	Brookhaven National Laboratory, USA	November 22, 2005
12.	Particle production in p+p, d+Au and Au+Au collisions at RHIC	Lawrence Berkeley National Laboratory Nuclear Physics Seminar	Lawrence Berkeley National Laboratory, USA	November 17, 2005
11.	First results from Photon Multiplicity Detector at RHIC	5th International conference on physics and astrophysics of quark-gluonplasma	Kolkata, India	February 8-12, 2005
10.	**Particle Production at**	**Quark Matter 2005, 18th**	**Budapest,**	**August 4,**

*****	**forward rapidity in d+Au and Au+Au collisions**	**International Conference on Ultra-relativistic Nucleus-Nucleus Collisions**	**Hungary**	**2005**
9.	Photon and charged particle multiplicity fluctuation and correlation in 158 AGeV/c Pb on Pb collisions	Wayne State University	Detroit, USA	February 2003
8.	Disoriented Chiral Condensates: Experimental Review	QGP Meet 2004	Institute of Physics, Bhubaneswar, India	October 2004
7.	Fluctuations and QCD Phase transitions	QGP Meet 2003	Variable Energy Cyclotron Centre, Kolkata, India	May 2003
6. *****	**Particle Density Fluctuations**	**XVI International Conference on Ultra-Relativistic Nucleus-Nucleus Collisions (Quark Matter 2002)**	**Nantes, France**	**July 17-24, 2002**
5.	Some interesting results from high energy heavy-ion collision experiments	Alumni and Foundation day of the Institute of Physics.	Institute of Physics, Bhubaneswar, India	September 3-4, 2002
4.	Fluctuation in photon and charged particle multiplicities at SPS and it's prospect at RHIC and LHC	DAE-BRNS symposium on nuclear physics	SINP/VECC Kolkata, India	December 26-30, 2001
3.	Photon multiplicity detector : From SPS to RHIC and LHC	International conference on physics and astrophysics of quark-gluon plasma	Jaipur, India	November 26-30, 2001
2.*****	**Localized charged-neutral fluctuations in 158 A GeVPb + Pb collisions**	**CERN Heavy Ion Forum "on Event-by-event physics**	**CERN, Geneva, Switzerland**	**June 21-22 2001**
1.	Search for disoriented chiral condensates in 158.A GeVPb+Pb collisions in WA98 experiment	Relativistic heavy-ion physics (RHIP'99). Hot and dense matter	Prague, Czech republic	August 30 - 3 September, 1999

Top 10+ Publications

Authors	Year	Title	Journal	Vol.	Page	Citations and Impact Factor (IF)	Remark

S. Gupta, X. Luo, B. Mohanty H. Ritter N. Xu	2011	Scale for the Phase Diagram Of Quantum Chromodynamics	Science	332	1 5 2 5	234 and 41 (IF)	Corresponding author
STAR Collaboration	2011	Observation of Anti-matter Helium-4 nucleus	Nature	473	3 5 3	136 and 38.6 (IF)	Part of PhD Thesis of my student and I as the head of the Paper Committee
	2010	Observation of An antimatter hypernucleus	Science	328	5 8	222 and 31 (IF)	Physics Analysis Leader of experiment
STAR Collaboration	2021	Nonmonotonic Energy Dependence of Net-Proton Number Fluctuations	Physical Review Letters	126	0 9 2 3 0 1	65	Corresponding author and primary author
	2014	Energy Dependence Of Moments of net Proton Distributions At RHIC	Physical Review Letters	112	0 3 2 3 0 2	460 and 7.9 (IF)	
	2010	Beam Energy Dependence of moments of the net charge multiplicity distributions in Au+Au collisions at RHIC	Physical Review Letters	113	0 9 2 3 0 1	313 and 7.9(IF)	
		Higher Moments Of net-proton Multiplicity Distributions at RHIC	Physical Review Letters	105	0 2 2 3 0 2	333 and 7.9 (IF)	
STAR Collaboration	2017	Bulk Properties of the Medium Produced in Relativistic	Physical Review C	96	0 4 4 9 0	299 and 2.9 (IF)	Primary author PRC – Editors Suggestion

		Heavy-Ion Collisions from the Beam Energy Scan Program			4		
STAR Collaboration	2016	Centrality and Transverse momentum dependence of elliptic flow of multi-strange hadrons and phi-meson in Au+Au collisions at 200 GeV	Physical Review Letters	116	0 6 2 3 0 1	49 and 7.9(IF)	Primary Author
	2013	Observation of an Energy-dependent Difference in Elliptic flow Between particles And anti-particles In relativistic Heavy ion collisions		110	1 4 2 3 0 1	84 and 7.9 (IF)	
STAR Collaboration	2009	Energy and System Size Dependence of Phi meson Production in Cu+Cu and Au+ Au collisions	Physics Letters B	673	1 8 3	100 and 4.5 (IF)	Primary Author and Corresponding author
STAR Collaboration	2007	Energy Dependence of pi+/-, p and pbar transverse momentum spectra in Au+Au collisions at 62.4 and 200 GeV	Physics Letters B	655	1 0 4	208 and 4.5 (IF)	Primary Author and Corresponding author
STAR Collaboration	2006	Identified hadron Spectra at large	Physics Letters B	637	1 6 1	301 and 4.5 (IF)	Primary Author and Corresponding author

		Transverse Momentum in p+p and d+Au collisions at 200 GeV					
B. Mohanty J. Serreau	2005	Disoriented Chiral Condensates: Theory and Experiment	Physics Reports	414	263	58 and 22.9 (IF)	First author
STAR Collaboration	2005	Multiplicity and Pseudorapidity Distributions of Photons in Au+Au collisions at 62.4 GeV	Physical Review Letters	95	062301	53 and 7.9 (IF)	Primary Author and Corresponding author ONLY PRL from India Detector in Heavy-ion experiments
STAR Collaboration	2005	Experimental and Theoretical Challenges in the Search for the Quark gluon Plasma: The STAR Collaboration's critical assessment of the evidence from the RHIC collisions	Nuclear Physics A	757	102	**3296** and 1.5 (IF)	Several of analysis results are part of this white paper
ALICE Collaboration	2021 2020	Evidence of Spin-Orbital Angular Momentum Interactions in Relativistic Heavy-Ion Collisions Evidence of rescattering effect in Pb-Pb collisions at the LHC through production of K∗(892)0 and ϕ(1020) mesons	Phys. Rev. Lett. Physics Letters B	125 802	012301 135225	33 and 7.9(IF) 17 and 4.5 (IF)	All Primary Author Publications PRL – Editors suggestion

	2019	Measurement of Λ(1520) production in pp collisions at s\sqrt{s}s = 7 TeV and p-Pb collisions at 5.02 TeV	Eur. Phys. J. C	80	160	1 and 4.5 (IF)	
	2017	K∗(892)0 and ϕ(1020) meson production at high transverse momentum in pp and Pb-Pb collisions at 2.76 TeV	Phys. Rev. C	95	06460606	67 and 2.9 (IF)	
	2015	K∗(892)0 and ϕ(1020) production in Pb-Pb collisions at 2.76 TeV	Phys. Rev. C	91	02460609	215 and 2.9 (IF)	

8. Complete list of publication separately attached.

Project and Grants:

Particulars	Title of the Project	Period	Funding Agency	Amount (Rs)
Funding	1. QCD phase structure and nuclei production in accelerators and in the cosmos	2010-2016	DAE-BRNS	99,75,000
	2. Study of QCD matter in high energy heavy-ion collisions	2012-2017	DST	98,00,000
	3. Experimental High Energy Physics at NISER	2012-2019	DAE	150,00,000
	4. Beam Energy Scan program with Relativistic Heavy Ion Collisions and development of a Gas based Detector facility at NISER	2015-2018	SERB/DST	39,00,000
	5. CEFIPRA – Indo-French (joint project)	2016-2018 2017-2022	CEFIPRA DAE	108KEuros 600,00,000

	6. Dark Mater Experiment at NISER			
Proposals Pending	**Indian participation in the ALICE experiment at CERN (Project coordinator)** QCD Phase Structure Studies through Heavy-ion collisions Experimental High Energy Physics at NISER – ALICE	**2021-2025** 2021-2023 2021-2023	**DAE and DST (Final stage of sanction)** DAE	**960,00,000** 500,00,000 665,00,000

Institutions visited for research collaboration – long duration (selected list):

Institution	Year
CERN, Geneva, Switzerland	1998 – 2020 (several times)
Institute of Modern Physics, Lanzhou, China	2019
Brookhaven National Laboratory, Upton New York, USA	2000-2017 (several times)
Lawrence Berkeley National Laboratory, Berkeley, USA	2006-2016 (several times)
Yukawa Institute of Theoretical Physics, Kyoto and University of Tokyo, Osaka University, Japan	2014, 2010, 2014
GSI, Darmstadt, Germany	2013, 2014, 2015
Institute of Particle Physics, Wuhan China	2011, 2012, 2014, 2015
Pusan University, South Korea	2012

Outreach and Science Popularization:

1. "STAR experiment reports the discovery of anti-strange matter" – CURRENT SCIENCE, VOL. 99, NO. 7, 10 OCTOBER 2010, Page 873 .
2. "STAR experiment launches the QCD Critical Point Search Program at the Relativistic Heavy Ion Collider facility" – CURRENT SCIENCE, VOL. 100, NO. 5, 10 MARCH 2011, Page 618.
3. "STAR Experiment reports observation of the antimatter helium-4 nucleus" – CURRENT SCIENCE, VOL. 100, NO. 11, 10 June 2011, Page 1613 .
4. "Formation of a perfect fluid in high-energy heavy-ion collisions" – CURRENT SCIENCE, VOL. 103, NO. 11, December 2011, Page 1267 .
5. "Properties of a system of fundamental constituents of visible matter" – CURRENT SCIENCE, VOL. 106, NO. 6, March 2014, Page 798 .
6. Scientific secretary and Organizing Committee member of Understanding the Universe through LHC on 28 February, 2009 an outreach program, held at VECC/SINP, Kolkata, India.
7. Several Popular physics talks in INSPIRE INTERSHIP PROGRAM FOR YOUNG TALENTS (2012, 2013, 2014, 2015, 2016) Sponsored by: Department of Science and Technology (DST), Govt. Of India
8. Mentor to several summer students selected by Indian Academy of Sciences.

Description of the work

- **The strong interactions are** one of the four basic interactions that occur in nature. The phase diagram tells us how matter organizes itself when subject to variations in thermodynamic parameters and it is a key to **understanding the emergent properties of Quantum Chromodynamics (QCD).** While phase diagrams of systems of atoms and molecules interacting via the electromagnetic interaction have been very widely studied and precisely known (e.g. water), that for the strong interactions had remained a conjecture for a long time. Dr. Mohanty has significantly contributed towards the establishment of the Phase Diagram of QCD.

(a) Has led the physics program of a dedicated experiment at Brookhaven National Laboratory for the purpose of studying phase diagram of QCD called the "Beam Energy Scan Program".

(b) Has contributed to the establishment of the quark-hadron transition and its transition temperature. This work is published in **Science 332 (2011) 1525** and "Physics World" considered it among the 10 best in the year 2011.

His work has recently led to an exciting possibility of the existence of a critical point in the phase diagram of QCD. We have established the observable for the critical point search in the experiment, published in **Phys.Rev.Lett. 105 (2010) 022302. This** is considered as a landmark work in the field. Then, based on the first data of the beam energy scan program, we wrote an experimental paper that showed that the possible critical point region of the QCD phase diagram is near the beam energy of 20 GeV (temperature ~ 160 MeV and baryonic chemical potential ~ 400 MeV). This work is published in **Physical Review Letters 112 (2014) 032302.** Has very successfully led the beam energy scan physics program to publish so far **5 important scientific papers in Physical Review Letters**. The latest experimental paper on the topic of QCD Critical point search is published in **Physical Review Letters 126 (2021) 092301**. It reports first evidence of non-monotonic variation of fluctuation signals as a function of collision energy.

- ***Contribution to establishing the formation of a new phase of matter***, the Quark Gluon Plasma (QGP) in the laboratory. This state of matter existed in the first few microsecond old Universe. In such matter, quarks and gluons are de-confined and move freely in volumes much larger than nucleonic scales. In order to achieve such matter in the laboratory, temperatures of the order of 10^{12} degrees Kelvin need to be created. The quark-gluon plasma allows for studying transport properties like viscosity, thermal conductivity, opacity and diffusion co-efficient of QCD matter. Has several significant papers on signatures that experimentally confirm the existence of QGP, related to observation of strangeness enhancement in heavy-ion collisions – **Phys.Lett.B 673 (2009) 183,** jet quenching effect - **PRL 97 (2006) 152301 and Physics Letters B 655 (2007) 104, 637 (2006) 161 and** partonic collectivity **– PRL 116 (2016) 062301; PRL 99 (2007) 112301.** These are summarized in a review paper in **Nucl. Phys. A 757 (2005) 102.** They support the formation of a QGP that exhibits perfect fluidity (viscosity to entropy density ratio close to the quantum bound). These papers have total citations of about **3000**.

- ***The discovery of two new anti-matter nuclei***.
  (a) As the physics analysis leader of the experiment has led a team that discovered the heaviest known anti-matter nuclei the **anti-alpha** (consisting of two anti-protons and two anti-neutrons) in the laboratory. The discovery is published in **Nature 473 (2011) 353**. This measurement provided the probability of production of anti-helium through nuclear interactions, thereby providing the predominant baseline for measurements carried out in space.
  (b) As the physics analysis leader has led a team that discovered the heaviest strange anti-matter nuclei. Normal nuclei are formed only of protons and neutrons. Hyper-nuclei are made up of protons, neutrons and hyperons. The **anti-hypertrion**, nuclei consist of anti-proton, anti-neutron and anti-lambda (a strange hadron). This work is published in **Science 328 (2010) 58**. It has implications for neutron stars and also understanding of the nuclear force. To study nuclei, scientists arrange the various nuclides into a two-

dimensional table of nuclides. On one axis is the number of neutrons *N*, and on the other is the number of protons *Z*. The discovery of antihypertriton introduces a third axis (strangeness) and the table becomes three-dimensional.

- ***Disoriented Chiral Condensates (DCC) and Chiral Phase Transition.*** J. D. Bjorken, F. Wilczek and collaborators have advocated the existence of DCC due to chiral phase transitions in QCD matter. The possibility of producing quark-gluon plasma in high-energy collisions is an exciting one from the point of view of observing the chiral phase transition as the hot plasma expands and cools. As the system returns to its normal phase it is possible for regions of misaligned vacuum to be produced. These domains, which are analogous to misaligned domains of a ferromagnet, have been named Disoriented Chiral Condensates (DCCs). DCC's are regions where the chiral field is partially aligned in a isospin direction. These domains relax back to ground state configuration by emitting pions of a particular species. Towards this goal, and since a neutral pion readily decays to photons, has put in ***s***everal years of dedicated efforts from to ***establish photon production in heavy-ion collisions using a detector built in India*** and search for the signature of the chiral phase transition (through DCC). He was the lead author of the Physical Review Letters paper on inclusive photon production in heavy-ion collisions (**PRL-95 (2005) 062301**) using the Indian detector. His contribution to photon production and to the physics of DCC in heavy-ion collisions led to the invitation from the editorial board of Physics Reports to write a review article, published as – **Phys. Rept. 414 (2005) 263** titled "Disoriented Chiral Condensate – Theory and Experiment".

- ***Resonance production at LHC:*** Has been focusing on understanding resonance production at LHC for last 10 years. Two most important contributions at LHC energies : Evidence of spin-orbital angular momentum interactions in heavy-ion collisions and Evidence of re-scattering effects in hadronic phase of the heavy-ion collisions. The former has been published in **Physical Review Letters 125 (2020) 012301** and later is published in **Physics Letters B 802 (2020) 135225.**

- **Impact of the contributions:**

(a) His work has contributed to the experimental confirmation of the formation of the Quark Gluon Plasma. This has enabled the study of properties of QCD matter like viscosity, conductivity, diffusion co-efficient and opacity.

(b) His work has led towards the phase diagram of QCD becoming a reality: transition temperature, order of transition and two different phases have been established at zero baryonic chemical potential. The possibility of the existence of a critical point is seen in data.

(c) The discovery of anti-alpha and anti-hypertriton, have implications in the fields of cosmology, astro-particle physics and nuclear physics.

(d) Spin-orbit coupling causes fine structure in atomic physics and shell structure in nuclear physics, and is a key ingredient in the field of spintronics in materials sciences. His measurements at LHC establishes the spin-orbital angular momentum interactions in relativistic QCD matter. This was performed by the spin alignment measurement of the decay products of neutral K* and φ vector mesons produced in non-central Pb–Pb collisions in ALICE@CERN.

He has been invited to deliver plenary talks at important conferences in the field (Quark Matter and Strange Quark Matter) and he has given the conference summary talk on "phase transitions, critical point and correlations" at Quark Matter 2009. He has been elected as the **Fellow of American Physical Society in 2020**, citation of which reads: "*For distinguished contributions to the study of the quantum chromodynamics phase diagram and the search for the QCD critical point in high-energy nuclear collisions at both the Relativistic Heavy Ion Collider and the Large Hadron Collider."*

Within India his scientific work has been recognized through the award of the CSIR **Shanti Swarup Bhatnagar Prize** (highest scientific honour in India for scientists below the age of 45 years) and the DST **Swarna Jayanti Award** ((highest scientific honour in India for scientists below the age of 40 years). He has been elected as the fellow of all the **Three National Academics of Sciences** (INSA, New Delhi, IAS, Bangalore, NASI, Allahabad) in India.

Citation for Highest Scientific Award of India as signed by the Prime Minister of India: reads: "*For his outstanding contributions and leadership role in determining the QCD crossover temperature, a fundamental parameter of strong interaction physics and discovery of the heaviest anti-matter nuclei, with implications for the fields of nuclear physics, astrophysics and cosmology*."

Citation for the election as Fellow of India Academy reads: *"For his influential contributions and leadership in the international STAR collaboration on the phase diagram of strongly interacting nuclear matter and for his collaborative work with theorists to help pinpoint the critical point of this phase diagram from experimental measurements of heavy ion collisions."*

Statement regarding his contribution to Nuclear Physics Program in USA:

The research work and other scientific contributions of Dr. Mohanty as made significant contribution to Nuclear Physics Program in USA. It is recognized with his election as fellow of APS.

(a) As STAR Experiment, Deputy Spokesperson, from year 2011 to 2014. He has been involved in all decisions related to the experiment running and physics program at RHIC, BNL, USA. This includes preparation of Beam User Proposals for PAC, Decadal Plan Program for the experiment, Future Physics Possibilities of the experiment, Physics Analysis direction etc . Has presented the RHIC Science Case in various International Forums.

(b) As STAR Experiment, Physics Analysis Co-ordinator, from year 2008 to 2011. His primary responsibility was to manage the physics activities of STAR experiment at the Relativistic Heavy Ion Collider Facility, at Brookhaven National Laboratory, USA (http://www.star.bnl.gov/). Further to guide the various analysis being carried out and to give new ideas and direction for future analysis projects. Several new analysis directions were formulated during this period. STAR published 13 Physical Review Letters, One Nature, One Science paper and 35 other publications mostly Physical Review C. 51 students got there PhD from the STAR experiment during this period. 440 Physics Talks were given by STAR Collaboratos during this period.

(c) Convener of the STAR Physics Working Group, for years 2006-2008. Primary responsibility was to manage the physics activities of particle spectra working group in STAR experiment at the Relativistic Heavy Ion Collider Facility, at Brookhaven National Laboratory, USA. Several high impact papers were published which includes about 6 Physical Review Letters.

(d) Member of the STAR Talks Committee, for year 2006-2008. Primary responsibility was to advice the Sopkesperson and/or chooses a suitable candidate among the more than 400 physicists in the STAR experiment, to present its most important and new results at various conferences/symposiums/meetings.

(e) Executive Member of RHIC Users Committee at BNL

(f) Supervised directly 10 Masters student who are pursuing their PhD in USA Universities

(g) Supervised directly 5 PhD students who are helping the USA Science Nuclear Program as Postdoctoral Fellows.

(h) Has reviewed several DOE NP proposals and APS journal papers.

Statement regarding his contribution to Nuclear Physics Program in Europe:

(a) During his stay at CERN in 2019-2020 as Scientific Associate in the Experimental Physics Division at CERN, he led the program of spin alignment studies of vector mesons and the first evidence of the effect has been accepted for publication in PRL. He also showed experimental measurement of re-scattering effect in the hadronic

phase of the high energy heavy-ion collisions.

(b) He was the lead author of the Technical Design Report and the Addendum to the technical design report for the Photon Multiplicity Detector put in the ALICE experiment at LHC, CERN. A key person in the team for successful data taking by the detector and has guided the 1st PhD student who analysed the 1st data taken by the detector and successfully published it.

(c) Did is PhD in the WA98 experiment at CERN and published 4 papers out of a total of 21 papers from the collaboration with 100 members and 20 institutes world wide.

(d) As Editorial Board Member of ALICE at CERN contributes towards the physics program of the experiment

(e) As member of the collaboration board of ALICE at CERN contributes towards the running of the experiment and help in decision making at the highest forum of the experiment.

(f) Supervised masters, phd and postdoctoral fellows who work for various experiments at LHC, CERN.

(g) As stationed at CERN as scientific associate for one year. During which a new program of spin alignment measurements at LHC in heavy-ion collisions was formulated. The first work on this has been submitted to Physical Review Letters. Was invited to give a CERN-LHC seminar on this topic in January 2020. Focus area of research at LHC is resonance production.

Papers	**Citations**
Top 6 most cited primary author papers	
Experimental and theoretical challenges in the search for the quark gluon plasma: Nucl.Phys.A757:102,2005	3296
Identified baryon and meson distributions at large transverse momenta from Au+Au collisions at $\sqrt{s_{NN}}$ = 200-GeV: Phys.Rev.Lett.97:152301,2006	295
Identified hadron spectra at large transverse momentum in p+p and d+Au collisions at $\sqrt{s_{NN}}$ = 200-GeV: Phys.Lett.B637:161-169,2006	301
Higher Moments of Net-Proton Multiplicity Distribution at RHIC: Phys.Rev.Lett. 105:022302, 2010	333
Energy Dependence of High Moments of Net-Proton Distributions at RHIC. Phys. Rev. Lett. 112 (2014) 032302	460
Energy dependence of pi, p and pbar transverse momentum spectra for Au+Aucollisions at $\sqrt{s_{NN}}$ = 62.4 and 200 GeV: Phys.Lett.B655:104, 2007	208
Scale for the Phase Diagram of QCD, Science 332 (2011)1525	234

Editorial: Theme Issue on Hot and Dense matter: Edited by Bedangadas Mohanty and Sourendu Gupta, Pramana, 84 (2015) 669-941
http://www.ias.ac.in/listing/articles/pram/084/05

Outreach and Science Popularization

1. "STAR experiment reports the discovery of anti-strange matter" – CURRENT SCIENCE, VOL. 99, NO. 7, 10 OCTOBER 2010, Page 873 . **http://www.currentscience.ac.in/Downloads/download_pdf.php?titl**

eid=id_099_07_0873_0874_0

2. "STAR experiment launches the QCD Critical Point Search Program at the Relativistic Heavy Ion Collider facility" – CURRENT SCIENCE, VOL. 100, NO. 5, 10 MARCH 2011, Page 618. **http://www.currentscience.ac.in/Volumes/100/05/0618.pdf**
3. "STAR Experiment reports observation of the antimatter helium-4 nucleus" – CURRENT SCIENCE, VOL. 100, NO. 11, 10 June 2011, Page 1613 .**http://www.currentscience.ac.in/Volumes/100/11/1613.pdf**
4. "Formation of a perfect fluid in high-energy heavy-ion collisions" – CURRENT SCIENCE, VOL. 103, NO. 11, December 2011, Page 1267 . **http://www.currentscience.ac.in/Volumes/103/11/1267.pdf**
5. "Properties of a system of fundamental constituents of visible matter" – CURRENT SCIENCE, VOL. 106, NO. 6, March 2014, Page 798 . **http://www.currentscience.ac.in/Volumes/106/06/0798.pdf**
6. Scientific secretary and Organizing Committee member of Understanding the Universe through LHC on 28 February, 2009 an outreach program, held at VECC/SINP, Kolkata, India.
7. Several Popular physics talks in INSPIRE INTERSHIP PROGRAM FOR YOUNG TALENTS (2012, 2013, 2014, 2015, 2016) Sponsored by: Department of Science and Technology (DST), Govt. Of India
8. Mentor to several summer students selected by Indian Academy of Sciences.
9. Conduct Science Day Activities in NISER
10. NISER Astronomy Club (In association with the Science Activities Club) magazine, "Kshitij". http://www.niser.ac.in/~bedanga/thesis/Kshitij_May_2020.pdf

List of publications in standard refereed journals by Bedangadas Mohanty

Sl. No.	Author	Title of paper	Journal
449	STAR Collaboration (J. Adam, et al.) **(B. Mohanty Primary Author)**	Nonmonotonic Energy Dependence of Net-Proton Number Fluctuations	**Physical Review Letters 126 (2021) 092301**
448	Invited Review: N. Xu, K. Fukushima and **B. Mohanty**	The Little-Bang and the femto-nova in nucleus-nucleus collisions	**AAPPS Bull. 31, 1 (2021)**
447	ALICE Collaboration (Shreyasi Acharya, et al.) **(B. Mohanty Primary Author)**	Evidence of spin-orbital angular momentum interactions in relativistic heavy-ion collisions	**Physical Review Letters 125 (2020) 012301**
446	S. Banik, V.K.S. Kashyap, M.H. Kelsey, **B. Mohanty**, D.H. Wright	Simulation of energy loss of fractionally charged particles using Geant4.	Nuclear Inst. And Methods in Physics Research, A, 971 (2020) 164114
445	ALICE Collaboration (Shreyasi Acharya, et al.) **(B. Mohanty Primary Author)**	Evidence of rescattering effect in Pb-Pb collisions at the LHC through production of K∗(892)0 and ϕ(1020) mesons	Phys.Lett.B 802 (2020) 135225

444	ALICE Collaboration (Shreyasi Acharya, et al.)	Unveiling the strong interaction among hadrons at the LHC	Nature 588 (2020) 232-238
443	STAR Collaboration (J. Adam, et al.)	Measurement of the mass difference and the binding energy of the hypertriton and antihypertriton	Nature Phys. 16 (2020) 4, 409-412
442	STAR Collaboration (J. Adam, et al.)	First Observation of the Directed Flow of D0and $D0^{-}$ in Au+Au Collisions at 200 GeV	Phys.Rev.Lett. 123 (2019) 16, 162301
441	STAR Collaboration (J. Adam, et al.)	Polarization of Λ ($Λ^{-}$) hyperons along the beam direction in Au+Au collisions at 200 GeV	Phys.Rev.Lett. 123 (2019) 13, 132301
440	Md Rihan Haque, Md Nasim, **Bedangadas Mohanty**	Systematic investigation of azimuthal anisotropy in Au+Au and U+U collisions at 200 GeV	J.Phys.G 46 (2019) 8, 085104
439	STAR Collaboration (Jaroslav Adam, et al.) **(B. Mohanty Primary Author)**	Bulk Properties of the System Formed in Au+Au Collisions at 14.5 GeV	Phys.Rev.C 101 (2020) 2, 024905
438	ALICE Collaboration (Shreyasi Acharya, et al.) **(B. Mohanty Primary Author)**	Measurement of Λ(1520) production in pp collisions at 7 TeV and p-Pb collisions at 5.02 TeV	Eur.Phys.J.C 80 (2020) 2, 160
437	Ranbir Singh, **Bedangadas Mohanty**	Identification of Jet-like events using a Multiplicity Detector	Eur.Phys.J.C 79 (2019) 7, 562
436	Ashish Pandav, Debasish Mallick, **Bedangadas Mohanty**	Effect of limited statistics on higher order cumulants measurement in heavy-ion collision experiments	Nucl. Phys. A 991 (2019) 121608
435	Ashutosh Dash, Subhasis Samanta, **Bedangadas Mohanty**	Transport coefficients for multicomponent gas of hadrons using Chapman-Enskog method	Phys.Rev.D 100 (2019) 1, 014025
434	Ashutosh Dash, Subhasis Samanta, **Bedangadas Mohanty**	Thermodynamics of a gas of hadrons with attractive and repulsive interactions within an S - matrix formalism	Phys.Rev. C99 (2019) no.4, 044919
433	Subhasis Samanta, Sandeep Chatterjee, **Bedangadas Mohanty**	Exploring the hadron resonance gas phase on the QCD phase diagram	J.Phys. G46 (2019) 065106
432	ALICE Collaboration (Shreyasi Acharya, et al.) - **Significant contribution**	Multiplicity dependence of light-flavor hadron production in pp collisions at 7 TeV	Phys.Rev. C99 (2019) no.2, 024906
431	ALICE Collaboration (Shreyasi Acharya,	Suppression of Λ(1520) resonance production in central Pb-Pb	Phys.Rev. C99 (2019) 024905

	et al.) - **Significant contribution**	collisions at 2.76 TeV	
430	STAR Collaboration (Jaroslav Adam, et al.)	Collision-energy dependence of pt correlations in Au + Au collisions at energies available at the BNL Relativistic Heavy Ion Collider	Phys.Rev. C99 (2019) no.4, 044918
429	STAR Collaboration (Jaroslav Adam, et al.)	Azimuthal harmonics in small and large collision systems at RHIC top energies	Phys.Rev.Lett. 122 (2019) no.17, 172301
428	STAR Collaboration (Jaroslav Adam, et al.)	The Proton-Ω correlation function in Au+Au collisions at 200 GeV	Phys.Lett. B790 (2019) 490-497
427	ALICE Collaboration (Shreyasi Acharya, et al.)	Measurement of D0 , D+ , D$*$+ and D+s production in pp collisions at 5.02 TeV with ALICE	Eur.Phys.J. C79 (2019) no.5, 388
426	ALICE Collaboration (Shreyasi Acharya, et al.)	Charged-particle pseudorapidity density at mid-rapidity in p-Pb collisions at 8.16 TeV	Eur.Phys.J. C79 (2019) no.4, 307
425	ALICE Collaboration (Shreyasi Acharya, et al.)	Measurement of dielectron production in central Pb-Pb collisions at 2.76 TeV	Phys.Rev. C99 (2019) no.2, 024002
424	ALICE Collaboration (Shreyasi Acharya, et al.)	p-p, p-Λ and Λ-Λ correlations studied via femtoscopy in pp reactions at 7 TeV	Phys.Rev. C99 (2019) no.2, 024001
423	ALICE Collaboration (Shreyasi Acharya, et al.)	Analysis of the apparent nuclear modification in peripheral Pb-Pb collisions at 5.02 TeV	Phys.Lett. B793 (2019) 420-432
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420	ALICE Collaboration (Shreyasi Acharya, et al.)	Measuring K0SK$\pm$ interactions using pp collisions at 7TeV	Phys.Lett. B790 (2019) 22-34
419	ALICE Collaboration (Shreyasi Acharya, et al.)	Centrality and pseudorapidity dependence of the charged-particle multiplicity density in Xe–Xe collisions at 5.44TeV	Phys.Lett. B790 (2019) 35-48
418	ALICE Collaboration (Shreyasi Acharya, et al.)	Study of J/ψ azimuthal anisotropy at forward rapidity in Pb-Pb collisions at 5.02 TeV	JHEP 1902 (2019) 012
417	Ajay Kumar Dash, Ranbir Singh, Sandeep Chatterjee, Chitrasen Jena, **Bedangadas Mohanty**	Role of system size in freeze-out conditions extracted from transverse momentum spectra of hadrons	Phys.Rev. C98 (2018) no.6, 064902

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411	ALICE Collaboration (Shreyasi Acharya, et al.)	ϕ meson production at forward rapidity in Pb-Pb collisions at 2.76 TeV	Eur.Phys.J. C78 (2018) no.7, 559
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409	ALICE Collaboration (Shreyasi Acharya, et al.)	Measurement of the inclusive J/ ψ polarization at forward rapidity in pp collisions at 8 TeV	Eur.Phys.J. C78 (2018) no.7, 562
408	STAR Collaboration (Jaroslav Adam, et al.)	Low-pT e+e− pair production in Au+Au collisions at 200 GeV and U+U collisions at 193 GeV at STAR	Phys.Rev.Lett. 121 (2018) no.13, 132301
407	STAR Collaboration (Jaroslav Adam, et al.)	Azimuthal anisotropy in Cu+Au collisions at 200 GeV	Phys.Rev. C98 (2018) no.1, 014915
406	STAR Collaboration (Jaroslav Adam, et al.)	Correlation Measurements Between Flow Harmonics in Au+Au Collisions at RHIC	Phys.Lett. B783 (2018) 459-465
405	STAR Collaboration (Jaroslav Adam, et al.)	Beam energy dependence of rapidity-even dipolar flow in Au+Au collisions	Phys.Lett. B784 (2018) 26-32
404	STAR Collaboration (Jaroslav Adam, et al.)	Global polarization of Λ hyperons in Au+Au collisions at 200 GeV	Phys.Rev. C98 (2018) 014910
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399	CDMS Collaboration (R. Agnese et al.)	Nuclear-Recoil Energy Scale in CDMS II Silicon Dark-Matter Detectors	Nucl.Instrum.Meth. A905 (2018) 71-81
398	L. Adamczyk et al. (STAR Collaboration) **(B. Mohanty – significant contributions)**	Measurement of the 3Λ H lifetime in Au+Au collisions at the BNL Relativistic Heavy Ion Collider	Phys.Rev. C97 (2018) no.5, 054909
397	D. Adamova et al. (ALICE Collaboration)	J/ψ production as a function of charged-particle pseudorapidity density in p-Pb collisions at 5.02 TeV	Phys.Lett. B776 (2018) 91-104
396	S. Acharya et al. (ALICE Collaboration)	D-meson azimuthal anisotropy in midcentral Pb-Pb collisions at 5.02 TeV	Phys.Rev.Lett. 120 (2018) no.10, 102301
395	L. Adamczyk et al. (STAR Collaboration)	Beam-Energy Dependence of Directed Flow of Λ, $\bar{\Lambda}$, K±, K0s and ϕ in Au+Au Collisions	Phys.Rev.Lett. 120 (2018) no.6, 062301
394	S. Acharya et al. (ALICE Collaboration)	π^0 and η meson production in proton-proton collisions at $\sqrt{s}$=8 TeV	Eur.Phys.J. C78 (2018) no.3, 263
393	R. Agnese et al., (SuperCDMS Collaboration)	Low-mass dark matter search with CDMSlite	Phys.Rev. D97 (2018) no.2, 022002
391	R. Agnese et al., (SuperCDMS Collaboration) (**Significant contributions from NSIER group**)	Results from the Super Cryogenic Dark Matter Search Experiment at Soudan	Phys.Rev.Lett. 120 (2018) no.6, 061802
391	S. Acharya et al. (ALICE Collaboration)	Systematic studies of correlations between different order flow harmonics in Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV	Phys.Rev. C97 (2018) no.2, 024906
390	S. Acharya et al. (ALICE Collaboration)	Constraining the magnitude of the Chiral Magnetic Effect with Event Shape Engineering in Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV	Phys.Lett. B777 (2018) 151-162
389	S. Acharya et al. (ALICE Collaboration)	Search for collectivity with azimuthal J/ψ-hadron correlations in high multiplicity p-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 and 8.16 TeV	Phys.Lett. B780 (2018) 7-20
388	S. Acharya et al.	Production of deuterons, tritons, 3	Phys.Rev. C97

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387	S. Acharya et al. (ALICE Collaboration)	Longitudinal asymmetry and its effect on pseudorapidity distributions in Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV	Phys.Lett. B781 (2018) 20-32
386	S. Acharya et al. (ALICE Collaboration)	Measurement of Z0-boson production at large rapidities in Pb-Pb collisions at $\sqrt{s_{NN}}$ =5.02 TeV	Phys.Lett. B780 (2018) 372-383
385	S. Acharya et al. (ALICE Collaboration)	First measurement of Ξ0c production in pp collisions at $\sqrt{s}$ = 7 TeV	Phys.Lett. B781 (2018) 8-19
384	J. Adam et al. (ALICE Collaboration) **(B. Mohanty Primary Author)**	K∗(892)0 and ϕ(1020) meson production at high transverse momentum in pp and Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV	Phys.Rev. C95 (2017) no.6, 064606
383	L. Adamczyk et al. (STAR Collaboration) **(B. Mohanty Primary Author)**	Bulk Properties of the Medium Produced in Relativistic Heavy-Ion Collisions from the Beam Energy Scan Program	Phys.Rev. C96 (2017) no.4, 044904 **(Editor's Choice)**
382	L. Adamczyk et al. (STAR Collaboration) **(B. Mohanty – significant contributions)**	Measurement of D0 Azimuthal Anisotropy at Midrapidity in Au+Au Collisions at $\sqrt{s_{NN}}$ =200 GeV	Phys.Rev.Lett. 118 (2017) no.21, 212301
381	L. Adamczyk et al. (STAR Collaboration)	Global Λ hyperon polarization in nuclear collisions: evidence for the most vortical fluid	**Nature** 548 (2017) 62-65
380	J. Adam et al. (ALICE Collaboration)	Centrality dependence of the pseudorapidity density distribution for charged particles in Pb-Pb collisions at $\sqrt{s_{NN}}$ =5.02 TeV	Phys.Lett. B772 (2017) 567-577
379	L. Adamczyk et al. (STAR Collaboration)	Measurement of the cross section and longitudinal double-spin asymmetry for di-jet production in polarized pp collisions at $\sqrt{s}$ = 200 GeV	Phys.Rev. D95 (2017) no.7, 071103
378	J. Adam et al. (ALICE Collaboration)	Determination of the event collision time with the ALICE detector at the LHC	Eur.Phys.J.Plus 132 (2017) no.2, 99
377	J. Adam et al. (ALICE Collaboration)	Evolution of the longitudinal and azimuthal structure of the near-side jet peak in Pb-Pb collisions at $\sqrt{s_{NN}}$ =2.76 TeV	Phys.Rev. C96 (2017) no.3, 034904
376	J. Adam et al.	Anomalous evolution of the near-	Phys.Rev.Lett.

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375	L. Adamczyk et al. (STAR Collaboration)	Dijet imbalance measurements in Au+Au and pp collisions at $\sqrt{s_{NN}}$ = 200 GeV at STAR	Phys.Rev.Lett. 119 (2017) no.6, 062301
374	J. Adam et al. (ALICE Collaboration)	Measurement of electrons from beauty-hadron decays in p-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV and Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV	JHEP 1707 (2017) 052
373	J. Adam et al. (ALICE Collaboration)	Insight into particle production mechanisms via angular correlations of identified particles in pp collisions at $\sqrt{s}$=7 TeV	Eur.Phys.J. C77 (2017) no.8, 569
372	S. Acharya et al. (ALICE Collaboration)	Energy dependence of forward-rapidity J/ψ and ψ(2S) production in pp collisions at the LHC	Eur.Phys.J. C77 (2017) no.6, 392
371	S. Acharya et al. (ALICE Collaboration)	Measurement of D-meson production at mid-rapidity in pp collisions at $\sqrt{s}$=7 TeV	Eur.Phys.J. C77 (2017) no.8, 550
370	S. Acharya et al. (ALICE Collaboration)	First measurement of jet mass in Pb–Pb and p–Pb collisions at the LHC	Phys.Lett. B776 (2018) 249-264
369	S. Acharya et al. (ALICE Collaboration)	Production of π0 and η mesons up to high transverse momentum in pp collisions at $\sqrt{s_{NN}}$ = 2.76 TeV	Eur.Phys.J. C77 (2017) no.5, 339, Eur.Phys.J. C77 (2017) no.9, 586
368	L. Adamczyk et al. (STAR Collaboration)	Measurements of jet quenching with semi-inclusive hadron+jet distributions in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV	Phys.Rev. C96 (2017) no.2, 024905
367	S. Acharya et al. (ALICE Collaboration)	Production of muons from heavy-flavour hadron decays in p-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV	Phys.Lett. B770 (2017) 459-472
366	D. Adamova et al. (ALICE Collaboration)	Azimuthally differential pion femtoscopy in Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV	Phys.Rev.Lett. 118 (2017) no.22, 222301
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359	S. Das, D. Mishra, S. Chaterjee and **B. Mohanty**	Freezeout conditions in proton-proton collisions at the top RHIC and LHC energies	Phys. Rev. C 95 (2017) 014912
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355	J. Adam et al. (ALICE Collaboration) (**B. Mohanty – Significant Contributions)**	Production of K*(892) and phi (1020) in p-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV	Eur.Phys.J C 76 (2016) 245
354	L. Adamczyk et al. (STAR Collaboration) **(B. Mohanty-Primary Author)**	Centrality and transverse momentum dependence of elliptic flow of multi-strange hadrons and ϕ meson in Au+Au collisions at $\sqrt{s_{NN}}$ = = 200 GeV	Phys.Rev.Lett. 116 (2016) 6, 062301.
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351	L. Adamczyk et al. (STAR Collaboration) **(B. Mohanty-Primary Author)**	Charged-to-neutral correlation at forward rapidity in Au+Au collisions at $\sqrt{s_{NN}}$=200 GeV	Phys.Rev. C91 (2015) 3, 034905

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343	B Abelev et al. (ALICE Collaboration)	Suppression of $\Upsilon (1S)$ at forward rapidity in Pb-Pb collisions at $\sqrt{s_{\rm NN}} = 2.76$ TeV	Phys.Lett. B738 (2014) 361-372
342	B Abelev et al. (ALICE Collaboration)	Elliptic flow of identified hadrons in Pb-Pb collisions at $ \sqrt{s_{\mathrm{NN}}}=2.76 $ TeV	JHEP 1506 (2015) 190.
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339	B Abelev et al. (ALICE Collaboration) **(B. Mohanty-Significant contribution)**	Production of $\Sigma(1385)^{\pm}$ and $\Xi(1530)^{0}$ in proton-proton collisions at $\sqrt{s}=$ 7 TeV	Eur.Phys.J. C75 (2015) 1, 1

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329	Betty BezverkhnyAbelev et al. (ALICE Collaboration)	Production of inclusive Υ(1S) and Υ(2S) in p-Pb collisions at $\mathbf{\sqrt{s_{{\rm NN}}} = 5.02}$ TeV	Phys.Lett. B740 (2015) 105-117
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326	SandeepChatterjee, **Bedangadas Mohanty**, Ranbir Singh	Freezeouthypersurface at energies available at the CERN Large Hadron Collider from particle spectra: Flavor and centrality dependence	Phys.Rev. C92 (2015) 2, 024917
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310	L. Adamczyk et al. STAR Collaboration	Measurements of Dielectron Production in Au$+$Au Collisions at $\sqrt{s_{\rm NN}}$ = 200 GeV from the STAR Experiment	Phys.Rev. C92 (2015) 2, 024912
309	L. Adamczyk et al. STAR Collaboration **(B. Mohanty-Primary Author)**	Observation of charge asymmetry dependence of pion elliptic flow and the possible chiral magnetic wave in heavy-ion collisions	Phys.Rev.Lett. 114 (2015) 25, 252302
308	VipulBairathi, Md. RihanHaque, **Bedangadas Mohanty**	Selecting specific initial configurations using spectator neutrons in U + U collisions	Phys.Rev. C91 (2015) 5, 054903
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305	SubhashSingha, **Bedangadas Mohanty**, Zi-Wei Lin	Studying re-scattering effect in heavy-ion collision through K* production	Int.J.Mod.Phys. E24 (2015) 05, 1550041.
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303	Jaroslav Adam et al. (ALICE Collaboration)	Measurement of jet quenching with semi-inclusive hadron-jet distributions in central Pb-Pb collisions at $ \sqrt{s_{\mathrm{NN}}}=2.76	JHEP 1509 (2015) 170

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302	Jaroslav Adam et al. (ALICE Collaboration)	Centrality dependence of high-p$_{T}$ D meson suppression in Pb-Pb collisions at $ sqrt{s_{\mathrm{N}\mathrm{N}}}= 2.76 $ TeV	JHEP 1511 (2015) 205.
301	Jaroslav Adam et al. (ALICE Collaboration)	Search for weakly decaying $\overline{\Lambda\mathrm{n}}$ and $\Lambda\Lambda $ exotic bound states in central Pb-Pb collisions at $\sqrt{s_{\rm NN}}$ = 2.76 TeV	Phys.Lett. B752 (2016) 267-277.
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297	Jaroslav Adam et al. (ALICE Collaboration)	$^{3}_{\Lambda}\mathrm H$ and $^{3}_{\bar{\Lambda}} \overline{\mathrm H}$ production in Pb-Pb collisions at $\sqrt{s_{\rm NN}} =$ 2.76 TeV	Phys.Lett. B754 (2016) 360-372
296	Jaroslav Adam et al. (ALICE Collaboration)	Elliptic flow of muons from heavy-flavour hadron decays at forward rapidity in Pb–Pb collisions at $\sqrt{s_{\rm NN}}= 2.76$ TeV	Phys.Lett. B753 (2016) 41-56
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279	L. Adamczyk *et al*. (STAR Collaboration) ***(Bedangadas Mohanty – Primary Author)***	Beam energy dependence of moments of the net-charge multiplicity distributions in Au+Au collisions at RHIC	Phys. Rev. Lett. **113**, 092301 (2014)
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249	M. M. Aggarwal at al. (STAR Collaboration) ***(Bedangadas Mohanty – Primary Author)***	K*0 production in Cu + Cu and Au+Au collisions at $\sqrt{sNN}$ = 62.4 GeV and 200 GeV	Phys. Rev. C 84, 034909 (2011)
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195	M. M. Aggarwal et al. [STAR Collaboration], ***(Bedangadas Mohanty – Significant contribution)***	Azimuthal di-hadron correlations in d+Au and Au+Au collisions at$\sqrt{sNN}$= 200 GeV from STAR	Phys. Rev. C **82**, 024912 (2010)
194	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Three-particle coincidence of the long range pseudorapidity correlation in highenergy nucleus-nucleus collisions	Phys. Rev. Lett. **105**, 022301 (2010)
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189	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Inclusive π0, n, and direct photon production in p+p and d+Au collisions at √sNN = 200 GeV	Phys. Rev. C **81**, 064904 (2010)
188	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Observation of π+, π-, π+, π-, Photoproduction in Ultra-Peripheral Heavy Ion Collisions at STAR	Phys. Rev. C **81**, 044901 (2010)
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183	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Long range rapidity correlations and jet production in high energy nuclear collisions	Physical Review C **80,**064192 (2009)
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181	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Longitudinal Spin Transfer to Λ and $\bar{\Lambda}$ Hyperons in Polarized Proton-Proton Collisions at √s = 200GeV	Physical Review D **80,** 111102 (2009)
180	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Neutral pion production in Au+Au Collisions at √sNN = 200 GeV	Physical Review C **80,**044905 (2009)
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175	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Indications of Conical Emission of Charged Hadrons at RHIC	Physical Review Letters **102,**052302 (2009)
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173	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Forward Neutral Pion Transverse Single Spin Asymmetries in p+p Collisions at $\sqrt{s}$=200 GeV	Physical Review Letters 101, 222001 (2008)
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171	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Systematic Measurements of Identified Particle Spectra in pp, d+Au and Au+Au Collisions from STAR	Physical Review C **79**, 034909 (2009)
170	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Centrality dependence of charged hadron and strange hadron elliptic flow from √sNN = 200 GeV Au+Au collisions	Physical Review C **77** 054901 (2008)
169	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Measurements of phi- meson production in relativistic heavy-ion collisions at RHIC	Physical Review C **79** 064903 (2009)
168	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Hadronic resonance production in d+Au collisions at 200 GeV at RHIC	Physical Review C **78** 044906 (2008)
167	*B.I. Abelev et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Spin alignment measurements of the K*and ø vector meson at RHIC	Physical Review C **77** 061902 (2008)
166	*J. Adams et al.* (STAR Collaboration) ***(Bedangadas Mohanty – Significant contribution)***	Experimental and theoretical challenges in the search for the quark gluon plasma : The STAR Collaboration's critical assessment of the evidence from RHIC collisions	Nuclear Physics A **757**, 102 (2005)
165	B. Abelev et al. [ALICE Collaboration]	Measurement of electrons from semileptonic heavy-flavor hadron decays in pp collisions at√sNN = 2.76 TeV	Phys.Rev. D**91**, 012001 (2015)
164	L. Adamczyk et al. [STAR	Dielectron Mass Spectra from Au+Au Collisions at √sNN = 200	Phys. Rev. Lett. **113**, 022301

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162	B. Abelev et al. [ALICE Collaboration]	Beauty production in pp collisions at √s = 2.76 TeV measured via semi-electronic decays	Phys.Lett. B**738**, 97 (2014)
161	B. Abelev et al. [ALICE Collaboration]	Multi-particle azimuthal correlations in p-Pb and Pb-Pb collisions at the CERN Large Hadron Collider	Phys.Rev. C**90**, 054901 (2014)
160	B. Abelev et al. [ALICE Collaboration]	Production of inclusive Upsilon (1S) and Upsilon(2S) in p-Pb collisions at 5.02 TeV	Phys.Lett. B **740**, 105 (2014)
159	B. Abelev et al. [ALICE Collaboration]	Transverse momentum dependence of inclusive primary charged-particle production in p-Pb collisions at√sNN = 5.02TeV	Eur.Phys.J. C**74**, 3054 (2014)
158	B. Abelev et al. [ALICE Collaboration]	Suppression of Psi(2S) production in p-Pb collisions at √sNN = 5.02TeV	JHEP **1412**, 073 (2014)
157	B. Abelev et al. [ALICE Collaboration]	Neutral pion production at midrapidity in pp and Pb-Pb collisions at √sNN = 2.76 TeV	Eur.Phys.J. C**74**, 3108 (2014)
156	B. Abelev et al. [ALICE Collaboration]	Measurement of prompt D-meson production in p-Pb collisions at at √sNN = 5.02TeV	Phys.Rev.Lett. 113, 232301 (2014)
155	B. Abelev et al. [ALICE Collaboration]	Azimuthal anisotropy of D meson production in Pb-Pb collisions at√sNN = 5.02TeV	Phys.Rev. C**90**, 034904 (2014)
154	L. Adamczyk et al. [STAR Collaboration]	Observation of D0 meson nuclear modificationsin Au+Au collisions at √sNN = 200 GeV	Phys.Rev.Lett. **113**, 142301 (2014)
153	B. Abelev et al. [ALICE Collaboration]	Freeze-out radii extracted from three-pion cumulants in pp, p-Pb and Pb-Pb collisions at the LHC	Phys.Lett. B **739**, 139 (2014)
152	B. Abelev et al. [ALICE Collaboration]	Measurement of visible cross sections in proton-lead collisions at5.02 TeV in van der Meer scans with the ALICE detector	JINST **9**, P11003 (2014)
151	L. Adamczyk et al. [STAR Collaboration]	Measurement of longitudinal spin asymmetries for weak boson production in polarized proton-proton collisions at RHIC	Phys.Rev.Lett. **120,** 072301 (2014)
150	H. Agakishiev *et al.* [STAR Collabo-ration]	Event-plane dependent dihadron correlations with harmonic vn subtraction in Au+Au Collisions at √sNN = 200 GeV	Phys. Rev. C **89**, 041901 (2014)

149	B. Abelev et al. [ALICE Collaboration]	Measurement of quarkonium production at forward rapidity in pp collisions at √s=7 TeV	Eur. Phys. J. C **74**, 2974 (2014)
148	B. Abelev et al. [ALICE Collaboration]	Technical Design Report for the Upgrade of the ALICE Inner Tracking System	J. Phys. G **41**, 087002 (2014).
147	B. B. Abelev et al. [ALICE Collaboration]	Two and Three-Pion Quantum Statistics Correlations in Pb-Pb Collisions at sqrt(sNN)=2.76 TeV at the LHC	Phys. Rev. C **89**, 024911 (2014)
146	L. Adamczyk et al. [STAR Collaboration]	Neutral pion cross section and spin asymmetries at intermediate pseudorapidity in polarized proton collisions at sqrts = 200 GeV	Phys. Rev. D **89**, 012001 (2014)
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142	B. B. Abelev *et al*. [ALICE Collaboration]	Multi-strange baryon production at mid-rapidity in Pb-Pb collisions at √sNN =2.76 TeV	Phys. Lett. B **728,** 216 (2014)
141	B. B. Abelev et al. [ALICE Collaboration]	Long-range angular correlations of pi, K and p in p–Pb collisions at √sNN= 5.02 TeV	Phys. Lett. B **726**, 164 (2013)
140	B. Abelev et al. [ALICE Collaboration]	Multiplicity dependence of two-particle azimuthal correlations in pp collisions at the LHC	JHEP **1309**, 049 (2013)
139	B. B. Abelev et al. [ALICE Collaboration]	Multiplicity dependence of the average transverse momentum in pp, p-Pb, andPb-Pb collisions at the LHC	Phys. Lett. B **727**, 371 (2013)
138	B. B. Abelev et al. [ALICE Collaboration]	Energy Dependence of the Transverse Momentum Distributions of Charged Particles in pp Collisions Measured by ALICE	Eur. Phys. J. C **73**, 2662 (2013)
137	B. Abelev et al. [ALICE Collaboration]	Directed flow of charged particles at midrapidity relative to the spectator plane inPb-Pb collisions at √sNN= =2.76 TeV	Phys. Rev. Lett. **111**, 232302 (2013)
136	B. Abelev *et al*. [ALICE	D meson elliptic flow in non-central Pb-Pb collisions at √sNN = 2.76TeV	Phys. Rev. Lett. **111**, 102301

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135	E. Abbas et al. [ALICE Collaboration]	Mid-rapidity anti-baryon to baryon ratios in pp collisions at √s = 0.9, 2.76 and 7TeV measured by ALICE	Eur. Phys. J. C **73**, 2496 (2013)
134	E. Abbas et al. [ALICE Collaboration]	Charmonium and e+e− pair photoproduction at mid-rapidity in ultra-peripheral Pb-Pb collisions at √sNN = 2.76 TeV	Eur. Phys. J. C **73**, 2617 (2013)
133	E. Abbas et al. [ALICE Collaboration]	Centrality dependence of the pseudorapidity density distribution for charged particles in Pb-Pb collisions at sqrt(sNN) = 2.76 TeV	Phys. Lett. B **726**, 610 (2013)
132	B. Abelev et al. [ALICE Collaboration]	Centrality dependence of pi, K, p production in Pb-Pb collisions at √sNN = 2.76 TeV	Phys. Rev. C **88**, 044910 (2013)
131	L. Adamczyk et al. [STAR Collaboration]	Freeze-out Dynamics via Charged Kaon Femtoscopy in sqrt(sNN)=200 GeV Central Au+Au Collisions	Phys. Rev. C **88**, 034906 (2013)
130	B. Abelev et al. [ALICE Collaboration]	Centrality determination of Pb-Pb collisions at √sNN = 2.76 TeV with ALICE	Phys. Rev. C **88**, 044909 (2013)
129	B. Abelev et al. [ALICE Collaboration]	Charge correlations using the balance function in Pb-Pb collisions at √sNN = 2.76 TeV	Phys. Lett. B **723**, 267 (2013)
128	B. Abelev et al. [ALICE Collaboration]	Measurement of the inclusive differential jet cross section in pp collisions at √s =2.76 TeV	Phys. Lett. B **722**, 262 (2013)
127	L. Adamczyk et al. [STAR Collaboration]	Third Harmonic Flow of Charged Particles in Au+Au Collisions at sqrtsNN = 200 GeV	Phys. Rev. C **88**, 014904 (2013)
126	L. Adamczyk et al. [STAR Collaboration]	Measurement of J/ΨAzimuthal Anisotropy in Au+Au Collisions at √sNN= 200 GeV	Phys. Rev. Lett. **111**, 052301 (2013)
125	B. Abelev et al. [ALICE Collaboration]	Charged kaon femtoscopic correlations in pp collisions at √s = 7 TeV	Phys. Rev. D **87**, 052016 (2013)
124	L. Adamczyk et al. [STAR Collaboration]	Experimental studies of di-jets in Au + Au collisions using angular correlations with respect to back-to-back leading hadrons	Phys. Rev. C **87**, 044903 (2013)
123	B. Abelev et al. [ALICE	Long-range angular correlations on the near and away side in p-Pb	Phys. Lett. B **719**, 29 (2013)

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121	B. Abelev et al. [ALICE Collaboration]	Coherent J/ Ψ photoproduction in ultra-peripheral Pb-Pb collisions at psNN = 2.76 TeV	Phys. Lett. B 718, 1273 (2013)
120	B. Abelev *et al*. [ALICE Collaboration]	Centrality Dependence of Charged Particle Production at Large Transverse Momentum in Pb–Pb Collisions at √sNN = 2.76 TeV	Phys. Lett. B **720**, 52 (2013)
119	B. Abelev et al. [ALICE Collaboration],	Transverse Momentum Distribution and Nuclear Modification Factor of Charged Particles in p-Pb Collisions at √sNN = 5.02 TeV	Phys. Rev. Lett. **110**, 082302 (2013)
118	B. Abelev et al. [ALICE Collaboration]	Pseudorapidity density of charged particles p-Pb collisions at √sNN = 5.02 TeV	Phys. Rev. Lett. **110**, 032301 (2013)
117	B. Abelev et al. [ALICE Collaboration]	Coherent J/ Ψ photoproduction in ultra-peripheral Pb-Pb collisions at √sNN =2.76 TeV	Phys. Lett. B **718**, 1273 (2013)
116	L. Adamczyk et al. [STAR Collaboration]	J/ Ψ production at high transverse momenta in p + p and Au+Au collisions at √sNN = 200 GeV	Phys. Lett. B **722**, 55 (2013)
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114	B. Abelev et al. [ALICE Collaboration]	Measurement of electrons from beauty hadron decays in *pp* collisions at ps = 7 TeV	Phys. Lett. B **721**, 13 (2013)
113	B. Abelev *et al*. [ALICE Collaboration]	Net-Charge Fluctuations in Pb-Pb collisions at √sNN = 2.76 TeV	Phys. Rev. Lett. **110** 152301 (2013)
112	B. Abelev et al. [ALICE Collaboration]	Charge separation relative to the reaction plane in Pb-Pb collisions at √sNN = 2.76 TeV,	Phys. Rev. Lett. **110**, 012301 (2013)
111	L. Adamczyk et al. [STAR Collaboration]	Measurement of "J/ Ψ Azimuthal Anisotropy in Au+Au Collisions at √sNN = 200 GeV	Phys.Rev.Lett. **111**, 052301 (2013)

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108	M.M. Aggarwal et al. [WA98 Collaboration]	Photon and Eta Production in p+Pb and p+C Collisions at 17.4 GeV	Nucl.Phys. A**898**, 14 (2013)
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105	B. Abelev et al. [ALICE Collaboration]	D_s+ meson production at central rapidity in proton–proton collisions at √s = 7 TeV	Phys. Lett. B **718**, 279 (2012)
104	L. Adamczyk et al. [STAR Collaboration]	Di-electron spectrum at mid-rapidity in *p* + *p* collisions at √s = 200 GeV	Phys. Rev. C **86**, 024906 (2012)
103	L. Adamczyk et al. [STAR Collaboration]	Directed Flow of Identified Particles in Au + Au Collisions at √sNN= 200 GeV at RHIC	Phys. Rev. Lett. **108**, 202301 (2012)
102	G. Agakishiev et al.[STAR Collaboration]	Measurement of the W → ev and Z/γ* →e+ e− Production Cross Sections at Mid-rapidity in Proton-Proton Collisions at √s = 500 GeV	Phys.Rev. D85, 092010 (2012)
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100	B. Abelev et al. [ALICE Collaboration]	Measurement of prompt J/Psi and beauty hadron production production cross sections at mid-rapidity in pp collisions at beauty hadron production √s = 7 TeV	JHEP **1211**, 065 (2012)
99	B. Abelev et al. [ALICE Collaboration]	Neutral pion and meson production in proton-proton collisions at √s = 0.9 TeV and √s = 7 TeV	Phys. Lett. B **717**, 162 (2012)

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97	B. Abelev et al. [ALICE Collaboration]	Transverse sphericity of primary charged particles in minimum bias proton-proton collisions at √s = 0.9, 2.76 and 7 TeV	Eur. Phys. J. C **72,** 2124 (2012)
96	B. Abelev et al. [ALICE Collaboration]	Multi-strange baryon production in pp collisions at $(s)^{1/2}$ = 7 TeV with ALICE	Phys. Lett. B **712**, 309 (2012)
95	B. Abelev et al. [ALICE Collaboration]	Inclusive J/ Ψ production in pp collisions at √s = 2.76 TeV	Phys. Lett. B **718**, 295 (2012)
94	B. Abelev et al. [ALICE Collaboration]	Production of muons from heavy flavour decays at forward rapidity in pp and Pb-Pb collisions at √sNN= = 2.76 TeV	Phys. Rev. Lett. **109**, 112301 (2012)
93	B. Abelev et al. [ALICE Collaboration]	Suppression of high transverse momentum D mesons in central Pb-Pb collisions at √sNN= 2.76 TeV	JHEP **1209**, 112 (2012)
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91	B. Abelev et al. [ALICE Collaboration]	J/ Ψ suppression at forward rapidity in Pb-Pb collisions at √sNN = 2.76 TeV	Phys. Rev. Lett. **109**, 072301 (2012)
90	B. Abelev et al. [ALICE Collaboration]	Heavy flavour decay muon production at forward rapidity in proton–proton collisions at √s = 7 TeV	Phys. Lett. B **708**, 265 (2012)
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87	B. Abelev et al. [ALICE Collaboration]	J/Ψ polarization in pp collisions at √s = 7 TeV	Phys. Rev. Lett. **108**, 082001 (2012)
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84	G. Agakishiev et al.[STAR Collaboration]	Directed and elliptic flow of charged particles in Cu+Cu collisions at √sNN = 22.4 GeV	Phys.Rev. C **85**, 014901 (2012)
83	G. Agakishiev et al.[STAR Collaboration]	Anomalous centrality evolution of two-particle angular correlations from Au-Au collisions at √sNN = 62 and 200 GeV	Phys.Rev. C **86**, 064902 (2012)
82	G. Agakishiev et al.[STAR Collaboration]	p0 Photoproduction in AuAu Collisions at √sNN=62.4 GeV with STAR	Phys.Rev. C**85**, 014910 (2012)
81	G. Agakishiev et al.[STAR Collaboration]	Strangeness Enhancement in Cu+Cu and Au+Au Collisions at √sNN= 200 GeV	Phys.Rev.Lett. **108,** 072301 (2012)
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79	K. Aamodt et al. [ALICE Collaboration]	Rapidity and transverse momentum dependence of inclusive J/psi production in pp collisions at sqrt(s) = 7 TeV	Phys. Lett. B **704**, 442 (2011)
78	G. Agakishiev et al.[STAR Collaboration]	High pT non-photonic electron production in p+p collisions at √s = 200 GeV	Phys. Rev. D **83**, 052006 (2011)
77	K. Aamodt et al. [ALICE Collaboration]	Production of pions, kaons and protons in pp collisions at sqrt(s)= 900 GeV with ALICE at the LHC	Eur.Phys.J. C **71,** 1655 (2011)
76	K. Aamodt et al. [ALICE Collaboration]	Femtoscopy of pp collisions at sqrts=0.9 and 7 TeV at the LHC with two-pion Bose-Einstein correlations	Phys.Rev. D **84**, 112004 (2011)
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63	M.M. Aggarwal et. al., [WA98 Collaboration]	Suppression of High pT Neutral Pions in Central Pb+Pb Collisions at √sNN =17.3 GeV	Physical Review Letters **100**, 242301 (2008)
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37	J. Adams et al. [STAR Collaboration]	Incident energy dependence of pT correlations at RHIC	Physical Review C **72**, 044902 (2005)
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