PHYSICAL RESEARCH LABORATORY

PROFORMA FOR ACADEMIC PURPOSE ONLY

Name	:	**Bijaya Kumar Sahoo**
Date of Birth	:	02 May 1977
Present Designation	:	Professor
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(1) Academic Positions:

(a) ***Professor,*** Atomic, Molecular and Optical Physics Division, PRL, Since July, 2018.
(b) ***Associate Professor,*** Atomic, Molecular and Optical Physics Division, PRL, from July, 2013 to June, 2018.
(c) ***Reader,*** Theoretical Physics Division, PRL, from July, 2013 to June, 2018.
(d) ***Postdoctoral Fellow and Project Leader*** of project *"Atomic parity violation as a high-precision test of the unified electroweak theory"* at Kernfysisch Versneller Instituut (KVI), RuG University, Groningen, The Netherlands from October 2008 to June 2010.
(e) ***Postdoctoral Fellow*** on FOM Fellowship at Kernfysisch Versneller Instituut (KVI), RuG University, Groningen, The Netherlands from March 2008 to October 2008.
(f) ***Postdoctoral Fellow*** at Max-Planck Institute for the Physics of Complex Systems, Dresden, Germany, April 2006 to March 2008.
(g) DAAD Scholarship ***Guest Scientist*** at GSI, Darmstadt, Germany, June 2004 - March 2006.

(2) Professional Responsibilities:

a) ***Chairman*** of Vikram-100 HPC acquisition committee at PRL at present.
b) ***Chairman*** of Academic Committee of PRL since 2019.
c) ***Chairman*** of Monthly English Newsletter Committee of PRL since 2019.
d) ***Member*** of Academic Committee of PRL, India during 2013-2018.
e) ***Member*** of Vikram-100 HPC acquisition committee at PRL in 2015.
f) ***Editor*** for Asian J. Physics. (2016-2020).
g) ***Referees*** for Phys. Rev. Lett., J. Phys. B, Eur. Phys. D, MNRAS, Phys. Rev. A, Phys. Rev. B, Opt. Lett., Can. J. Phys., Pramana, Chin. Phys. B, Z. Physik. A etc.

(3) Awards and Honors, Fellowships of Scientific Bodies:

1. Name appeared in the list of **Top 2% of Scientists** in the world in the respective reserach fields published in 2020 by Stanford University.
2. Invited as a **Panelist** to the VAIBHAV summit under Computational Natural Sciences held during Oct-Nov 2020 (https://vaibhav.gov.in/v5.php).
3. Selected as a **Member of Program Committee** for the 27th International Conference on Atomic Physics (ICAP-27), will be held in Toronto, Canada from 19-24 July, 2020.
4. **Chaired** a session at the 8 th Topical Conference (TC2020) on Atomic and Molecular Collisions for Plasma Applications held at Department of Physics, IIT Roorkee during 3 – 5 March, 2020.
5. ***External project examiner*** of Polish government science funding agency, National Science Centre, Poland in 2018 and 2019.
6. Awarded as an **Outstanding Reviewer** for 2018 by J. Phys. B: Atomic, Mol. and Opt. Physics.

7. **Overseas Professor Fellowship** from Institute of Physics (IOP), Chinese Academy of Sciences (CAS), Beijing, China during 1 March - 29 May, 2018.
8. **CAS President's International Fellowship** Initiative (PIFI) – a fellowship from Chinese Academy of Sciences (CAS) during 1 June, 2017- 28 February, 2018.
9. ***Member*** *of FDSR sub-committee* of Gujarat Forensic Sciences University, Gujarat in 2017.
10. **Buti Foundation Award** in 2018 for Excellence in Theoretical Physics, Astrophysics and Biophysics - 2016 by Indian Physics Association.
11. Awarded as an **Outstanding Reviewer** for 2016 by J. Phys. B: Atomic, Mol. and Opt. Physics.
12. Selected for Indo-Australia **EMCR** fellowship by INSA for 2016-2017.
13. Selected by INSA as one of the **founding members of INYSA** to serve till year 2019.
14. Member of the Editorial Board of Asian Journal of Physics in 2015.
15. **Principal Investigator (PI)** from the Indian side of the INSA-JSPS project on Parity and Time reversal symmetry violation in xenon and Fr" during 2013-2016.
16. **INSA Medal for Young Scientists** awarded by the Indian National Science Academy in 2012.
17. **S N Ghosal Award** given by the Indian Physical Society as the Best Young Physicist in the Colloquium for Young Physicists, 18-19 August 2011.
18. **First best prize** given by the Indian Physical Society for the presentation of the paper entitled *Atomic probes of fundamental interactions* in the Colloquium for Young Physicists,18-19 August 2011.
19. **Professor S. N. Ghosh Award** for Young Scientists in Atomic & Molecular Physics for the year 2010" by the Indian Association of Atomic and Molecular Physics in 2011.
20. **Research Fellowship** from the National Natural Science Foundation of China (NSFC) in 2010.
21. **Young International Scientists Fellowship** award from the Chinese Academy of Sciences (CAS) in 2010.
22. **The Best PhD Thesis Award** for the year 2006 by the Indian Association of Atomic and Molecular Physics at XVI National Conference on Atomic and Molecular Physics in 2007.

(4) Organization of Conferences/Summer Schools, etc.

1. **Convener** of the World Quantum Day webinars on "Quantum Sciences and Technologies: application to modern atomic physics (QSTAP 2021)" held on 15 April 2021.
2. **Convener** of the International Webinar on "Fundamental Sciences & Quantum Technologies using Atomic Systems (FSQT 2020)" held during 28 Sept – 1 Oct, 2021.
3. **Convener** of the School and Workshop organized recently for "Program on CP violation in Elementary Particles and Composite Systems (PCPV 2013)" held at Fountain Hotel, Mahabaleshwar during 07-02-2013 to 23-02-2013.
4. **Convener** of the conference "Exploring Fundamental Physics using Atomic Systems (EFPAS 2015)", held at Physical Research Laboratory (PRL), Ahmedabad, India during 6-8 May 2015.
5. One of the **organizers** of NCAMP XXI Conference of Atomic and Molecular Physics Society of India in January 2017.
6. One of the **organizers** of NIFE 2017 conference held at Udaipur, India in September, 2017.
7. **Convener** of the international webinar "Fundamental Sciences and Quantum Technologies using Atomic Systems (FSQT 2020)" to be held during 28 September - 1 October 2020.

(5) Supervising students:

(a) ***PhD students****:* Dillip Nandy (completed in 2016), Yashpal Singh (completed in 2016), Ramanuj Mitra (continuing) and Kumar Rithvik Sreekantham (continuing) at Physical Research Laboratory (PRL), Ahmedabad India.

(b) ***Post-docs****:* Mr. Manpreet Singh (August 2015 to August 2016) and Srinivasa Prasannaa (continuing) at Physical Research Laboratory (PRL), Ahmedabad India.

(c) ***JRF projects****:* D. K. Nandy (2010); Aman Abhisek (2014), Raju Kumar Biswas (2015) and Ramanuj Mitra (2018), Kumar Rithvik Sreekantham (2020).

(d) ***Master students for summer projects****:* Rahul, I.T. Dept. L. E. College, Morbi (2010); Atasi Panda, BITS Goa (2011); Soumya Jena, Fakir Mohan Univ., Odisha (2012); Ganga Thappa, NIT, Odisha (2012); V. V. Jyoti, IAS recommended student (2013); B. D. Sahoo, Central Univ., Hyderabad (2014); P. Barkataki (2014), S. K. Ramjan, Utkal Univ., Odisha (2016).

(e) ***Long term Master's*** *project*: Ms. Sumeet (September 2019 to July 2020)

(f) ***Teachers program***: Balkrishna Shah, Vadodara Univ., Gujarat (2012).

(6) National and International scientific collaborations:

1. Dr. B. Arora, Guru Nanak University, Amritsar, India.
2. Prof. B. P. Das, Tokyo Institute of Technology, Tokyo, Japan.
3. Prof. D. Mukherjee, Indian Association for Cultivation of Sciences, Kolkata, India.
4. Prof. K. Gao, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, China.
5. Prof. T. Shi, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, China.
6. Prof. Y. Sakemi, Center for Nuclear Study, Graduate School of Science, The University of Tokyo, Japan.
7. Prof. K. Asahi, Nishina Center for Accelerator-based Science, RIKEN, Japan.
8. Prof. Anders Kastberg, Institut de Physique de Nice, University of NICE, France.
9. Prof. Rajesh Srivastav, Department of Physics, IIT Roorkee, Uttarakhand, India.
10. Dr. Subhadeep De, National Physical Laboratory, Delhi, India.
11. Dr. R. F. Garcia Ruiz, Department of Physics, Massachusetts Institute of Technology (MIT), USA.
12. Dr. Yen-Mei Yu., Institute of Physics, Beijing, China.
13. Dr. Cheng-Bin Li, Wuhan Institute of Physics and Mathematics, Wuhan, China.
14. Dr. Lalita Sharma, IIT Roorkee, Uttarakhand, India.
15. Dr. A. Aoki, The University of Tokyo, Japan.
16. Dr. Bodhaditya Santra, Department of Physics, IIT Delhi.
17. Prof. Jingbiao Chen, State Key Laboratory of Advanced Optical Communication Systems and Networks, Institute of Quantum Electronics, School of Electronics Engineering & Computer Science, Peking University, Beijing, China
18. Prof. Iain Moore, Department of Physics, University of Jyvaeskyla, Finland
19. Dr. Kenji Sugisaki, Department of Chemistry and Molecular Material Sciences, Osaka City University, Osaka, Japan
20. Dr. Minori Abe, Department of Chemistry, Tokyo Metropolitan Institute, Japan.

(7) Invited Talks at International and National Conferences:

1. Invited talk at the 29th DAE-BRNS National Laser Symposium (NLS 29) organized in association with Indian Laser Association (ILA) held during February 12-15, 2021 at RRCAT, Indore.
2. Special talk during the discussion session at the MITP Virtual Workshop on Parity Violation and Related Topics held during July 27 – 30, 2020 at Mainz Institute for Theoretical Physics, Mainz, Germany.
3. Invited talk at the 8^{th} Topical Conference on Atomic and Molecular Collisions for Plasma Applications at IIT Roorkee during 3 – 5 March 2020.

4. Invited talk at the Laser Spectroscopy as a tool for Nuclear Physics Workshop held during 07 - 11 October, 2019 at Espace de Structure Nucleaire Theorique (ESNT) of the Commissariat a l'Energie Atomique et aux Energies Alternatives (CEA), Saclay-Paris, France.
5. Invited talk at the 6th International Workshop on the Quantum Chemical Calculations on Quantum Computers held on 28 March, 2019 at Osaka University, Osaka, Japan.
6. Invited talk at the 6th International Workshop on Quantum Chemistry/Quantum Chemical Calculations on Quantum Computers (QC/QCC on QCs): Quantum Algorithms held at Osaka City University, Osaka, Japan on 28 March, 2019.
7. Invited talk at National Conference on Nonlinear Phenomena in Physics (NCNLPP - 2019) held at Guru Nanak Dev University, Amritsar, India during 1-2 March, 2019
8. Invited talk at International Conference on Atom and Quantum Optics held during 16-18 December, 2018 at IIT Patna, India.
9. Invited talk at the Third Highly Charged Ion (HCI III) workshop held during 23-27 April, 2018 at WIPM, Wuhan, China.
10. Invited talk at International Symposium Theoretical Design of Materials with Innovative Functions Based on Element Strategy and Relativistic Electronic Theory, December 8-9, 2017 at Tokyo Metropolitan University, Tokyo, Japan.
11. Invited talk at the 4th Workshop on Atomic and Molecular Precision Spectroscopy, 12-15 October, 2017, Northwest University, Xian, China.
12. Invited talk at the 19th International Conference on Recent Progress in Many-Body Theories, June 25-30, 2017, APCTP, Pohang, Korea.
13. Invited talk at Recent Advances in Many-Electron Theory (RAMET 2017) during February 9 - 12, 2017 at Goa, India.
14. Invited talk the 21st National Conference on Atomic and Molecular Physics (NCAMP 2017) during January 3 - 6, 2017 at PRL, Ahmedabad, India.
15. Invited talk at Current Trends and Future Directions Relativistic Many Electron Theories (RMET-2016) conference held during 26-28 September, 2016 at TIT, Tokyo, Japan.
16. Invited talk at Highly Charged Ion (HCI) workshop held during 22-23 March, 2016 at WIPM, Wuhan, China.
17. Invited talk at Frontiers in Atomic, Molecular and Optical Sciences (FAMOS 2016) workshop held during 19 - 20 February, 2016 at IACS, Kolkata, India.
18. Invited talk at International Year of Light and 100 Years of Theory of Relativisty meeting held during 19 - 20 January, 2016 at Kadi Sarva Vishwavidyalaya, Gandhinagar, India.
19. Invited talk at Fundamental Physics using Atoms (FPUA 2015) meeting held during 30 November – 1 December, 2015 at RIKEN, Japan.
20. Invited talk at A skill based workshop on "Computational Methods and Applications in Physics" held during 5 - 6 November, 2015 at Department of Physics, Utkal University, India.
21. Keynote speaker talk at the conference "The interplay between atomic and nuclear physics to study exotic nuclei" held during 14 - 27 August, 2015 at ECT*, Trento, Italy.
22. Invited talk at AISAMP11 meeting held at Tohoku University, Sendai, Japan, October (2014).
23. Invited talk at INSPIRE Science Camp for the school children held at the M S University, Vadodora, India, 25-29 July, 2014.
24. Invited talk at FPUA 2014 meeting held at Tokyo, Japan (14-17 March, 2014).
25. Invited talk at SPARC 2014 meeting held at TIFR, India (28-29 January, 2014).
26. Invited talk at Topical Conference on Atomic Processes in Plasmas (ISAMP-TC-2013) at IPR, Gandhinagar, India 18-20 November, 2013.
27. Invited talk at Let's Love Physics Symposium, Narmad South Gujarat University, Surat, India (7 September, 2013).
28. Invited talk at the 3rd DAE-BRNS Symposium on Atomic, Molecular and Optical

Physics (AMOP 2012) held at IISER, Kolkata, India 14-17 December, 2012.
29. Keynote speaker talk at the International Conference on Meta Computing, Bhubaneswar, India (December 2012).
30. Invited talk at Indo-UK Scientific Seminar (IUSS) held at NISER, Bhubaneswar, India (March 2012).
31. Invited talk at National Conference on “Advances in Physics" held at IIT Roorkee, India (February 2012).
32. Invited talk at the ISAMP topical conference on “Laser interactions with atoms, molecules and cluster" (TC2012) held at Hyderabad Central University, Hyderabad, India (January 2012).
33. Invited talk at the 2nd DAE-BRNS Symposium on Atomic, Molecular and Optical Physics (SAMOP-2011) held at Karnataka University, Dharwad, India (January 2011).
34. Keynote talk at Workshop on “Violations of discrete Symmetries in Atoms and Nuclei", ECT*, Trento, Italy (November 2010).
35. Invited talk at International Conference on Cold Atoms and Ions 2010 (ICCIA10), Kolkata, India (2010).
36. Invited talk at the VIII International Workshop on “APPLICATION OF LASERS AND STORAGE DEVICES IN ATOMIC NUCLEI RESEARCH: Recent Achievements and Future Prospects", Poznan, Poland (2009).
37. Invited talk at Workshop on “Atomic, Chemical, and Nuclear Developments in Coupled Cluster Methods (INT-08-2a)", INT, University of Washington, Seattle, USA (2008).
38. Invited talk at the 434. Wilhelm und Else Heraeus-Seminar “Precision Experiments at Lowest Energies for Fundamental Tests and Constants", Physikzentrum Bad Honnef, Germany (2009).
39. Invited talk at LCC 2007, MPIPKS, Dresden, Germany (2007).
40. Invited talk at DPG meeting on Atomic physics, D¨usseldorf, Germany (2007).
41. Invited talk at the XVI National Conference on Atomic and Molecular Physics, TIFR, Bombay, India, (8 -11 January, 2007).
42. Talk at Science and Engineering Research Council (SERC) School on “Precision Spectroscopy of Atoms, Molecules and Bose Condensates", IISc, Bangalore, India, February 20 to March 12 (2003).
43. Talk at School on “Distributed Parallel Computer Programming (DPCP-02)", Harish Chandra Research Institute, Allahabad, India, 11th April-19th April (2002).
44. Invited talk at Science and Engineering Research Council (SERC) School on “High energy physics", Utkal University, Bhubaneswar, India, 17th January, 2002-10th February (2002).
45. Invited talk at Young Astronomers Meeting, IUCAA, Pune, India, February, 2002.

(8) Seminars:

<u>In India</u>:

1. DBT Lecture at National Science Day at BKB DAV Women’s College, Amritsar, Punjab, 28 February 2019.
2. Chief Guest at National Science Day at Guru Nanak Dev University, Amritsar, Punjab, 28 February, 2019
3. Annual Theory Discussion Days, PRL, Ahmedabad, September, 2018.
4. Department of Physics, IIT Roorkee, Roorkee, 12 May 2016.
5. Time and Frequency Division-CSIR, National Physical Laboratory, New Delhi, 4 April 2016.
6. Departmental seminar, Physics department, Revenshaw University, Cuttuck, November 2015.
7. Annual Theory Discussion Days, PRL, Ahmedabad, September, 2015.
8. Annual Theory Discussion Days, PRL, Ahmedabad, September, 2014.
9. Department of Physics, MS University, Vadodara, India, 28 July, 2014.
10. Theory Seminar at Indian Institute of Astrophysics, Bangalore, July (2013).

11. Faculty Seminars, Physical Research Laboratory, Ahmedabad, February (2013).
12. Colloquium, Physical Research Laboratory, Ahmedabad, August (2010).
13. Department of Physical Sciences, JNU, April (2009).
14. IISER, Bhopal, April (2009).
15. Theoretical Physics Division, PRL, Ahemedabad, April (2009).
16. Atomic and Nuclear physics, TIFR, Bombay, March (2009).
17. Raman Center for Atomic, Molecular and Atomic Physics, IACS, Kolkata, March (2009).
18. IISER, Kolkata, March (2009).
19. Colloquium at Indian Institute of Astrophysics, Bangalore (September, 2005).
20. SERC school on "Precision Spectroscopy of Atoms, Molecules and Bose Condensates", IISc, Bangalore, February (2003).
21. Department of Physical Chemistry, IACS, Kolkata, October (2002).
22. School on Distributed Parallel Computer Programming (DPCP-02), Harish Chandra Research Institute, Allahabad, April (2002).

Outside India:

23. Institute de Physique de Nice, Universite Cote d'Azur, CNRS, France 4 October, 2019.
24. Institute of Modern Physics, Fudan University, Shanghai, China, 18 May, 2018.
25. Institute of Physics, Chinese Academy of Sciences, Beijing, China, 25 August (2017).
26. Wuhan Institute of Physics and Mathematics (WIPM), Wuhan, China, 14 July (2017).
27. Wuhan Institute of Physics and Mathematics (WIPM), Wuhan, China, 1st April (2016).
28. Institute of Physics, Chinese Academy of Sciences, Beijing, China, 29 March (2016).
29. Institute of Applied Physics and Computational Mathematics, Beijing, China, 28 March (2016).
30. Radiation Nuclear Physics Group, Department of Physics, Tohoku University, Sendai, Japan, December (2015).
31. Fr PNC group, Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Italy, September (2015).
32. Radiation Nuclear Physics Group, Department of Physics, Tohoku University, Sendai, Japan, October (2014).
33. Graduate School of Natural Science and Technology, Okayama University, Japan, March (2014).
34. Radiation Nuclear Physics Group, Department of Physics, Tohoku University, Sendai, Japan, March (2014).
35. Department of Physics, Tokyo Institute of Technology, Tokyo, Japan, March (2014).
36. Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, China, December (2011).
37. Engineering College of Chemistry and Molecular Physics, Peiking University, Beijing, China, December (2011).
38. Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, China, December (2011).
39. Theoretical Physics group seminars, KVI, University of Groningen, The Netherlands, June (2010).
40. Engineering College of Chemistry and Molecular Physics, Peiking University, Beijing, China, September (2009).
41. Laboratory of Optical Physics, National Laboratory of Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China, September (2009).
42. Institute of Physics and Mathematics, Chinese Academy of Sciences, Wuhan, China, September (2009).
43. Department of Atomic and Molecular Physics, Harbin Institute of Technology, Harbin, China, September (2009).
44. Institute of Chemistry, E¨otv¨os Lor´and University, Budapest, Hungary, February (2008).

45. KVI, Groningen, the Netherlands, March (2007).
46. Electron Correlations group talk, Max-Planck Institute for the Physics of Complex Systems, Dresden, Germany, October (2006).
47. JAM session talk, Max-Planck Institute for the Physics of Complex Systems, Dresden, Germany, October (2006).
48. Finite system group seminar, Max-Planck Institute for the Physics of Complex Systems, Dresden, Germany, September (2006).
49. Institute of Chemistry, E¨otv¨os Lor´and University, Budapest, Hungary, August (2006).
50. Atomfysik, Stockholm university, Stockholm, Sweden, January (2006).
51. Doktorandenseminar, GSI, Darmstadt, Germany, January (2006).
52. MPIPKS, Dresden, Germany, December (2005).
53. BEC Group, INFM, Trento, Italy, November (2005).
54. INFN, Sezione di Ferrara, Ferrara, Italy, July (2005).
55. Laboratori Nazionali di Lignaro, Padova, Italy, July (2005).
56. Atomphysik, Humboldt University, Berlin, Germany, April (2005).
57. KVI, Groningen, the Netherlands, May (2003).
58. Theoretical Chemistry Dept., Heidelberg, Germany, May (2003).
59. Atomphysik, GSI, Darmstadt, Germany, May (2003).
60. Atomphysik, Mainz University, Mainz, Germany, May (2003).

(9) Teaching Experience:

i. Taught Light-matter interaction to JRFs in 2020 at PRL.
ii. Taught Atomic Many-body Theory to JRFs in 2019 at PRL.
iii. Taught Mathematical Methods course to 2018 JRFs of Physical Research Laboratory.
iv. Taught Atomic Many-body Methods to PhD students at Wuhan Institute of Physics and Mathematics (WIPM), Wuhan, China in 2017.
v. Taught Many-body Theory to the 2016-year batch PhD students of Physical Research Laboratory.
vi. Taught Qualitative Perturbative Methods in Physics to the 2015-year batch PhD students of Physical Research Laboratory.
vii. Taught Numerical Methods and Computer Programming course to the 2014-year batch PhD students of Physical Research Laboratory.
viii. Taught Advanced Quantum Mechanics course to the 2013-year batch PhD students of Physical Research Laboratory.
ix. Taught Quantum Mechanics course to the 2011-year batch PhD students of Physical Research Laboratory.
x. Taught Quantum Mechanics course to the 2010-year batch PhD students of Physical Research Laboratory.

(10) Publication:

(A) <u>Published:</u>

1. T. Aoki, R. Sreekantham, **B. K. Sahoo**, Bindiya Arora, A. Kastberg, T. Sato, H. Ikeda, N. Okamoto, Y. Torii, T. Hayamizu, K. Nakamura, S. Nagase, M. Ohtsuka, H. Nagahama, N. Ozawa, M. Sato, T. Nakashita, K. Yamane, K. S. Tanaka, K. Harada, H. Kawamura, T. Inoue, A. Uchiyama, A. Hatakayama, A. Takamine, H. Ueno, Y. Ichikawa, Y. Matsuda, H. Haba, and Y. Sakemi, *Quantum sensing of the electron electric dipole moment using ultracold entangled Fr atoms*, Quant. Science Techn. **6**, 044008 (2021).
2. Jyoti, M. Kaur, B. Arora and **B. K. Sahoo**, *Spectroscopic data of Rb-isoelectronic Zr and Nb ions for astrophysical applications*, MNRAS **507**, 4030 (2021).
3. **B. K. Sahoo**, B. P. Das and H. Spiesberger, *New Physics Constraints from Atomic Parity Violation in ^{133}Cs*, Phys. Rev. D **103**, L111303 (Letter) (2021).
4. Anaïs Dorne, **B. K. Sahoo** and Anders Kastberg, *Relativistic coupled-cluster calculations of isotope shifts for the low-lying states of Ca II in the finite-field approach*, ATOMS **9**, 26 (2021).

5. **B. K. Sahoo** and B. Ohayon, *Benchmarking Many-body Approaches for the Determination of Isotope Shift Constants: Application to the Li, Be^+ and Ar^{15+} Isoelectronic Systems*, Phys. Rev. A **103**, 052802 (2021).
6. Mandeep Kaur, Sukhjit Singh, **B. K. Sahoo** and Bindiya Arora, *Tune-out and magic wavelengths, and electric quadrupole transition properties of the singly charged alkaline-earth metal ions*, At. Nuc. Data Tabl **2021**, 101422 (2021).
7. N. Shitara, N. Yamanaka, **B. K. Sahoo**, T. Watanabe and B. P. Das, *CP violating effects in ^{210}Fr and prospects for new physics beyond the Standard Model*, J. High Energy Phys **2021**, 124 (2021).
8. Á. Koszorús, W. G. Jiang, X. F. Yang, S. W. Bai, J. Billowes, C. L. Binnersley, T. E. Cocolios, M. L. Bissell, B. S. Cooper, R. P. de Groote, A. Ekström, K. T. Flanagan, C. Forssén , S. Franchoo, R. F. Garcia Ruiz, F. P. Gustafsson, G. Hagen, G. R. Jansen, A. Kanellakopoulos, M. Kortelainen, W. Nazarewicz, G. Neyens, S. Novario, T. Papenbrock, P.-G. Reinhard, **B. K. Sahoo**, C. Ricketts, A R. Vernon, S. G. Wilkins and H. Z. Yu, *Charge radii of exotic potassium isotopes challenge nuclear theory and the magic character of N=32*, Nature Physics **17**, 439 (2021).
9. **B. K. Sahoo**, *Investigating properties of Cl^- and Au^- ions using relativistic many-body methods*, J. Phys. B **54**, 115001 (2021).
10. X. T. Guo, Y. -M. Yu, Y. Liu, B. B. Suo, and **B. K. Sahoo**, *Electric dipole and quadrupole properties of Cd atom for atomic clock applications*, Phys. Rev. A **103**, 013109 (2021).
11. R. Mitra, V. S. Prasannaa, **B. K. Sahoo**, N. Hutzler, M. Abe and B. P. Das, *Study of HgOH to Assess its Suitability for Electron Electric Dipole Moment Searches*, ATOMS **9**, 7 (2021).
12. Mandeep Kaur, Danish Furekh Dar, **B. K. Sahoo** and Bindiya Arora, *Radiative Transition Properties of Singly Charged Magnesium, Calcium, Strontium and Barium ions*, At. Data Nuc. Data Tables **137**, 101381 (2021).
13. Y. -M. Yu, **B. K. Sahoo**, and B. B. Suo, *Ground state g_j factors of the Cd^+, Yb^+ and Hg^+ ions*, Phys. Rev. A **102**, 062824 (2020).
14. S. Singh, Jyoti, B. Arora, **B. K. Sahoo**, and Y.-M. Yu, *Magic wavelengths for optical-lattice based Cs and Rb active clocks*, ATOMS **8**, 79 (2020).
15. Duo Pan, B. Arora, Y. -M. Yu, **B. K. Sahoo**, and J. Chen, *Optical-lattice based Cs active clock with continual superradiant lasing signal*, Phys Rev A **102**, 041101(R) (2020).
16. S. Dutt, S. Singh, A. Mahajan, B. Arora and **B. K. Sahoo**, *van der Waals Coefficients of the Multi-layered MoS_2 films with Alkali Metals*, Phys. Scr. **95**, 095506 (2020).
17. **B. K. Sahoo**, *Determination of dipole polarizabilities of the alkali-metal negative ions*, Phys. Rev. A **102**, 022820 (2020).
18. V. S. Prasannaa, R. Mitra and **B. K. Sahoo**, *Reappraisal of P,T-odd Parameters from the Improved Calculation of Electric Dipole Moment of ^{225}Ra Atom*, J. Phys. B **53**, 195004 (2020).
19. A. R. Vernon, C. M. Ricketts, J. Billowes, T. E. Cocolios, B. S. Cooper, K. T. Flanagan, R. F. Garcia Ruiz, F. P. Gustafsson, G. Neyens, H. A. Perrett, **B. K. Sahoo**, Q. Wang, F. J. Waso, and X. F. Yang, *Laser spectroscopy of indium Rydberg atom bunches by electric field ionization*, Sci. Reports **10**, 12306 (2020).
20. A. Kastberg, **B. K. Sahoo**, T. Aoki, Y. Sakemi and B. P. Das, Symmetry **12**, 974 (1-22) (2020).
21. V. S. Prasannaa, **B. K. Sahoo**, M. Abe and B. P. Das, Symmetry **12**, 811 (1-16) (2020).
22. M. Kaur, R. Nakra, B. Arora, C. -B. Li and **B. K. Sahoo**, J. Phys. B **53**, 065002 (1-6) (2020).
23. R. Mitra, V. S. Prasannaa and **B. K. Sahoo**, Phys. Rev. A **101**, 012511 (1-13) (2020).
24. **B. K. Sahoo**, A. R. Vernon, R. F. Garcia Ruiz, C. L. Binnersley, J. Billowes, M. L. Bissell, T. E. Cocolios, G. J. Farooq-Smith, K. T. Flanagan, W. Gins, R. P. de Groote, A. Koszorus, G. Neyens, K. M. Lynch, F. Parnefjord-Gustafsson, C. M. Ricketts, K. D. A. Wendt, S. G. Wilkins, and X. F. Yang, New J. Phys. (Fast Track Communication) **22**, 012001 (1-14) (2020).
25. A. Kastberg, T. Aoki, **B. K. Sahoo**, Y. Sakemi, and B. P. Das, Phys. Rev. A **100**, 050101 (R) (2019).
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