CURRICULUM VITAE

Name : Dr. Paramananda Jena
Designation : Assistant Professor (OES-I, Govt. Of Odisha)
Address : P.G. Department of Physics,
S.K.C.G. (Autonomous) College
Paralakhemundi-761200, Gajapati, Odisha, India
Email: parama.pondy@gmail.com; parama.phy@gmail.com

EDUCATIONAL QUALIFICATIONS

Degree	Institution/University
Ph.D. Physics	Pondicherry University, Puducherry, India.
M.Phil Physics	Pondicherry University, Puducherry, India.
M.Sc. Applied Physics & Ballistics	Fakir Mohan University, Balasore, Odisha, India.
B.Sc. Physics (Hons., Distinction)	Fakir Mohan (Autonomous) College, Balasore, Odisha, India.

CAREER PROFILE

1.	**Assistant Professor of Physics (OES-I, Govt. of Odisha)** SKCG (Autonomous) College, Paralakhemundi-761200 Gajapati, Odisha, India.	27th Feb. 2023 to Present
2.	**Research Associate** Centre of Excellence (CoE), under Odisha Higher Education Program for Excellence and Equity (OHEPEE) Assisted by World Bank Fakir Mohan University, Balesore-756020, Odisha, India. **Project entitled: "Development of Hybrid Nano-composite Materials for Efficient Electrochemical Energy storage (EES) Devices".**	2020 – 2023
3.	**Senior Research Scientist** Analytical Development Section SENTISS PVT. LTD, Research Centre, Gurgaon, Delhi, India. **Nature of Job: "Physical Characterization of Pharma Products"**	2019 – 2020
4.	**Post Doctoral Research Fellow (PDF)** School of Materials Science and Technology, IIT (B.H.U.), Varanasi-221004, U.P., India. **Project entitled: "Development of nanocrystalline materials and it's renewable energy applications (Fuel cells, Lithium ion Batteries)"**	2016 – 2019
5.	**Junior Research Fellow (JRF)** in BRNS-DAE Project Department of Physics, Pondicherry University, Puducherry-605014, India. (Visited Bhabha Atomic Research (BARC) Several weeks to Months as collaboative research for this project work during my Ph.D.) **Project entitled: "Development of oxygen sensor using low temperature oxide-ion conducting solid electrolytes for accelerator driven systems (ADS) applications"**	2014 – 2016

* Taiyuan University of Technology Taiyun, Shanxi Sheng, China, got an offer as **Postdoctoral Research Fellow** (not avail),
* Center for Materials for Electronics Technology (C-MET), Ministry of electronic Information Technology *(Meity)* Govt. of India, Pune, got an offer as **Research Scientist** (not avaible).
* Selected as **Assistant Professor** at ICFAI University, (not avail).

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SPECIALIZATION/AREAS Of INTEREST

- **Condense Matter Physics (Expt.)**
- **Materials Synthesis and Charaterization**
- **Solid Oxide Fuel Cells (SOFCs).**
- **Lithium ion Batteries**
- **Multifunctional Phosphors Materials.**

EXPERTISE

Various Synthesis Methods

Sol-gel, Hydrothermal, Co-precipitation, Gel Combustion, Electrospining for nanofibers, High energy ball milling technique etc., for the preparation of nanomaterials.

Characterization Techniques

TG/DTA, XRD, Rietveld refinement, Raman spectroscopy, FTIR, XRF, BET surface area analysis, SEM-EDX, HR-TEM, NOVO control Alpha-A Impedance spectroscopy, Particle size analysis, Zeta potential measurement, COLD ISOSTAIC PRESS (CIP), X-Ray Photoelectron Spectroscopy (XPS) etc.

Properties, Device fabrication and its Measurements

Crystal structure analysis, Impedance spectroscopy analysis and Ionic conductivity Studies, Sintering properties, Tape casting techniques, Fabrication of bottom cell SOFCs, Fabrication of half cell lithium ion batteries and its electrochemical characterization.

Software Skills: X' Pert High Score, Rietveld refinement for structural analysis byVESTA, Win Fit for impedance analysis, and Origin (6, 8.5).

AWARDS

- Best Poster @ International Conference on Emerging Materials and Processes-2014, (ICEMP 2014), IMMT – Bhubaneswar, Odisha, India.
- Best Poster @ Odisha Research Conclave-2021, Jointly Organised by Odisha State Higher Education Council and Utkal University, Odisha, India.
- Awarded Best Fellow Alumni and Alma Matter - 2023 from F.M. University, Balasore, Odisha.

MEMBERSHIP

- Life member of Indian Crystallographic Association (ICA): **LM671**
- Life member of Odisha Physical Society

REVIEWER

- Journal of Alloys and Compounds
- Journal of radioanalytical and nuclear chemistry
- RSC Advances

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WEB-LINKS FOR PERSONAL PROFILE

https://scholar.google.co.in/citations?user=CdwQFIwAAAAJ&hl=en

https://orcid.org/0000-0003-0625-9622

https://www.scopus.com/authid/detail.uri?authorId=34976583100
https://publons.com/researcher/4009851/paramananda-jena

Web of Science Researcher ID: ABD-4155-2020

ResearchID: rid41317

PUBLICATION PROFILE

BOOK CHAPTER :

Pervoskite Manganite Materials : Recent Advancements and Challenges as Cathode for Solid Oxide Fuel cell Applications, Book title :Energy Materials, Book Subtitle : Structure, Properties and Applications, pp 163-183, **(2023)**, ISBN : 978-981-99-2865-0, Spinger Nature, https://doi.org/10.1007/978-981-99-3866-7_7

RESEARCH PAPERS PUBLISHED IN REFEREED/PEER REVIEWED JOURNALS

1. Electrochemical performance of SnO_2 rods and SnO_2/rGO, SnO_2/MWCNTs composite materials as an anode for lithium-ion battery application-A comparative study, **Paramananda Jena,** N. Naresh, N. Satyanarayana, P. K. Patro, R. Biswal, M. C. Adhikary**,** ***Journal of Materials Science: Materials. Electctronics*****,* 32(6), (2021) 7619-7629. https://doi.org/10.1007/s10854-021-05478-5**

2. Microwave hydrothermal synthesis and electrochemical characterization of $NiMoO_4$ nanosheets/SnO_2 nanospheres/rGO nanocomposite as high-performance anode for lithium-ion batteries, N. Naresh, **Paramananda Jena,** S. Jayasubramaniyan, G Kanimozhi, P. Muralidharan, N.Satyanarayana, ***Inorganic Chemistry Communications,*** **133, (2021) 108916-108926.**
https://doi.org/10.1016/j.inoche.2021.108916

3. Bright aspects of defect and dark traits of dopant in photoluminescence of $Er_2X_2O_7:Eu^{3+}$ (X=Ti and Zr) pyrochlore: An insight using EXAFS, Positron and DFT, Santosh K. Gupta, K. Sudarshan, **Paramananda Jena,** P.S. Ghosh, A.K. Yadav, S.N. Jha, D. Bhattacharyya, ***Materials Advances***, 2 **(2021) 3075-3087. DOI: 10.1039/d0ma00978d**

4. Structural characterization and electrical/electrochemical studies of $Nd_{1-x}Ba_xCo_{1-y}(Fe, Ti)_y O_{3-\delta}$ ($0 \leq x \leq 0.3$, $y = 0, 0.2$) materials as cathode for SOFCs, **Paramananda Jena**, D. Kumar, P. K. Patro, R. K. Lenka, A. K. Singh, ***Journal of Solid State Chemistry***, **292, (2020) 121682-121692.**
https://doi.org/10.1016/j.jssc.2020.121682

5. Structural Characterization and Antioxidant Potential of Chitosan by γ-Irradiation from the Carapace of Horseshoe Crab, S. Pati, A. Chatterji, **Paramananda Jena,** B. P. Dash, B. R. Nelson, T. Sarkar, S. Shahimi, H. Atan Edinur, , Y. K. Mohanta, D. Acharya, ***Polymers,*** **12, (2020) 2361.**

https://doi.org/10.3390/polym12102361

6. Structural, Magnetic and Dielectric Studies on Half-doped $Nd_{0.5}Ba_{0.5}CoO_3$ Perovskite Cobaltite Nanoparticles, D. Kumar, **Paramananda Jena**, A. K. Singh, ***Journal of Magnetism and Magnetic Materials*, 561, (2020) 167330.** https://doi.org/10.1016/j.jmmm.2020.167330

7. Size and composition dependent structural investigations on $Nd_{1-x}Ba_xCoO_3$ (x= 0.2, 0.3 and 0.4) Perovskite cobaltites using X-ray diffraction, Dinesh Kumar, Pragyanand Prajapati, **Paramananda Jena,** Akhilesh Kumar Singh, ***Materials Today Proceedings*, 26 (2020) 3492-3496.** https://doi.org/10.1016/j.matpr.2020.04.525

8. Characterization dataset for pre- and post-irradiated shrimp waste chitosan, S. Pati, **Paramananda Jena,** S. Shahimi, B. R. Nelson, D. Achary, B. P. Dash, A. Chatterji, ***Data in Brief*, 32 (2020) 106081.** https://doi.org/10.1016/j.dib.2020.106081

9. Influence of lanthanum (La^{3+}) doping on structural and electrical/electrochemical properties of double perovskite Sr_2CoMoO_6 as anode materials for IT-SOFCs, P. Kumar**, ParamanandaJena**, P. K. Patro, R.K. Lenka, A.S.K. Sinha, P. Singh, R. K. Singh, ***ACS Applied Materials & Interfaces*, 27(11) (2019) 24659-24667.** https://doi.org/10.1021/acsami.9b03481

10. Facile Synthesis of MoO_3/rGO nanocomposite as anode materials for high-performance lithium-ion battery applications, N. Naresh, **Paramananda Jena**, N. Satyanarayana, ***Journal of Alloys and Compound*, 810 (2019) 151920-151926.** https://doi.org/10.1016/j.jallcom.2019.151920

11. Structural and room-temperature ferromagnetic properties of pure and Ni-doped TiO_2 nanotubes, S.K.S patel, **Paramananda Jena**, N.S. Gajbhiye**, *Materials Today Proceedings*, 15(3) (2019) 388-393.** https://doi.org/10.1016/j.matpr.2019.04.098

12. Hydrothermal synthesis and characterization of an apatite type lanthanum silicate ceramic for SOFC electrolyte applications, **Paramananda Jena**, P. K. Patro, Amit Sinha, R.K. Lenka, A.K. Singh, T. Mahata, P.K. Sinha, ***Energy Technology*, 6 (2018) 1739-1746.** https://doi.org/10.1002/ente.201700867

13. A step towards synthesizing unique UV and visible excitable $AWO_4:Eu^{3+}$ (A=Ca and Sr) nanophosphors using high energy ball milling method: luminescence differences in going from $Ca^{2+} \rightarrow Sr^{2+}$, **Paramananda Jena,** Santosh K. Gupta, K. Sudarshan, N. Pathak, Akhilesh Kumar Singh, ***Journal of Materials Science: Materials in Electronics*, 29, (2018) 13751-13765.** https://doi.org/10.1007/s10854-018-9506-1

14. Structural characterization, electrical conductivity, chemical stability and OCV studies of nanocrystalline $La_{10}Si_6O_{27}$ material for SOFCs electrolyte applications, **Paramananda Jena**, S.

Jayasubramaniyan, P. K. Patro, R.K. Lenka, Amit Sinha, P. Muralidharan, E. S. Srinadhu, N. Satyanarayana, ***Applied Physics A***, **(2018) 124:125. https://doi.org/10.1007/s00339-017-1520-2**

15. Microwave-Assisted Hydrothermal Synthesis of SnO_2/Reduced Graphene-Oxide Nanocomposite as Highly Stable Anode for Lithium-ion Batteries, N. Naresh, D. Narsimulu, **Paramananda Jena**, E.S Srinadhu, N. Satyanarayana, ***Journal of Materials Science: Materials in Electronics***, **29, (2018) 14723-14732. https://doi.org/10.1007/s10854-018-9609-8**

16. Synthesis of α-MoO_3 nanofibers for enhanced field-emission properties, S.K.S.Patel, K. Dewangan, S.K.Srivastav, N.K. Verma, **Paramananda Jena**, Ashish Kumar Singh, N.S.Gajbhiye, ***Advanced Materials Letters***, **9(8) (2018), 585-589. https://doi.org/10.5185/amlett.2018.2022**

17. Energy transfer dynamics and time resolved photoluminescence in $BaWO_4:Eu^{3+}$ nanophosphorous synthesized by mechanical activation, **Paramananda Jena**, Santosh K. Gupta, N. K. Verma, Akhilesh Kumar Singh, R.M. Kadam, ***New Journal of Chemistry***, **41 (2017) 8947-8958.**
https://doi.org/10.1039/C7NJ01249G

18. Structural characterization and electrical conductivity studies of β-PbO nanofibers by electrospinning process, H. K. Kamatam, S. Vinoth, **Paramananda Jena**, M. Venkateswarlu, N.Satyanarayana, ***Materials Chemistry and Physics***, **194 (2017) 188-197.**
https://doi.org/10.1016/j.matchemphys.2017.03.040

19. On the Photo-luminescence properties of sol-gel derived undoped and Dy^{3+} ion doped Nanocrystalline Scheelite type $AMoO_4$ (A=Ca, Sr, and Ba), **Paramananda Jena**, Santosh K. Gupta, V. Natarajan, O. Padmaraj, N. Satyanarayana, M. Venkateswarlu, ***Materials Research Bulletin***, **64 (2015) 223-232. https://doi.org/10.1016/j.materresbull.2014.12.028**

20. Structural characterization and photoluminescence properties of sol-gel derived near white light emitting nanocrystalline $BaMoO_4 : Dy^{3+}$, **Paramananda Jena**, Santosh K. Gupta, V. Natarajan, Manjulata Sahu, N. Satyanarayana, M. Venkateswarlu, ***Journal of Luminescence*****, 158 (2015) 203-210. https://doi.org/10.1016/j.jlumin.2014.09.042**

21. Preparation, characterization and electrical conductivity studies of nanocrystalline Scheelite type $Ba_{1-x}Dy_xMoO_{4+\delta}$, **Paramananda Jena**, N. Nallamuthu, M. Venketswarlu, N. Satyanarayana, ***Ceramics International***, 40 (**2014**) 2349-2358. **https://doi.org/10.1016/j.ceramint.2013.08.005**

22.. Electrochemical studies of electrospun organic/inorganic hybrid nanocomposite fibrous polymer electrolyte for lithium battery, O.Padmaraj, B. Nageshwar Rao, **Paramananda Jena**, M. Venkateswarlu, N. Satyanarayana, ***Polymer***, **55 (2014) 1136-1142.**
https://doi.org/10.1016/j.polymer.2014.01.015

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23. Structural characterization and electrical conductivity studies of $BaMoO_4$ nanofibers prepared by sol-gel and electrospinning techniques, **Paramananda Jena**, N. Nallamuthu, K. Hariprasad, M. Venkateswarlu, N. Satyanarayana, ***Journal of Sol-gel Science and Technology***, **72 (2014) 480-489. https://doi.org/10.1007/s10971-014-3460-z**

24. Structural characterization and Electrical conductivity studies $BaMoO_4$ nanorods prepared by modified acrylamide assisted sol-gel process, **Paramananda Jena**, N. Nallamuthu, P.K. Patro, M. Venkateswarlu, N. Satyanarayana, ***Advances in Applied Ceramics***, **113(6) (2014) 372-379. https://doi.org/10.1179/1743676114Y.0000000170**

PUBLICATIONS IN CONFERENCE PROCEEDINGS [NATIONAL & INTERNATIONAL]

1. "Estimation of Lattice Stain and Optical Properties of Scheelite type AWO_4 (A= Ca, Sr, Ba) Nanocrystalline Materials Synthesized by Mechanical Activation", **Paramananda Jena,** Dinesh Kumar, Narendra Kumar Verma, Akhilesh Kumar Singh, 63rd DAE Solid State Physics Symposium (DAE-SSPS 2018) AIP Conference Proceedings **2115, 030199 (2019).**
https://doi.org/10.1063/1.5113038

2. "Preparation and Characterization of $BaMoO_4$ nanofibers by electrospinning", **Paramananda Jena,** N. Satyanarayana, M. Venkateswarlu, International Conference on Emerging Materials and Process – 2014, IMMT – Bhubaneswar, India (ICEMP - 2014, Feb. 26-28), **ISBN: 978-81-928552-1-9, page 414-418.**

3. "Electrospun nanocomposite fibrous polymer electrolyte for secondary lithium battery applications", O. Padmaraj, B. Nageswara rao, **Paramananda Jena**, M.Venkateswarlu, N.Satyanarayana, (AIP-2013), 58th DAE (SSPS), Thapar University, Patiala, Punjab, India, **1591, 1723- 1725 (2014).**
https://doi.org/10.1063/1.4873090

4. "Electrical conductivity studies of nanocrystalline Dy^{3+} doped $CaMoO_4$ synthesised by sol-gel process", **Paramananda Jena,** N.Nallamuthu, M.Venkateswarlu, N.Satyanarayana, NSTI **Nanotech (2013), ISBN 978-148220584-8, 2 (2013) pp. 712-715(May 12-16), Washington, DC.**

5. "Synthesis and characterization of $LiMn_2O_4$ spinel phase nanoparticles by pechini process", K. Hariprasad, D. Narasimulu, **Paramananda Jena,** M. Venkateswarlu, N. Satyanarayana, 6th International Symposium on Macro and Supramolecular Architectures and Materials (**MAM-2012), ISBN: 978- 93-82563-36-5, (2012) pp. 333-340, Coimbatore, India.**

6. "Preparation and Characterization of Dy^{3+} doped $SrMoO_4$ Nanoparticles", **Paramananda Jena,** N. Nallamuthu, M.VenKateswarlu, N.Satyanarayana, 27th PSSI National Symposium on Plasma Science and Technology (Plasma-2012), **ISBN 978-93-82062-82-0, (2012) pp.31-34.**

CURRICULUM VITAE

7. "Electrical conductivity studies of nanocrystalline Dy^{3+} doped $SrMoO_4$ synthesized by sol-gel process", **Paramananda Jena,** N.Nallamuthu, M.Venkateswarlu, N.Satyanarayana, NSTI **Nanotech-2012, ISBN: 978-1-4665-62769-9, 3 (2012) pp. 545-548, Santa Clara, California.**

8. "Electrical conductivity studies of nanocrystalline Dy^{3+} doped $BaMoO_4$ synthesised by sol-gel process", **Paramananda Jena,** N.Nallamuthu, M.Venkateswarlu, N.Satyanarayana, **NSTI Nanotech-2011, ISBN: 978-1-44398-7142-3, 1 (2011) pp.299-302 (13-16 June), Boston, MA.**

WORKSHOPS, SHORT TERM COURSES/ TRAINING PROGRAMMES CONFERENCES (POSTER AND ORAL PRESENTATIONS)

1. Participated 6 Days Training Program on Indian Knowledge System (Offline Mode) 28th August to 02nd Septmber, **2023** Organized by UGC-HRDC at Banaras Hindu University, Varanasi-221005.

2. Participated in the Seminar (Offline Mode) of the "Precursor Events of G20-3rd Education Working Group Meeting" held at CSIR-IMMT, Bhubaneswar from 23rd to 26th April **2023**.

3. Odisha Research Conclave (ORC-14-16 Nov. **2022**), "Development of nano-composite electrode materials as well as oxide electrolyte materials for energy conversation and storage applications", Paramananda Jena, R.Biswal, M.C. Adhikary, Jointly Organized by Odisha State Higher Education Council and Revenshaw University.

4. Odisha Research Conclave (ORC-14 Nov. **2021**), "Development of electrode materials and its composites with a suitable conducting medium for high performance lithium ion-ion batteries", Paramananda Jena, M.C. Adhikary and R.Biswal, Jointly Organized by Odisha State Higher Education Council and Utkal University. (**Received Best Poster Award**).

5. International Virtual Conference on "Supercapacitors and Batteries for future avenues (ICSBFA - 2020)" organized by Bharathidasan University, Tiruchirappalli, 620024, India, 8- 9th, September **2020**.

6. Online workshop on "Rietveld Refinement Method" organized by UGC-DAE consortium for scientific research Mumbai Centre in association with Indore Centre, September 22-24, **2020**.

7. Invited talk on topic "Development of nanocrystalline materials for renewable energy applications: Solid Oxide Fuel Cells (SOFCs)" National webinar on-Nanotechnology for energy harvesting and in biomedical application, 29th August **2020**, University department of chemistry, DSPMU, Ranchi.

8. Indo-UK joint International Webinar on "Current Trends in Chemical Process Technology and Materials Development", Organized by IIT-Guwahati and University of ABERDEEN, 19 - 20 August **2020**.

9. 63rd DAE Solid State Physics Symposium, Organized by Bahabha Atomic Research Centre, Mumbai, Sponsored by: Board of research in Nuclear Sciences Department of Atomic Energy, Govt. of India, at Gurujambheshwar University of Science and Technology, Hisar, Haryana, India (Dec. 18- 22, **2018**).

CURRICULUM VITAE

10. National Symposium on "ADVANCES IN FUNCTIONAL AND EXOTIC MATERIALS" & 29th Annual General Meeting of Materials Research Society of India (MRSI, INDIA-29)", Organized by Center for High Pressure Research, Bharathidasan University, Tiruchirapalli, India (February 14-16, **2018**).

11. "45th National Seminar on Crystallography (NSC-45)", School of Materials Science & Technology, Indian Institute of Technology (BHU) Varanasi-221005, UP, India, (July 9-12, **2017**).

12. AICTE Sponsored Short Term Course on "Geometrical & Mathematical Crystallography with Applications to Structural studies", School of Materials Science & Technology, Indian Institute of Technology (BHU) Varanasi-221005,UP, India, (February 14-19, **2017**).

13. 2nd National Conference on Materials for Energy Conversion and Storage, Pondicherry University Puducherry, In Association with Energy Science Society of India (ESSI), (MECS-2016, March 11-13, **2016**).

14. International Conference on Magnetic Materials and Applications, Department of Physics Pondicherry University, Puducherry-605014, India (ICMAGMA-2014, September 15-17, 2014).

15. ICEMP- 2014- International Conference on Emerging Materials and Processes held at IMMT Bhubaneswar, India, 26th-28th, February, **2014** (**Received Best Poster Award**).

16. National Seminar on "NANOSCIENCE IN BALLISTICS" held at PG Department of Applied Physics and Ballistics Fakir Mohan University Balasore, India (March, **2014**).

17. Workshop on Dielectric Impedance Analyzer, NOVOCONOL Technologies GmbH & Co. KG Obereebacher Street 9, 56414 Hundsangen /Germany, Organized by SINSIL INTERNATIONAL, held at Raman Research Institute (RRI) Bangalore –560080 (20th-21th, January, **2014**).

18. One day "Short Course on Microwave Assisted Organic Synthesis " by Prof. C. Oliver Kappe from Karl Franzens-University, Graz, Austria and Prof. I. N. N. Namboothiri. - Dept. of Chem., IIT, Mumbai held at IIT Mumbai, India (31st October, **2012**).

19. School of Density Functional Theory (DFT), Department of Physics, Pondicherry University Puducherry-605014, India (10th – 12th December **2012**).

20. 27th PSSI National Symposium (Plasma-2012), on "Challenges of Power Generation and Lighting 21st Century", held at Department Physics Pondicherry University in association with Plasma Science Society of India (PSSI) (10th -13th, December, **2012**).

CURRICULUM VITAE

21. International Conference on Advanced Materials, Department Physics, PSG College of Technology, Coimbatore-641004, Tamilnadu, India (December 12-16, 2011).

22. UGC-SAP Sponsor Seminar on "COMPUTATIONAL MATERIALS SCIENCE", held at Department of physics Pondicherry University, Puducherry-605014 (March, 2011).

23. UGC-SAP-DRS-I Sponsor "National Seminar on Analysis of Partial Differential Equations",held at Department of Mathematics, Pondicherry University, Puducherry- 6050141, India (8^{th} – 9^{th}, December, 2009).

24. UGC SPONSORED WORKSHOP ON "Scientific Computing and Mat Lab" Organized by P.G Department of Mathematics in collaboration with Computer science Honours Department Fakir Mohan Autonomous College, Balesore, India (19^{th} - 22^{nd} February-2009).

PERSONAL DETAILS & PERMANENT ADDRESS:

Nationality: Indian, Marital Status: Married
Languages Known: Odia, Hind, English
Permanet Address: Paramananda Jena [S/O – Late Jagannath Jena],
[AT/PO]: Padhiaripalli, [Via]: D.J Pur, [Dist.]: Keonjhar, Odia – 758078, India.
Mob: 9348538793

Declaration:

All the above information is true to my knowledge.

Dr. Paramananda Jena