**Research and development in Pub Kamrup College**

**1. Major Research Projects**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No.** | **Name of the Project** | **Name of the Principal Investigator** | **Year of Award** | **Collaboration** | **Amount Sanctioned**  **(Rs.)** | **Duration of the project** | **Name of the Funding Agency** | **Link** |
| 1. | Development of a Cloud Computing Based Wireless Sensor for Patient Monitoring System in Health Care Engineering | Dr. Julie Saikia  Physics | 2019 | IIT Guwahati | 1086750/- | 2 years | DBT, Govt. of India | <http://pubkamrupcollege.co.in/upload/notice/1579782930.pdf> |
| 2. | To investigate the interaction between Microbes and microbial product and mosquito Larvae for Controlling Larval Population *in vivo* | Dr. Kamal Sarma  Zoology | 2018 | Assam University, Diphu Campus | 8,00,000/- | 2 Years | DBT, Govt. of India | [http://pubkamrupcollege.co.in/upload/notice/1579782939.pdf](http://pubkamrupcollege.co.in/upload/notice/1579782939.pdf%20) |
| 3. | Exploring the inhibitory effect of biopesticide on virulence and pathogenicity in *Magnoprothe oryzae* | Dr Dipak Konwar | 2016 | Amity University | 35,80,000/- | 2 Years | DBT, Govt. of India | [http://pubkamrupcollege.co.in/upload/notice/1579782948.pdf](http://pubkamrupcollege.co.in/upload/notice/1579782948.pdf%20) |

**2. Minor Research Projects**

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| --- | --- | --- | --- | --- | --- |
| **Department** | **Name of the faculty** | **Topic** | **Sponsored By** | **Amount**  **(Rs.)** | **Year** |
| Botany | Dr Dipak Konwar | Mycorrhiza of muga host plants. | UGC | 1,48,000/- | 2012 |
| Dr P C Kalita | Fern diversity in Madankamdev hill regions of Kamrup district, Assam | UGC | 1,20,000/- | 2013 |
| Observation on Endemic, Rare and Threatened Angiospermic plants of Kamrup district, Assam | UGC | 1,00000/- | 2010 |
| Studies on Floristic Diversity of North Guwahati Hill Region of Kamrup district, Assam | UGC | 75,000/- | 2005 – 2007 |
| Assamese | Dr Khagesh Sen Deka | a) *Asamiya Byakaranar Kramabikas : Eti Bislesanatmak Adhyayan* | UGC | 1.40,000/- | 2009–2010 |
| b) *Patidarang Ancalar Puroni Puthi-Panji : Eti Kshetrabhittik Adhyayan* | UGC | 65,000/- | 2005– 2007 |
| Mr. Barnali Deka | Orissa Aru Asamor Loka Bhaxar Tulanatmok Adhyayan : Kamrup Aru Baleswar Jilar Ullikhan Saha. | UGC | 80,000/- | 2005-2007 |
| Kamrup Aru Viraja Mandirar Reeti-Neeti-Pratha Aru Parampara : Eti Tulanamulak Adhayan | UGC | 1,48,000/- | 2008-2010 |
| Nayanmoni Baruah | Asamar Sadhu Kathat Samaj-Jiwanar Pratifalan: Etiadhyayan | UGC | 55,000/- | 2012-2013 |
| Dulumoni Deka | Asamiya Sahityat Droupadi: Eti Samikshatmak Adhyayan | UGC | 1,20,000/- | 2009-2010 |
| Syed Abdul Malikar Oipanyashat Nadi | UGC | 90,000/- | 2013 |
| Zoology | Dr Kamal Sarma | A survey of the indigenous ornamental fishes available in various water bodies in Kamrup District. | UGC | 1,00,000/- | 2005-2007 |
| Dr Manash Barthakur | Role of water extract of selected traditionally used antidiabetic plant against induced diabetic mammal | UGC | 1,00,000/- | 2004-2006 |
| Protection of diabetic lens by antidiabetic polyherbal formulation. | UGC | 75,000/- | 2007- 2009 |
| Economics | Mr. Khagen Das | Mobilisation of Resources by Gaon Panchayats in Assam | UGC | 25,000/- | 2009 – 2011 |
| Narayan Goswami | On Employment potential of brick kiln of Kamrup District. | UGC | 1,00,000/- | 2009-2010 |
| Physics | Dr B K Dev Choudhury | Links between Nonlinear Dynamics and Thermodynamics | UGC | 50,000/- | 2007 -2009 |
| Some Aspects of Modified chaplygin Gas(added with a Brane-world Cosmological perspective | IASc | Sponsored by the Institute | 2010 |
| Dr Julie Saikia | On primary mass composition of Giant air showers | UGC | 50,000/- | 2007-2009 |
| English | Mr. Dipen Bezbaruah | *Tradition and Practices of the Tea Tribes of Darrang and Sonitpur District of Assam : A Folkloristic Study*” | UGC | 1,30,000/- | 2012 |
| Mr. Montu Saikia | A Study on the Grammar and Vocabulary of Sari as is Spoken by the Tea Garden Areas of Assam with Special Reference to Jorhat District | UGC | 1,50,000/- | 2012 |
| Geography | Mr. Aditya Deka | Impact of Drought Hazard on Agriculture in Rangia Subdivision | UGC | 60,000/- | 2008 |
| Diganta Kr Rabha | Impact of Flood Hazard on Agriculture in Rangia Subdivision | UGC | 60,000/- | 2008 |
| Mr. Ayez Ali | Geo-environmental Status of Wetlands in Hajo Development Block, A case of some selected beels | UGC | 1,20,000/- | 2012 |
| Statistics | Mr. Atwar Rahman | Determination of Relationship between the Temperature and Length of Day in the context of Assam. | UGC | 1,25,000/- | 2011 |
| History | Imdad Ali Ahmed | Aspects of Historical Geography of Medieval Assam | UGC | 60,000/- | 2008 |
| Pratap Singha and His Times | UGC | 50,000/- | 2004 |
| Chemistry | Dr Utpaljyoti Medhi | 1. Hydrology and Ecological Quality of an Urban Wetland System- A Case Study with Deepor Beel, Guwahati, Assam. | UGC | 65,000/- | 2007 |
| 1. Study on Water and Soil Quality near a Pulp and Paper Mill - A case study in and around Jagiroad Area | UGC | 85,000/- | 2009 |
| Study on Water Specially Drinking Water Quality in an around Bihata Chariali | UGC | 1,20,000/- | 2011 |
| Dr. Nripendra NathTalukdar | Chemical and spectroscopic analysis of *Kolakhar*- the food additive derived from banana plant | UGC | 55,000/- | 2006 |
| Potassium Chloride from banana plant | UGC | 1,30,000/- | 2011 |
| Philosophy | Jiban Ch. Sarma | Superstition and its impact on rural people of Pub Kamrup Area, Causes and Remedies: A Case study | UGC | 95,000/- | 2011 |
| Education | Dr. Alaka Das | Education of the differently abled at the secondary level and role of Rastriya Madhyamik Siksha Abhiyan (RMSA) | UGC | 180000/- | 2015 |

**3. Patent:**

1. Dr Nrinpendra Nath Talukdar, Associate Professor, Department of Chemistry has one patent. **Indian Patent No. 222135 dated 23/07/2008**; Title – A method for isolation of Potassium Carbonate from Banana Plant.
2. Dr Talukdar has filed another patent application (Application No. 1669/KOL/2008 of 26/09/2008; Title–Highly Efficient Catalyst from Banana plant for Transesterification of Vegetable Oils to Fatty Acid Methyl Esters).

**4. Student Research Projects:**

**(A) Research projects done in reputed universities/research institutes:**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Name of student** | **Programme** | **Institute where work done** | **Supervisor** | **Sponsored by** | **Year** | **Topic** |
| 1. | Alakjyoti Patowary | Summer Research Fellowship Programme | Assam Science and Technology University, Assam | Dr. Bharat Kakati  ASTU | DST, Govt. of India | 2019 | A study on Non-Thermal Air Plasma in Experimental Glow Discharge Reactor |
| 2. | Rinki Deka | Summer Research Fellowship Programme | Aligarh Muslim University | Prof. Wasim Ahmed | IAS, Bengaluru & NSA, New Delhi | 2015 | Some studies on soil inhabiting nematodes and their role in soil ecosystem |
| 3. | Kabita Deka | Summer Research Fellowship Programme | Bharathidasan University, Tiruchirappalli | Prof. Paulasamy Muruganandam  Bharathi Darshan University | IAS, Bengaluru & NSA, New Delhi | 2013 | Brain rhythms- a physics based investigation |
| 4. | Harun Al Rashid | Summer Research Fellowship Programme | Jamia Millia Islamia, New Delhi | Prof. Mahhammad Sami  Jamia Millia Islamia | IAS, Bengaluru & NSA, New Delhi | 2012 | Some basic ideas on Friedmann- Cosmological model |
| 5. | Bhaswati Sarma | M.Sc. Project | Institute of Advanced Study in Science and Technology, Govt. of India | Dr. Biswajit Choudhury | --- | 2019 | Gold nanoparticles decorated MgO nanoflakes for UV photocatalytic application |
| 6. | Kaushik Sarkar | M.Sc. Project | Institute of Advanced Study in Science and Technology, Govt. of India | Dr. Biswajit Choudhury | --- | 2019 | Insulating MgO decorated two-dimensional carbon nitride nanosheet for an interfacial photocatalysis |
| 7. | Mrinal Das | Zoology | Summer Research Fellowship Programme | IASST, Guwahati |  | 2018 |  |
| 8. | Hirak Jyoti Deka | Zoology | Summer Research Fellowship Programme | IASST, Guwahati |  | 2018 |  |

**(B) In-house student research projects:**

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| --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Title of Project** | **Department** | **Programme attended/Selected** | **Funded by** | **Year** |
| 1. | Theoretical and experimental studies of the impacts of change in water quality on aquatic community | Biophysics |  |  | 2019 |
| 2. | Green synthesis of gold nanoparticle from neuroactive natural source | 2019 |
| 3. | Screening of differently synthesized nanoparticles for better larvicidal activity from natural source | 2019 |
| 4. | In silico simulations of some neuroactive receptors for its enhanced activities | 2019 |
| 5. | Development and application of sensors for vital body parameter measurement in Biomedical instrumentation | 2019 |
| 6. | Green synthesis (Aloe Vera) of ZnO nanoparticles (Cu doped and Cu undopded) | 2019 |
| 7. | Biofuel extraction from waste materials | 2019 |
| 8. | Chemical synthesis of ZnO nanapartcles | 2019 |
| 9. | Antimicrobial activity of metal-organic frameworks (MOF) | 2019 |
| 10. | Synthesis of water soluble carbon nanoparticles and its application in agriculture | 2019 |
| 11. | Theoretical and experimental studies of the impacts of change in water quality on aquatic community | 2019 |
| 12. | Development of biscuits using kidney bean flour and storage study | Food Processing and Quality Management | 2019 |
| 13. | Fortification of cake with black rice and shelf life study | 2019 |
| 14. | Development of fortified papad and shelf life study | 2019 |
|  | Analytical study of barium titanate and magnesium oxide nanoparticles | Physics |  | 2019 |
| 15. | Preparation of chemically deposited nanocrystalline lead sulphide | 2019 |
| 16. | Design of a regulated power supply using  Integrated circuit and Zener diode | 2019 |
| 17. | Project on Water Level Indicator | 2019 |
| 18. | A Study on the Impact of Rape Cases Crime in Greater Baihata Chariali Area | Statistics |  | 2019 |
| 19. | A Project on Trend Analysis of Crime Cases in Assam from 2001-2010 |  |
| 20. | Graph Coloring and its Real Time Application: An Overview | Mathematics |  | 2019 |
| 21. | Boolean Algebra and Mathematical Logic |  | 2019 |
| 22. | Some Properties of Klein four group, Dihedrals and Quaternions |  | 2019 |
| 23. | Check Digit Generation of University Registration Number using Theory of Congruences of Number Theory |  | 2019 |

**5. Publications of faculty members:**

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| --- | --- | --- | --- | --- | --- | --- |
| **Title of paper** | **Name of the**  **author/s** | **Department of the teacher** | **Name of**  **journal** | **Year of publication** | **ISBN/ISSN number** | **Link of the recognition in UGC enlistment of the Journal** |
| [Designing ferroelectric/ferromagnetic composite with giant self-biased magnetoelectric effect](javascript:void(0)) | Bipul Deka, Yong-Woo Lee, I-Ryeol Yoo, Do-Woo Gwak, Jiung Cho, Hyun-Cheol Song, Jong-Jin Choi, Byung-Dong Hahn, Cheol-Woo Ahn, and Kyung-Hoon Cho | Physics and Biophysics | Applied Physics Letters | 2019 | [ISSN](https://en.wikipedia.org/wiki/International_Standard_Serial_Number)  [0003-6951](https://www.worldcat.org/search?fq=x0:jrnl&q=n2:0003-6951) (print) [1077-3118](https://www.worldcat.org/search?fq=x0:jrnl&q=n2:1077-3118) (web) | <https://aip.scitation.org/doi/abs/10.1063/1.5128163?journalCode=apl> |
| [Magnetic and Dielectric Properties of Y3−xSmxFe5O12 (x = 0.0 to 3.0)](javascript:void(0)) | B Deka, S Ravi | Journal of Superconductivity and Novel Magnetism | 2018 | ISSN  1557-1939 | <https://link.springer.com/article/10.1007/s10948-017-4436-3> |
| [Ferromagnetism in Fe-doped BaTiO3 Ceramics](javascript:void(0)) | B Deka, S Ravi | Journal of Superconductivity and Novel Magnetism | 2018 | ISSN  1557-1939 | <https://link.springer.com/article/10.1007/s10948-017-4321-0> |
| [Effect of Mn doping on magnetic and dielectric properties of YFeO3](javascript:void(0)) | B Deka, S Ravi, A Perumal, D Pamu | Ceramics International | 2017 | ISSN: 0272-8842 | <https://www.sciencedirect.com/science/article/pii/S0272884216318545> |
| [Impedance spectroscopy and ac conductivity mechanism in Sm doped Yttrium Iron Garnet](javascript:void(0)) | B Deka, S Ravi, D Pamu | Ceramics International | 2017 | ISSN: 0272-8842 | <https://www.sciencedirect.com/science/article/pii/S0272884217308891> |
| [Evolution of structural transition, grain growth inhibition and collinear antiferromagnetism in (Bi1-xSmx) FeO3 (x= 0 to 0.3) and their effects on dielectric and magnetic](javascript:void(0)) | B Deka, S Ravi, D Pamu | Ceramics International | 2017 | ISSN: 0272-8842 | <https://www.sciencedirect.com/science/article/pii/S0272884217319624> |
| [Study of impedance spectroscopy and electric modulus of PbTi1–xFexO3 (x= 0.0–0.3) compounds](javascript:void(0)) | B Deka, S Ravi |  | Journal of Alloys and Compounds | 2017 | ISSN: 0925-8388 | <https://www.sciencedirect.com/science/article/abs/pii/S0925838817319126> |
| [Study of Exchange Bias in Mn-Doped YFeO3 Compound](javascript:void(0)) | B Deka, S Ravi, A Perumal | Journal of Superconductivity and Novel Magnetism | 2016 | ISSN  1557-1939 | <https://link.springer.com/article/10.1007/s10948-016-3521-3> |
| 100 MeV Si9+ swift heavy ion irradiation induced enhancement in electrochemical properties of electrolyte membrane composites based on ionic liquid-polymer-nanocomposite | **A.K. Nath** and A. Kumar | Physics | Journal of Membrane Science | 2015 | 0376-7388 | <https://www.sciencedirect.com/science/article/pii/S0376738815001969> |
| Enhancement of electrochemical properties of ionic liquid based nanocomposite polymer electrolytes by 100 MeV Si9+ swift heavy ion irradiation. | **A.K. Nath** and A. Kumar | Ionics | 2014 | ISSN No.: 0947-7047 (print)  1862-0760 (online) | <https://link.springer.com/article/10.1007/s11581-014-1133-0> |
| Scaling of AC conductivity, electrochemical and thermal properties of ionic liquid based polymer nanocomposite electrolytes | **A.K. Nath** and A. Kumar | Electrochimica Acta | 2014 | ISSN No.: 0013-4686 | <https://www.sciencedirect.com/science/article/pii/S0013468614004150> |
| Swift heavy ion irradiation induced enhancement in electrochemical properties of ionic liquid based PVdF-HFP-layered silicate nanocomposite electrolyte membranes | **A.K. Nath** and A. Kumar | Journal of Membrane Science | 2014 | ISSN No.: 0376-7388 | <https://www.sciencedirect.com/science/article/pii/S0376738813008739> |
| Ionic Liquid based Polymer Electrolyte dispersed with Dedoped Polyaniline Nanorods | **A.K. Nath** and A. Kumar | Solid State Ionics | 2013 | ISSN No.: 0167-2738 | <https://www.sciencedirect.com/science/article/abs/pii/S016727381300372X> |
| Ionic transport properties of PVdF-HFP-MMT intercalated nanocomposite electrolytes based on ionic liquid, 1-butyl-3 methylimidazolium bromide | **A.K. Nath** and A. Kumar | Ionics | 2013 | ISSN No.: 0947-7047 (print)  1862-0760 (online) | <https://link.springer.com/article/10.1007/s11581-013-0878-1> |
| Gamma Ray Irradiation Effects on the Ferroelectric and Piezoelectric Properties of Barium Titanate Ceramics | Nirmali Medhi and **A.K. Nath** | Materials Engineering and Performance | 2013 | ISSN No.: 1059-9495 (print)  1544-1024 (online) | <https://link.springer.com/article/10.1007/s11665-013-0569-0> |
| Effect of gamma ray irradiation on the ferroelectric and piezoelectric properties of barium stannate titanate ceramics | **A.K. Nath** and Nirmali Medhi | Radiation Physics and Chemistry | 2013 | ISSN No.: 0969-806X | <https://www.sciencedirect.com/science/article/abs/pii/S0969806X13003381> |
| Piezoelectric properties of environmental friendly bismuth doped barium titanate ceramics | **A.K. Nath** and Nirmali Medhi | Materials Letters | 2012 | ISSN No.: 0167-577X | <https://www.sciencedirect.com/science/article/abs/pii/S0167577X11015606> |
| Density variation and piezoelectric properties of Ba(Ti1-xSnx)O3 ceramics prepared from nanocrystalline powders | **A.K. Nath** and Nirmali Medhi | Bulletin of Materials Science | 2012 | ISSN No.: 0250-4707 (print)  0973-7669 (electronic) | <https://www.ias.ac.in/article/fulltext/boms/035/05/0847-0852> |
| Barium titanate nanoparticles produced by planetary ball milling and piezoelectric  properties of corresponding ceramics | K. Chandramani Singh, **A.K. Nath** | Materials Letters | 2011 | ISSN No.: 0167-577X | <https://www.sciencedirect.com/science/article/abs/pii/S0167577X10010967> |
| Structural, electrical and piezoelectric properties of nanocrystalline tin-substituted barium titanate ceramics | K. Chandramani Singh, **A.K. Nath**, Radhapiyari Laishram, O.P. Thakur | Journal of Alloys and Compounds | 2011 | ISSN No.: 0925-8388 | <https://www.sciencedirect.com/science/article/abs/pii/S0925838810028690> |
| Ferroelectric, piezoelectric and electrostrictive properties of Ba(Ti1-xSnx)O3 ceramics  obtained from nanocrystalline powder | **A.K. Nath**, K. Chandramani Singh, Radhapiyari Laishram, O.P. Thakur | Materials Science and Engineering B | 2010 | ISSN No.: 0921-5107 | <https://www.sciencedirect.com/science/article/pii/S0921510710003326> |
| Influence of ball milling parameters on the particle size of barium titanate nanocrystalline powders | **A.K. Nath**, Chongtham Jiten, K. Chandramani Singh | Physica B | 2010 | ISSN No.: 0921-4526 | <https://www.sciencedirect.com/science/article/abs/pii/S0921452609010680> |
| Effect of ball milling time on the electrical and piezoelectric properties of barium titanate ceramics | **A.K. Nath**, Chongtham Jiten, K. Chandramani Singh, Radhapiyari Laishram, O. P.Thakur, D. K. Bhattacharya | Integrated Ferroelectrics | 2010 | ISSN No.: 1058-4587 (print)  1607-8489 (online) | <https://www.tandfonline.com/doi/abs/10.1080/10584587.2010.488572> |
| Electrical and piezoelectric properties of lead-free (K0.5Na0.5)(Nb0.9Ta0.1)O3 ceramics prepared from nanopowders | Chongtham Jiten, **A.K. Nath**, K. Chandramani Singh, Radhapiyari Laishram, O.P. Thakur, D.K. Bhattacharya | Integrated Ferroelectrics | 2010 | ISSN No.: 1058-4587 (print)  1607-8489 (online) | <https://www.tandfonline.com/doi/abs/10.1080/10584587.2010.489460> |
| Ionic conduction and phase separation studies in P(VdF-HFP) )-LiClO4-dedoped polyaniline nanofiber composite polymer electrolytes - II: Effect of incorporation of PC and DEC | **A. K. Nath**, M. Deka and A. Kumar | Indian Journal of Physics | 2010 | ISSN No.: 0973-1458 (print)  0974-9854 (online) | <https://link.springer.com/article/10.1007/s12648-010-0119-7> |
| Ionic conduction and phase separation studies in PEO-P(VdF-HFP)-LiClO4-dedoped  polyaniline nanofiber composite polymer electrolytes – I | M. Deka, **A.K. Nath** and A. Kumar | Indian Journal of Physics | 2010 | ISSN No.: 0973-1458 (print)  0974-9854 (online) | <https://link.springer.com/article/10.1007/s12648-010-0118-8> |
| Effect of dedoped (insulating) polyaniline nanofibers on the ionic transport and interfacial stability of poly(vinylidene fluoride-hexafluoropropylene) based composite polymer electrolyte membranes | M. Deka, **A.K. Nath**, A. Kumar | Journal of Membrane Science | 2009 | ISSN No.: 0376-7388 | <https://www.sciencedirect.com/science/article/pii/S037673880800985X> |
| Discriminant feature level fusion based learning for automatic staging of EEG signals | Anil Hazarika, A Sarmah, R. Borah, M. Boro, L.Dutta, P. Kalita, and B. K. Dev Choudhury | Computer Science | Healthcare Technology Letters | 2018 | 2053-3713 | <https://digital-library.theiet.org/content/journals/10.1049/htl.2018.5024> |
| Inherent multi-view feature fusion using canonical correlation for classification of Electroencephalogram (EEG) signals | A Sarmah, S Kalita, BKD Choudhury | International Journal of Applied Engineering Research | 2018 | ISSN 0973-4562. Online ISSN 0973-9769 | <https://www.semanticscholar.org/paper/Inherent-multiview-feature-fusion-using-canonical-(-Sarmah/fdfcb8d3b556502c79792eb4719b928c929717ae> |
| Discriminant Correlation-Based Information Fusion for Real-Time Biomedical Signal Clustering | A Hazarika, A Sarmah, M Boro, P Kalita, BKD Choudhury | Advances in Communication, Devices and Networking | 2018 | 978-981-10-7901-6 | <https://link.springer.com/chapter/10.1007/978-981-10-7901-6_51> |
| Human Identification using Ear as a Biometric - A Review | Rahul Lahkar, Dr. Khurshid Alam Borbora | Journal of Artificial Intelligence Research & Advances | 2019 | 2395-6720 | <http://computers.stmjournals.com/index.php?journal=JoAIRA&page=article&op=view&path%5B%5D=2021> |
| Chemically deposited nanocrystalline PbS: effect of substrates | N Choudhury | Physics | Indian Journal of Physics | 2016 | ISSN: 0973-1458 (Print); 0974-9845 (Online) | <https://link.springer.com/article/10.1007/s12648-015-0757-x> |
| Study of chemically synthesized SHI irradiated CdS nanostructured films | P.K. Mochahari, Ananta Rajbongshi, Nava Choudhury, F. Singh and K.C. Sarma | *Advanced Materials Letters* | 2015 | 0976-3961 | <https://www.vbripress.com/aml/articles/details/639> |
| Understanding the Dynamical Behaviour of Chaplygin Gas Cosmology | Julie Saikia | 33rd ICRC | 2013 |  | <https://galprop.stanford.edu/elibrary/icrc/2013/papers/icrc2013-0035.pdf> |
| Current status of the expanded GRAPES collaboration experiment at Ooty in India | Julie Saikia et al. | Proceedings of the 30th ICRC | 2008 |  | <http://inspirehep.net/record/1371557/files/access.pdf> |
| Studies on Lateral Distribution of Electrons in UHE Air Showers | J Saikia, P Datta, PM Kalita, KM Pathak | 23rd ICRC | 1993 |  | <http://adsabs.harvard.edu/full/1993ICRC....4..346S> |
| Generalized Second Law and Brane Cosmological Model with Phantom Dominated Bulk | Julie Saikia, Balendra Kr Dev Choudhury | 32nd ICRC | 2011 |  | <http://inspirehep.net/record/1352459> |
| Some Discussion on Thermodynamical Behaviour of Modified Chaplygin Gas | Balendra Kr. Dev Choudhury, Julie Saikia | arXiv preprint arXiv:1006.1461 | 2010 |  | <https://arxiv.org/abs/1006.1461> |
| Dark Energy and Search for the Generalized Second Law | Balendra Kr. Dev Choudhury, Julie Saikia | arXiv preprint arXiv:0906.0644 | 2009 |  | <https://arxiv.org/abs/0906.0644> |
| On primary mass composition of giant air showers | Julie Saikia and Pranayee Datta | 29thICRC | 2005 |  | <http://cds.cern.ch/record/965312/files/17163-ind-saikia-J-abs1-he14-oral.pdf> |
| On Some Aspects of Age Parameter Associated with Extensive Air Showers Having Energy Ranging from~ 1014eV to~ 1020eV | Julie Saikia, Pranayee Datta | 28thICRC | 2003 |  | <http://adsabs.harvard.edu/full/2003icrc....1..325s> |
| Characteristics of Age Parameter for Giant Air Showers | Julie Saikia | 26th ICRC | 1999 |  | <http://adsabs.harvard.edu/full/1999ICRC....1..395S> |
| Dynamical Interpretation of Viscous Term of Chaplygin Gas Cosmology | Balendra Kumar Dev Choudhury | 33rd ICRC | 2013 |  | <https://galprop.stanford.edu/elibrary/icrc/2013/papers/icrc2013-0038.pdf> |
| Generalised Second Law and Brane cosmological Model with Phantom Dominated Bulk | Balendra Kumar Dev Choudhury | 32nd ICRC | 2011 |  | <http://inspirehep.net/record/1352459/citations> |
| Studies On Curvature Tensor and Geodesic Deviation Equation | Balendra Kr. Dev Choudhury, B.C. Kalita | 30th ICRC | 2007 |  | <http://inspirehep.net/record/1371403/> |
| Hénon-Heiles Type Hamiltonian in Cosmological Perspective | Balendra Kr. Dev Choudhury, B.C. Kalita | 28th ICRC | 2003 |  | <https://ui.adsabs.harvard.edu/abs/2003ICRC....3.1717C/abstract> |
| Investigation on the Thermo dynamical properties of some natural silk fibres with various physical methods | M.N. Bora, G.C. Baruah, C.L. Talukdar | Thermochimica Acta | 1993 | ISSN: 0040-6031 | <https://www.sciencedirect.com/science/article/abs/pii/004060319380441C> |
| Studies on the dielectric properties of some natural (plant) and synthetic fibres in audio frequency range and their DC conductivity at elevated temperature | M.N. Bora, G.C. Baruah, C.L. Talukdar | Thermochimica Acta | 1993 | ISSN: 0040-6031 | <https://www.sciencedirect.com/science/article/abs/pii/004060319380442D> |
| Effect of swift heavy ion irradiation on lead sulfide quantum dots embedded in polyvinyl alcohol | N. Choudhury et al. | Radiation Effects and Defects in Solids | 2013 | Print ISSN: 1042-0150 Online ISSN: 1029-4953 | <https://www.tandfonline.com/doi/abs/10.1080/10420150.2012.761995> |
| Biomedical Application of Nanoparticles for Channel Protein Modulation to Control Neural Disorder with Special Reference to Seizure | Pankaj Kalita  Manash Barthakur | Biophysics and Zoology | [Application of Biomedical Engineering in Neuroscience](https://link.springer.com/book/10.1007/978-981-13-7142-4) | 2019 | ISBN 9789811371417 | <https://link.springer.com/chapter/10.1007/978-981-13-7142-4_17> |
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| Rapid screening of Mycobacterium tuberculosis complex (MTBC) in clinical samples by a modular portable biosensor | Briliant Adhi Prabowo, Ying-Feng Chang, Hsin-Chih Lai, Azharul Alom, Parthasarathi Pal, Yu-Ying Lee, Nan-Fu Chiu, Koji Hatanaka, Li-Chen Su, Kou-Chen Liu | Sensors and Actuator B:Chemical Journal | 2018 | ISSN: 0925-4005 | <https://www.sciencedirect.com/science/article/pii/S0925400517313102> |
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| Impact of Gold Nanoparticles on Electrophysiology and Intracellular Calcium in Cultured Neuron, | Manash Barthakur | Zoology | Research Journal of Life Sciences, Bioinformatics, Pharmaceutical and Chemical Sciences | 2018 | 2454-6348 | <http://www.rjlbpcs.com/article-pdf-downloads/2018/19/236.pdf> |
| A Study on Emotional Intelligence in Relation to General Intelligence and Spiritual Intelligence | Alaka Das | Education | Indian Journal of Applied Research | 2016 | ISSN No. 2249-555X | <https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/fileview/August_2016_1470034335__91.pdf> |
| A Study Of Environmental Awareness, Environmental Attitude And Ecological Behaviour Of The B. Ed Students | Alaka Das | Indian Journal of Applied Research | 2016 | ISSN No. 2249-555X | <https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/fileview/November_2016_1492175460__224.pdf> |
| Attitude Of The B. Ed Students Towards Micro –Teaching- A Study | Alaka Das | Indian Journal of Applied Research | 2017 | ISSN No. 2249-555X | <https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/fileview/November_2017_1509516188__127.pdf> |
| A Study Of The Relationship Between Emotional Intelligence And Teacher Effectiveness Of Teacher Educators | Alaka Das | Global Journal Of Research Analysis | 2016 | ISSN No. 2277-8160 | <https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/fileview/November_2017_1509787032__77.pdf> |
| Challenges In Implementation Of Iedss And Role Of Rmsa: A Study With Special Reference To Kamrup (R) District | Alaka Das | Global Journal Of Research Analysis | 2018 | ISSN No. 2277-8160 | <https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/fileview/July_2018_1531402843__71.pdf> |
| Metacognition and Learning: An Overview | Alaka Das | Global Journal Of Research Analysis | 2016 | ISSN No. 2277-8160 | <https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/fileview/August_2016_1470490298__26.pdf> |
| A study of attitudes of undergraduate students towards mobile phones usage in learning | Dr. Babita Das | Education | Proceedings of national seminar on Innovative Practices in Teaching Learning and Evaluation in Higher Education | 2017 | ISBN: 798-81-93152-50-6 | --- |
| Social Science Research and Higher Education: An overview of the Draft National National Education Policy, 2016 | Hemashri Devi | Political Science | Proceedings of national seminar on Innovative Practices in Teaching Learning and Evaluation in Higher Education | 2017 | ISBN: 798-81-93152-50-6 | --- |
| Mathematics a first step towards education | Mrs. Rina Deka and Dr. Kalpana Misra | Mathematics | Proceedings of national seminar on Innovative Practices in Teaching Learning and Evaluation in Higher Education | 2017 | ISBN: 798-81-93152-50-6 | --- |
| Causes of student absenteeism at undergraduate level: A study | Mr. Nripendra Deka | History | Proceedings of national seminar on Innovative Practices in Teaching Learning and Evaluation in Higher Education | 2017 | ISBN: 798-81-93152-50-6 |  |
| A study of self efficacy in relation to Meta Cognitive Ability and Self Regulated Learning of undergraduate students | Dr. Alaka Das | Education | Proceedings of national seminar on Innovative Practices in Teaching Learning and Evaluation in Higher Education | 2017 | ISBN: 798-81-93152-50-6 |  |
| Ussa shikhayar khetrat ‘Axomiya’ bixoyor pathyakrom: Eti samikhatymak alochana | Dr. Nayanmoni Baruiah | Assamese | Proceedings of national seminar on Innovative Practices in Teaching Learning and Evaluation in Higher Education | 2017 | ISBN: 798-81-93152-50-6 |  |

**6. Seminars/Workshops/Conferences attended by faculty members**

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| **INTERNATIONAL IN ABROAD** | | | | | |
| **Sl. No.** | **Name of the participant** | **Seminar/ workshop/conference** | **Organizer** | **Activity performed** | **Year** |
| 1. | Dr B K Dev Choudhury, Principal | 28th International Cosmic Ray Conference (ICRC) | IUPAP, Tsukuba, Japan | Paper presented | 2003 |
| 30th ICRC | IUPAP, Merida, Mexico | Paper presented | 2007 |
| 31st ICRC | IUPAP, Lodz, Poland | Paper presented | 2009 |
| 32nd ICRC | IUPAP, Beijing, China | Paper presented | 2011 |
| 33rd ICRC | IUPAP, Rio de Janeiro, Brazil | Paper presented | 2013 |
| 2. | Dr Chitralekha Talukdar, Associate Professor, Department of Physics | 8th Asian Thermo physical Properties Conference | Kyushu Univ. Fukuoka, Japan | Paper presented | 2007 |
| 3. | Dr Julie Saikia  Associate Professor, Department of Physics | 23rd ICRC | IUPAP, Calgary, Canada | Paper presented | 1993 |
| 24th ICRC | IUPAP, Rome, Italy | Paper presented | 1995 |
| 28th ICRC | IUPAP, Tsukuba, Japan | Paper presented | 2003 |
| 30th ICRC | IUPAP, Merida, Mexico | Paper presented | 2007 |
| 31st ICRC | IUPAP, Lodz, Poland | Paper presented | 2009 |
| 32nd ICRC | IUPAP, Beijing, China | Paper presented | 2011 |
| 33rd ICRC | IUPAP, Rio de Janeiro, Brazil | Paper presented | 2011 |
| 4. | Dr. Nripendra Nath Talukdar |  | China | Paper presented |  |
| 5. | Dr. Navajyoti Choudhury | 4th HYMA | Spain | Paper presented | 2015 |
| **INTERNATIONAL WITHIN THE COUNTRY** | | | | | |
| **Sl. No.** | **Name of the participant** | **Seminar/ workshop/conference** | **Organizer** | **Activity performed** | **Year** |
| 1. | Aditya Ch Deka  Associate Professor  Department of Geography | International Seminar on Land use, Biodiversity and Climate Change” | Dept of Geography, Cotton college. | Paper represented | 2010 |
| 2. | Dr B K Dev Choudhury, Principal | 29th ICRC | IUPAP, Pune, India | Paper presented | 2005 |
| 3. | Dr Chitralekha Talukdar, Associate Professor, Department of Physics | 6th Asian Thermo physical Properties Conference | Gauhati University | Paper presented | 2001 |
| 4. | Dr Julie Saikia  Associate Professor, Department of Physics | ICNAP | IIA, Bangaluru | Paper presented | 1994 |
| 29th ICRC | IUPAP, Pune, India | Paper presented | 2005 |
| 5. | Dr Navajyoti Choudhury  Associate Professor  Department of Physics | International Conference | (IUAC), New Delhi | Paper presented | 2012 |
| ICANN | IIT G, | Paper presented | 2011 |
| ICFANT | Jadavpur University, Kolkata-700032 | Paper presented | 2010 |
| SHIMEC | IUAC, New Delhi | Paper presented | 2010 |
| 6. | Dr. Khagesh SenDeka Associate Professor, Department of Assamese | International seminar on Genres of Belief from Folkristic Perspective | USTM in collaboration with University of Tartu | Presented | 2013 |
| 7. | Montu Saikia, Assistant Professor, Department of English | International Seminar on “Genres of Belief From Folkloristic Perspective” | USTM | -do- | 2013 |
| 8. | Dr Dipak Konwar,  Assistant Professor, Department of Botany | International Conference on Harnessing Natural Resources for Sustainable Development: Global Trend | Cotton College State University | -do- | 29-31 January, 2013 |
| 9. | Atwar Rahman, Associate Professor, Department of Statistics | International conference- Recent Trends in probability and statistics: Theory and Application | Gauhati University | -do- | 2012 |
| 10. | Md. Ayez Ali, Assistant Professor, Department of Geography | International seminar on Land use, Biodiversity and Climate Change | Dept of Geography, Cotton college | -do- | /2010 |
| 11. | Dipen Bezbaruah, Assistant Professor, Department of English | International  Seminar on Genres of Belief from a Folkloristic Perspective | USTM, Meghalaya | -do- | 2013 |
| International seminar on Tradition Identity and Diversity: the Future of Indigenous Culture in a Globalised World |  | -do- | 2011 |
| International workshop on Teaching English Language Skills | Sonapur College | -do- | 2011 |
| 12. | Dr Kalpana Misra  Assistant Professor  Department of Mathematics | International Conference on “Recent Advances in Mathematical Statistics and its Application in Applied Sciences” | Gauhati University, | -do- | 2012 |
| 13. | Nayanmoni Baruah, Assistant Professor, Department of Assamese | International seminar on:  Supernatural Elements in the Folk-tales of Assam with special reference to *Lakshminath Bezbarooah’s Burhi Aair Sadhu* | University of Science and Technology, Meghalaya, India | -do- | 2013 |
| 14. | Dr. Paresh Ch. Kalita, Associate Professor, Department of Botany | International conference on harnessing national resources for sustainable development: Global trends | Cotton College, Guwahati. | -do- | 2014 |

**7. Research Publications of students:**

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| **Title of paper** | **Name of the**  **author/s** | **Name of**  **journal** | **Year of publication** | **ISBN/ISSN number** |
| Evaluation of nutritional composition, nutraceutical property and antioxidant activity of peel extract of two species of Cucurbitaceae family | Chintu Mani Saikia, Dipak Konwar, Pankaj Kalita | Proceeding of UGC sponsored national seminar on “Food and Bioprocess Research for Industrial Application” | 2017 | ----- |
| Evaluation of nutritional composition, nutraceutical property and antioxidant activity of peel extract of two species of Cucurbitaceae family | Himashri Deka, Kamal Sarma, Pankaj Kalita; | Proceeding of UGC sponsored national seminar on “Food and Bioprocess Research for Industrial Application” | 2017 | ----- |
| Changes of Ascorbic Acid Content in Selected fruit under different storage temperature with varied length of time | Chayanika Devi, Pankaj Kalita and Manash Barthakur | Proceedings of national seminar on Molecular Biology and Biotechnology Research in North East India | 2015 | ISBN: 978-81-93152-50-8; pp: 148-154 |
| Effects of transfluthrin in olfactory memory of swiss albino mice using Buried Food Test | Nipu Kumar Das, Hirakjyoti Kakati, Pankaj Kalita and Manash Barthakur | Proceedings of national seminar on Molecular Biology and Biotechnology Research in North East India | 2015 | ISBN: 978-81-93152-50-8; pp: 238-244 |
| Conjugation of L – glutamic acid and gold nanoparticles, | Parangam Goswami, Chetan Kashyap, Dipjyoti Baishya, A. R. Atique Ulla, Pankaj Kalita, Manash Barthakur and Navajyoti Choudhury | Proceedings of national seminar on Molecular Biology and Biotechnology Research in North East India, 2015 | 2015 | ISBN: 978-81-93152-50-8; pp: 254-261 |
| Ethnobotanical Studies in Traditional Knowledge System of Alcoholic Beverage Production by Three Different Tribal Groups of Assam, India; Livelihood promotion through non-timber forest products in India with special reference to North East India | Pankaj Kalita, Lipika Lahkar, Chintu Mani Saikia and Dipak Konwar | Proceedings of national seminar on Molecular Biology and Biotechnology Research in North East India, 2015 | 2014 | ISBN: 978-81-925433-7-6; pp: 111-119. |
| To investigate the photosynthesis of a water plant on fresh and polluted water with the help of electrical conductivity | Partha Jyoti Kalita, Dipjyoti Sarma, Pranab Choudhury, Julie Saikia and B. Kr. Dev Choudhury; | Proceedings of national seminar on Molecular Biology and Biotechnology Research in North East India | 2015 | ISBN: 978-81-93152-50-8; pp: 214-225 |
| Analogy between the process of emission of electrons in photosynthesis and photoelectric effect – a Physics point of view | P. Sarmah, D. Sarma, P. Goswami, J. Saikia, B.K. Dev Choudhury | Proceeding of Emrging Science and Technologies: Impact on Environment and Human Health | 2014 | ----- |

**8. Alumni involved in research activities outside India:**

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| **Name of alumni** | **Institute Name** | **Purpose** | **Present Status** |
| Dr. Biraj Kakati | Imperial College, London | Post-Doctoral Research | Assistant Professor,  Department of Energy  Tezpur University |
| Mr. Kamal Dutta | KEK, Tsukuba University, Japan | Collaborative research | Forensic Laboratory, Govt. of Assam |
| Dr. Bipul Deka | Kumoh National Institute of Technology, South Korea | Post-Doctoral Research | Continuing |