



Prof. Dr. Pijus Kanti Khatua

Principal, Bhatler College, Dantan, Paschim Medinipur, West Bengal, India.

Email: [principal@bhatlercollege.ac.in](mailto:principal@bhatlercollege.ac.in)



**TEACHING EXPERIENCE**

| SL. | Position held       | Institution                    | From(date) | To(date)   |
|-----|---------------------|--------------------------------|------------|------------|
| 1.  | Lecturer            | Haldia Institute of Technology | 09.08.2010 | 31.08.2010 |
| 2.  | Assistant Professor | Haldia Institute of Technology | 01.09.2010 | 03.03.2016 |
| 3.  | Associate Professor | Haldia Institute of Technology | 04.03.2016 | 31.03.2019 |
| 4.  | Professor           | Haldia Institute of Technology | 01.04.2019 | 10.05.2023 |
| 5.  | Principal           | Bhatter College, Dantan        | 11.05.2023 | Till date  |

**PUBLICATIONS****BOOKS/ BOOK CHAPTERS**

| SL. No. | Title  | Soul Authorship/edited   | Publishers  | Year | ISSN/ISBN                             |
|---------|--|--|---|------|---------------------------------------|
| 1.      | <i>Practical Book on Engineering Chemistry</i><br>Page: 137  | Textbook<br>Author Main Author<br>2016                             | Platinum Publishers,<br>Kolkata.<br>International | 2016 | ISBN: 978-81-89874-43-8               |
| 2.      | Eco-friendly formaldehyde-free wood adhesive for interior plywood manufacturing<br>Page 5                                    | NSAFMTSI-2015<br>Corresponding Author                              | NSAFMTSI-2015,                                    | 2015 | ISBN: 978-93-5196-458-2, 58-63        |
| 3.      | Utilization of bio-based phenol-animal glue formaldehyde resin adhesive for the manufacture exterior-grade plywood<br>Page 9 | NSAFMTSI-2015<br>Main Author                                       | NSAFMTSI-2015,                                    | 2015 | ISBN: 978-93-5196-458-2, 49-57,       |
| 4.      | Cognition, Risk, and Ethics of Nanoscience and Nanotechnology<br>Page 5  | NSNN-2015, Fourth author   |   | 2015 | ISBN: 978-93-5254-967-2, 87- 91       |
| 5.      | Jute-bamboo composites as an alternative building material for seismic and cyclone prone zone (coastal)                      | Environment Friendly<br>Biodegradable Polymers: Present and Future | Mallick Book<br>Center Publishers                 | 2016 | ISBN, 978-81-926694-0-3, Page 178-189 |

|           |   |  |  |      |                                       |
|-----------|---|--|--|------|---------------------------------------|
|           | Page: 18  | Editors: Dr. Bidhan Chandra Samanta, Dr. Tithi Maity<br>Book chapter<br>March 2016<br>Main Author  |  |      |                                       |
| <b>6.</b> | Fire retardant properties of plywood incorporating silicate, phosphate and boron compounds as additives in PF resin<br>Page 11  | NSAFMTSI-2015<br>Main Author   | NSAFMTSI-2015,                             | 2015 | ISBN: 978-93-5196-458-2, 52-562,      |
| <b>6.</b> | Bioplastic: the Green Technology; and concern on biodegradability<br>Page 23  | Environment-Friendly Biodegradable Polymers: Present and Future<br>Editors: Dr. Bidhan Chandra Samanta, Dr. Tithi Maity<br>Book chapter<br>March 2016<br>Second Author | Mallick Book Center Publishers             | 2016 | ISBN, 978-81-926694-0-3, Page 200-222 |
| <b>7.</b> | Development and studies of adhesive properties of formalin-free maize Gluten-based adhesives with different copolymers for the development of jute composite<br>Page 21 | Green Engineering and Sustainable Development:<br>Editors: Dr. Bidhan Chandra Samanta, Dr. Tithi Maity<br>Book chapter Main Author<br>March 2016                       | Narosa Publishing House,<br>Page: 4.1-4.20 | 2016 | ISBN 978-81-8487-715-1,               |

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|------------|--|---|--|------|--|
|            |  |   |  |      |  |
| <b>8.</b>  | Imidazolium Ag-NHC Complexes as Antimicrobials and Antifungals – a mini review.  | RDBAM-2016, Co-Author                                 |  | 2016 | ISBN: 978-93-5267-195-3, 49<br>55-57                           |
| <b>9.</b>  | An introduction to composite material<br>Page 16   | Book chapter<br>December 2020<br>Corresponding Author | Edu. Chem. Sci.<br>Tech.,                  | 2020 | ISBN: 978-81-954339-0-2, 67-68<br>Vol. 7-8, Page 31-46         |
| <b>10.</b> | Bioactive material; A bridge to solve fascinating problems of science by recent quantum phenomenon                             | Book chapter<br>Co-Author                             |  |      | ISBN: 978-93-5267-195-3, 118-125                               |
| <b>11.</b> | Current status o organic solar cell Fundamentals- materials, fabrication Techniques and photovoltaic performances: An overview | Book chapter<br>2015 Co-Author                        | 2015                                       | 2015 | NSAFMTSI-2015<br>ISBN: 978-93-5196-458-2, 67-68<br>Page 87- 91 |
| <b>12.</b> | Utilization of bio-based Phenol-animal glue-formaldehyde resin adhesive for manufacturing exterior grade wood particle board   | RDGC2015<br>Book chapter<br>2015<br>Main Author       | Recent development in green chemistry-2015 | 2015 | ISBN: 978-93-5235-543-3, 67-68<br>Page 115- 121                |

|            |   |  |  |      |   |
|------------|---|--|--|------|---|
| <b>13.</b> | Preparation of exterior grade corrugated sheet from bio-active silane graft bamboo mat and polyester resin                                      | RDBAM-2016, Main Author                        |  | 2016 | ISBN: 978-93-5267-195-3, 49<br>55-57              |
| <b>14.</b> | Enhancement of Fire retardant properties of plywood by incorporating nano additives (silicates, phosphate, and boron) compounds as in MUF Resin | NSNN-2015, Corresponding Author                |  | 2015 | ISBN: 978-93-5254-967-2, 97- 112-16               |
| <b>15.</b> | Development of eco-composite board from jute and nano-based Polyester-Euphorbia Latex   | Proceedings of NSNN-2015, Corresponding Author |  | 2015 | ISBN: 978-93-5254-967-2, 67- 71                   |
| <b>16.</b> | Development of bio-based and exterior grade phenol-animal glue formaldehyde.  | NSAFMTSI-2015<br>Main Author                   |  | 2015 | NSAFMTSI-2015,<br>ISBN: 978-93-5196-458-2, 59-62, |

**RESEARCH ARTICLES**

| Sl. No. | Title   | National/ International | Corresponding Author (Yes/No) | Journal, Vol. with page number, Year          | Year | Publisher      | Whether peer-reviewed and/or UGC listed, Impact Factor Citation(s) |
|---------|---|-------------------------|-------------------------------|---|------|----------------|--|
| 1.      | Effect of Solvent on the Spectroscopic Behavior of the Dye Safranin T   | International           | Main author                   | J. Oleo Sci.52, 7, 2003, 387-391              | 2003 | ISSN:1347 3352 | peer review<br>I.F.: 1.601<br>Citation: 6                          |
| 2.      | Characterisation of binary surfactant mixtures (Cetylepyridinium Chloride and Tween 60) in an aqueous medium. | International           | Main author                   | J. Dispersion Sci. Tech. 25, 6, 2004, 741-748 | 2004 | ISSN:1532 2351 | peer review<br>I.F.: 2.02<br>Citation: 41                          |
| 3.      | Triplet State Interaction of Safranin T with Inorganic Cations in Different Solvents                          | International           | Main author                   | J. Mol. Structure, 757, 2005, 43-48.          | 2005 | ISSN:222 860   | peer review<br>I.F.: 3.196<br>Citation: 2                          |

|    |   |               |             |   |      |                |  |
|----|---|---------------|-------------|---|------|----------------|--|
| 4  | Aggregation of Nonionic Surfactant Igepal in aqueous Medium: Fluorescence and Light Scattering Studies"   | International | Co-author   | Int. J. Mol. Sci. 4, 2003, 562-571              | 2003 | ISSN:1422 0067 | peer review<br>I.F.: 5.542<br>Citation: 43   |
| 5. | Characterization of polyoxyethylene nonyl phenol (Igepal) and its complexation with 3, 7- diamino - 2, 8 - dimethyl - 5 - phenyl phenazinium chloride | International | Co-author   | . J. Colloid Interface Sci. 275, 2004, 623-631  | 2004 | ISSN:0021 9797 | peer review<br>I.F.: 8.128<br>Citation: 23   |
| 6. | Physicochemical characteristics of reverse micelle of Igepal in different organic solvents  | International | Co-author   | J. Colloid Interface Sci. 279, 2, 2004, 523-532 | 2004 | ISSN:0021 9797 | Peer reviewed<br>I.F.: 8.128<br>Citation: 36 |
| 7. | Partitioning of Quencher Ions in the Micellar Microenvironment of Polyoxyethylene Nonyl Phenol  | International | Co-author   | Spectrochimica Acta A. 61, 2005, 395-401        | 2005 | ISSN:1386 1425 | Peer reviewed<br>I.F.: 4.098<br>Citation: 12 |
| 8. | Quenching of fluorescence of safranin t by halides and pseudohalides in mixed micellar media  | International | Main author | . J. Mol. Liq. 124,1-3, 2005,45-50              | 2005 | ISSN:0167 7322 | Peer reviewed<br>I.F.: 6.165<br>Citation: 10 |
| 9. | Effect of solvent on the  | International | Main author | . J.  | 2006 | ISSN:0022 2313 | Peer reviewed                                |



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|------------|--|---------------|-------------------------------|---|------|------------------|---|
|            | quenching of fluorescence of safranine T in binary solvent mixtures"   |               |                               | Luminescence<br>Volume 121, 2,<br>2006, 488-496.  |      |                  | I.F.: 3.599<br>Citation: 9                  |
| <b>10.</b> | Jute Composite Using Euphorbia Latex-A Natural binder  | International | Co-author                     | Textile Asia (HongKong) XXXVIX-0203, 2008, Pages 55-57  | 2006 | ISSN:1532 2351   | Peer reviewed<br>I.F.: 0.104<br>Citation: 2 |
| <b>11.</b> | Utilization of Non-oven Jute felt - A natural Fiber as a Substitution of Wood Veneer for Manufacture of Plywood" | International | Co-author                     | International Journal of Recent Technology and Engineering Volume-1, Issue-1, April 2012, Pages 15-21 | 2008 | ISSN: 2277-3878, | Peer reviewed<br>I.F.: 1.27<br>Citation: 2  |
| <b>12.</b> | Modified flush door shutter using jute composite - A natural substitute of wood                                  | International | Main and corresponding author | International Journal of Soft Computing and Engineering (IJSCE), Volume-1, Pages 9-14, July 2011,     | 2011 | ISSN: 2231-2307  | Peer reviewed<br>I.F.: 0.675<br>Citation: 4 |

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|------------|---|---------------|-------------------------------|--|------|--------------------------------------|---|
|            |   |               |                               |  |      |                                      |   |
| <b>13.</b> | Eco-composite flush door shutter using bamboo-jute fiber  | International | Main and corresponding author | International Journal of Innovative Technology and Exploring Engineering Volume-2, Issue-4, March 2013 | 2013 | ISSN: 2278-3075,                     | Peer reviewed<br>I.F.: 0.546<br>Citation: 6 |
| <b>14.</b> | Prospect of virtual reality in teacher education  | International | Corresponding author          | The light of education   | 2013 | ISSN: 2277-4556, Issue-2,14-19, 2014 | NA  |
| <b>15.</b> | Compatibility of nanobiocide as wood preservative with thermosetting resin used as adhesive for plywood manufacturing"    | International | Corresponding author          | International Journal of Composite Materials & Matrices<br>Vol. 1: Issue 1; 1-6, 2015                  | 2015 | ISSN: 2582-435X                      | peer review<br>I.F.: NA<br>Citation:        |
| <b>16.</b> | Green adhesive - Using glyoxalated lignin and Hydrogenated rosin as ecologically safe wood adhesive for interior plywood" | International | Corresponding author          | International Journal of Polymer Science & Engineering, Vol. 1: Issue 1;                               | 2015 | ISSN: 2455-8745,                     | peer review<br>I.F.: NA<br>Citation: 1      |

|            |  |               |                               |   |      |                  |  |
|------------|--|---------------|-------------------------------|---|------|------------------|--|
|            |  |               |                               | 23-27 2015  |      |                  |  |
| <b>17.</b> | Substitution of wood by polymer composites with jute fiber-A case study  | International | Corresponding author          | International Journal of Polymer Science & Engineering Vol. 1: Issue 1; 1-7, 2015   |      | ISSN: 2455-8745, | peer review<br>I.F.: NA<br>Citation:   |
| <b>18.</b> | Environment-friendly, exterior-grade resin adhesive from phenol-animal glue-formaldehyde (PGF)                       | International | Corresponding author          | International Journal of Polymer Science & Engineering Vol. 1: Issue 1; 16-22, 2015 | 2015 | ISSN: 2455-8745, | peer review<br>I.F.: NA<br>Citation:1  |
| <b>19.</b> | Manufacturing of BWP grade plywood from resin adhesive using animal protein (glue) by partial replacement of phenol" | International | Main and corresponding author | International Journal of Polymer Science & Engineering Vol. 1: Issue 1; 28-35, 2015 | 2015 | ISSN: 2455-8745, | peer review<br>I.F.: NA<br>Citation:   |
| <b>20.</b> | Enhancement of fire retardancy properties of Plywood by incorporating Silicate, Phosphate, and Boron                 | International | Corresponding author          | International Journal of Composite Materials & Matrices Vol. 1:                     | 2015 | ISSN: 2582-435X  | peer review<br>I.F.: NA<br>Citation: 1 |

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|------------|--|---------------|-------------------------------|--|------|------------------|--|
|            | compounds as additives in PMUF Resin   |               |                               | Issue 1; 11-15, 2015   |      |                  |  |
| <b>21.</b> | Evaluation of mechanical properties of plywood treated with a new wood preservative (CEB) chemical. Aparna Kalawate, Shadhu Charan Shahoo and Pijus Kanti Khatua*, Himadri Sekhar Das, | International | Corresponding author          | Journal of The Institution of Engineers (India): Series D (Springer) DOI:10.1007/s40033-015-0108-2.        | 2015 | ISSN: 2250-2122  | peer review<br>I.F.: 1.42<br>Citation: 2 |
| <b>22.</b> | Development of self-fire retardant MGF (melamine-animal glue formaldehyde) resin for the manufacture of BWR plyboard   | International | Main and corresponding author | Journal of The Institution of Engineers (India): Series D Springer DOI 10.1007/s40033-016-0120-1 May 2016, | 2016 | ISSN 2250-2122,  | peer review<br>I.F.: 1.42<br>Citation:2  |
| <b>23.</b> | Approach of Organocatalysis Techniques towards "Green Chemistry"   | International | Co-author                     | International Journal of Innovative Practice and Applied Research (IJIPAR) 2016, 131-142                   | 2016 | ISSN-2349- 8978, | peer review<br>I.F.: NA<br>Citation:2    |

|            |  |               |                               |  |      |                         |   |
|------------|--|---------------|-------------------------------|--|------|-------------------------|---|
| <b>24.</b> | Effects of surface treatments of glass fiber on the mechanical properties of composites made from epoxy resin reinforced with wooden veneer-glass hybrid | International | Corresponding author          | J. Indian Chem. Soc., Vol. 94, April 2017, pp. 1-7                         | 2017 | ISSN-0019- 4522         | peer review<br>I.F.: 0.45<br>Citation:    |
| <b>25.</b> | JUTE-REINFORCED BIO-COMPOSITE USING EUPHORBIA LATEX AS ADHESIVE  | International | Main and corresponding author | International Journal of HIT Transaction Vol.2: Issue 2A (2016) Page 85-89 | 2016 | ISSN: 0973-6875         | Peer review<br>I.F.: NA<br>Citation:2     |
| <b>26.</b> | Status of Open and Distance Mode of Teacher Education in India   | International | Co-author                     | International multidisciplinary e journal Vol-6, Issue-8, Aug-2017, 1-9    | 2017 | ISSN: 2277-4262,        | peer review<br>I.F.: 0.451<br>Citation: 6 |
| <b>27.</b> | Jute Fiber Graft Copolymers Euphorbia Latex Composites: Physico-Mechanical Studies   | International | Main and corresponding author | International Journal of HIT Transaction Issue 1A (2017) Page 110-121.     | 2017 | ISSN: 0973-6875, Vol.3: | peer review<br>I.F.: NA<br>Citation:1     |
| <b>28.</b> | A Comparative Study on Women Participation in Indian Parliamentary Election: Voter and Contestant,   | International | Co-author                     | International Journal of HIT Transaction Vol.3: Issue 1A                   | 2017 | ISSN: 0973-6875,        | peer review<br>I.F.: NA<br>Citation:      |

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|------------|---|---------------|-------------------------------|--|------|---|---|
|            |   |               |                               | (2017) Page 122-127.   |      |   |   |
| <b>29.</b> | Analysis of CMC of polyoxyethylene(20) sorbitan monopalmitate (Tween-40) and cetyltrimethylammoniumbromide (CTAB) in aqueous medium,      | International | Main and corresponding author | J. Indian Chem. Soc., Vol. 95, January 2018, pp. 1-9   | 2018 | ISSN-0019- 4522                                 | peer review<br>I.F.: 0.45<br>Citation:  |
| <b>30</b>  | Application of fuzzy inference techniques in the production of eco-friendly aminoplast based modified resins for plywood panel industries | International | Co-author                     | International Journal of Fuzzy Computation and Modelling, 2018,  | 2018 | ISSN online: 2052-3548<br>ISSN print: 2052-353X | peer review<br>I.F.: NA<br>Citation:2   |
| <b>31.</b> | An overview of interaction of solvents with different dyes through photophysical studies  | International | Main and corresponding author | International Journal of Research In Science & Engineering, CHEMCON Special Issue : March 2018,PP[47-57]<br>e- | 2018 | ISSN: 2394-8299,<br>p-ISSN: 2394-8280           | peer review<br>I.F.: 4.2<br>Citation: 6 |

|     |   |               |                      |   |      |                  |   |
|-----|---|---------------|----------------------|---|------|------------------|---|
| 32. | Effect of Biofertilizer on Garlic ( <i>Allium sativum</i> ) cultivation   | International | Co-author            | International Journal of HIT Transaction<br>Vol.4: Issue 2A<br>(2018) Page 1-14.  | 2018 | ISSN: 0973-6875, | peer review<br>I.F.: NA<br>Citation:      |
| 33. | Photophysical studies of the dye 1-Anilinonaphthalene-8-sulfonic acid in different solvents and its quantum chemical investigation                  | International | Corresponding author | Journal of Molecular Structure<br>1179 (2019) 462-468   | 2019 | ISSN:222 860     | peer review<br>I.F.: 3.196<br>Citation: 1 |
| 34. | Development of fire retardant eco-composite board from jute and bio-based Euphorbia latex polyvinyl alcohol (PVA) copolymer for structural purpose. | International | Corresponding author | J. Indian Chem. Soc. Vol. 97, No. 12a, December 2020, pp. 2679-2688   | 2020 | ISSN-0019- 4522  | peer review<br>I.F.: 0.45<br>Citation:    |
| 35. | An Expedient Approach Towards Statistical Analysis of Formalin Business Policy Using Design of Experiment in a Petro-complex Plant in India         | International | Co-author            | Research square,<br><a href="https://doi.org/10.21203/rs.3.rs-901581/v1">https://doi.org/10.21203/rs.3.rs-901581/v1</a> |      | ISSN-2693- 5015  | peer review<br>I.F.: 0.45<br>Citation:    |

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|-----|---|----------------|-----------------------------------|--|------|---|--------------------------------------|
| 36. | History of teacher education in India and a bang of ODM | Inter national | Main and correspondi<br>ng author | The Light of Education: A biannual referred journal of education | 2014 | ISSN-2277- 4556, Vol. 3, Issue 1&2 March September 2014 | peer review<br>I.F.: NA<br>Citation: |
|-----|---|----------------|-----------------------------------|--|------|---|--------------------------------------|

## RESEARCH GUIDANCE

|             | Sl. No.            | Number Enrolled | Thesis Submitted | Degree awarded              |
|-------------|--------------------|-----------------|------------------|-----------------------------|
| <b>Ph.D</b> | Supervisor (Sole)  | T. B. Sinha     | Univ. of Mysore  | Awarded (01.11.19)          |
|             | Supervisor (Joint) | D. Singh        | Raigang Univ.    | (Coursework exam completed) |

## WHETHER AWARDS (NATIONAL / INTERNATIONAL)

- A) "Eco-composite flush door shutter using bamboo-jute fiber", In NSAFMTSI-2015
- B) "Modified flush door shutter using jute composite –A natural substitute of wood" In NSAFMTSI-2015
- C) Best Scientist award from Smile –Tamluk, Purba Medinipur



**NO. OF PATENTS (FILED / HELD)**

| Sl. No. | Patent particulars  | Approving Authority with date   | Period of Validity/ Status          | Type of Patent, Broad Area/ Field | National/ International |
|---------|---|---|-------------------------------------|-----------------------------------|-------------------------|
| 1.      | An additive for thermosetting resin<br>(Published)                            | Indian Patent Application No.201731000779<br>On 08.02.2016<br>Published on 08.12.2017   | Published                           |                                   | National                |
| 2.      | Modified chimney to arrest CO <sub>2</sub> gas and carbon soot<br>(Published) | Indian Patent Application No.201731016214<br>of 08. 05. 2017<br>Published on 14.12.2018 | Published and Under Final reviewing | Chemical                          | National                |
| 3.      | A sulphur base fertilizer for plant<br>(Published)                            | Indian Patent Application No. 201931006007<br>of 15.02.2019 Published on 21.08.2020     | Published                           | Chemical                          | National                |
| 4.      | An additive composition for use as a viscosity booster and filler for the     | Indian Patent Application No. 202131019455 of 28  | Published                           | Chemical                          | National                |

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|---|---|---|--------------------------|------------|----------|
|   | thermosetting resin (Published)                                   | .04. 2021<br>Published on<br>14.11.2022 |                          |            |          |
| 5 | A composite toilet door and a process for the manufacture thereof | No. 202331043730                        | Published                | Chemical   | National |
| 6 | A neck Guard for protection from animal                           | No. 202331043734                        | Awaiting for publication | Mechanical | National |

## MEMBERSHIP OF PROFESSIONAL BODIES

**Life member:** Indian Association for the Cultivation of Science; World Science congress; Paschim Banga Bigyan Mancha; Indian Photobiology Society

## RESEARCH PROJECTS COMPLETED

| Sl. No. | Title of the project with Reference No. | Grant(s)/ Amount sanctioned in Rs. (Lakhs) | Agency (Funding, Commissioning and/or Collaborating) | Period | Grant(s)/ Amount Rs. (Lakhs) | Principal Investigator/ Co-investigator | Joint Project (Yes/ No) | Output/ Impact book/ paper/ film/ technology /Web-facility/ |
|---------|---|--|--|--------|------------------------------|---|-------------------------|---|
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|    |   |                 |  |                                   |                 |                        |    | Program/Processes etc.   |
|----|---|-----------------|--|-----------------------------------|-----------------|------------------------|----|--|
| 1. | Development of low-cost BWP and BWR grade resin for plywood with 19loss phenol – A partial substitution of phenol and urea, (Completed) | Rs. 8,10,000/-  | M/s Agarwal Chemicals, 40 , strand Road, 4 <sup>th</sup> floor, Kolkata1 | 1(One) Yr.<br>Date: 18.07.2016    | Rs. 8,10,000/-  | Principal Investigator | No | Technology transfer to Agarwal chemical                                |
| 2. | Development of transparent and glossy polymer coating on medium density agro waste Particle board (Ongoing)                             | Rs. 17,34,000/- | Maa Sarada Decorative Particle Board Industries, Lakhsmanpur Hawrah      | 3(three) Yrs.<br>Date: 09.03.2020 | Rs. 17,34,000/- | Principal Investigator | No | Technology transfer to Maa Sarada Decorative Particle Board Industries |

**RESEARCH PROJECTS ON- GOING**

| Sl. No. | Title of the Project with Reference No.   | Grant(s)/ Amount sanctioned in Rs. (Lakhs) | Agency (Funding, Commissioning and/or Collaborating) | Period                       | Grant(s)/ Amount mobilized in Rs. (Lakhs) | Principal Investigator/ Co- investigator | Output/Impact, i.e. book/paper/ film/technology /Web-facility/ Program/Process etc. |
|---------|---|--|--|------------------------------|---|--|---|
| 1.      | Low cost Composite Toilet Door Using renewable fast-growing cellulose material Jute and bamboo with thermosetting resin | Rs. 15,00,000/-                            | MSME innovation scheme                               | 2(two) Yrs. Date: 22.06.2022 | Rs. 15,00,000/-                           | Principal Investigator                   | Laboratory scale product has been developed and the patent has been filed           |
| 2.      | Development of Modified chimneyto   | Rs. 15,00,000/-                            | MSME innovation scheme                               | 2(two) Yrs. Date:            | Rs. 15,00,000/-                           | Principal Investigator                   | Laboratory scale product has been developed and                                     |

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|  | arrest Carbon dioxide gas and carbon soot from different industrial chimney |  |  | 26.06.2022 |  |  | patent has been filed |
|--|---|--|--|------------|--|--|-----------------------|

## CONSULTANCY

| Sl. No. | Title of the Project with Reference No.   | Agency (Govt./Public/Private etc.)     | Period/Status   | Amount generated (in Rs.) | Consultant/Quality evaluator | Output/Impact |
|---------|---|--|-----------------|---------------------------|------------------------------|---------------|
| 1.      | Development of Roller ink for making on plywood and block board.<br>Ref. Nil<br>Date: 16.07.2016(Completed)   | Ranjan Engg. Pvt. Ltd Kolkata-45.      | 3(three) months | Rs. 50000/-               | T. K. Gangopadhyay           | Successful    |
| 2.      | Development of glossy type finishes on surface with glass fibre and jute fibre on the fibreboard to make composite doors.<br>Ref. Nil<br>Date: 20.08.2016 (Completed) | Tufwud Doors and Accessories. Kolkata. | 2(two) months   | Rs. 50000/-               | M. P. Khemka                 | Successful    |

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| 3. | Development of fire retardant and medium density jute-bamboo composite board for Indian rail way.<br>Ref. Excel/H.I.T./16-17   | Excell Composite Pvt. Ltd.   | 1(one) Yr. | Rs. 100000/-<br>Date:14.02.2017(Completed) | Jit Gupta      | Successful |
| 4. | Development of exterior grade fire retardant Paints for Metal coating.<br>Date:05.08.2017<br>Ref. Nil<br>(Completed)   | Wasser Polymer Pvt. Ltd.   | 1(one) Yr. | Rs. 2000000/-                              | A. Chakraborty | Successful |
| 5. | Development of low-cost Boiling water resistance (BWR) melamine urea formaldehyde (MUF) resin using lignin powder as a substitute of phenol for ply board,<br>Ref. Nil<br>Date: 07.10.2018 (Completed) | M/s Agarwal Chemicals, 40 , strand Road, 4 <sup>th</sup> floor, Kolkata1 | 2(Two) Yr. | Rs 15,00,000                               | P. Jalan       | Successful |
| 6. | Development of low commercial resin( Urea Formaldehyde) for ply board. B) Development of low cost Boiling water resistance( BWR) melamine urea formaldehyde(MUF) for ply board<br>Date: Ref. Nil       | Kalyani Chemicals, Vill. Kapileswar Digha, Borogaguli, Nadia             | 2(Two) Yr. | Rs. 10,00,000/-                            | P. Daw         | Successful |

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|------------|---|---|------------|-----------------|--------------|------------|
|            | Date:25.05.2019(Completed)  |   |            |                 |              |            |
| <b>7.</b>  | Development of prelam particle board from medium density Agro waste Particle, Date: 07.04.2019(Completed)   | Maa Sarada Decorative Particle Board Industries, Lakhsmanpur Hawrah                 | 2(Two) Yr. | Rs. 12,24,000/- | D. Manna     | Successful |
| <b>8.</b>  | Development of viscosity of UF resin to prevent penetration in particle during gluing   | Maa Sarada Decorative Particle Board Industries, Lakhsmanpur Hawrah                 | Instant    | Rs. 95,000/-    | P. Manna     | Successful |
| <b>9.</b>  | Development of additive booster for thermosetting resin adhesive. Date: 04.05.2022(Ongoing)   | M/s Agarwal Chemicals, 40, Strand Road, 4 <sup>th</sup> floor, Kolkata1             | 2(Two) Yr. | Rs. 18,50,000/- | Aditya Jalan | Ongoing    |
| <b>10.</b> | Modification of Industrial Chiemney (both internal and external combustion) to arrest carbon dioxide gas and carbon soot. Date: 06.06.2022(Ongoing) | R. H. Enterprises, Wellesly House, 2 <sup>nd</sup> floor, 7, Red Cross place, Kol-1 | 2(Two) Yr. | Rs. 13,75,000/- | Afsar Ahaed  | Ongoing    |

**INVITED LECTURES / RESOURCE PERSON/ PAPER PRESENTATION IN SEMINARS/ CONFERENCES/FULL PAPER IN CONFERENCE PROCEEDINGS (PAPER PRESENTED IN SEMINARS/CONFERENCES AND ALSO PUBLISHED AS FULL PAPER IN CONFERENCE PROCEEDINGS WILL BE COUNTED ONLY ONCE)**

| Sl. No. | Title of Lecture delivered / Paper presented /Paper published in conference proceedings | Title of Conference / Seminar etc. Date  | Organized by         | International (abroad/within Country)/National/State/University level |
|---------|---|--|----------------------|---|
| 1.      | Photo physical behavior of ST in different micelles media                               | NCMP: Resource application and conservation in India. date: 11-12, February, 2005                    | J. U. Kolkata        | National Conference   |
| 2.      | Utilization of Bamboo based composite material to save our forest reserve               | National Conference on molecules to materials, date: 16-17, March, 2011                              | Haldia Govt. College | National Conference   |
| 3.      | Modified flush door shutter using jute composite- A natural substitute of wood          | NCRAMT-2011<br>date: 24-26, June, 2011   | HIT, Haldia          | National Conference   |
| 4.      | Prospect of virtual reality in teacher education  | Quality initiative in teacher education with reference to secondary education. date: 5th April, 2014 | IEH, Sutahata, Amlat | National Seminar  |



|     |   |   |                                  |                               |
|-----|---|---|----------------------------------|-------------------------------|
| 5.  | Spectroscopic behavior of dye ST in different halide and pseudo-halide environment                                    | ISASUD-2014<br>date: 12-14, December, 2014                                  | IACS Kol-32                      | International Symposium       |
| 6.  | Development of Melamine animal glue resin having higher bond and self fire retardant properties                       | MESCoS-2015<br>date: 05-07, August, 2015                                    | HIT, Haldia                      | Indian workshop and Symposium |
| 7.  | Development of jute reinforced composite from E-Latex, A natural binder   | EFBDP: present and future.<br>date: 09-10, September, 2015                  | Mugberia Gangadhar Mahavidyalaya | National Seminar              |
| 8.  | Women participation in Indian Parliamentary election; The 21 <sup>st</sup> century status of women in Indian politics | WEI: A challenge in the 21 <sup>st</sup> Century.<br>date: 1st, March, 2017 | Mugberia Gangadhar Mahavidyalaya | National Seminar              |
| 9.  | Utilization of lightweight composite for structural purpose   | NSNN-2017<br>date: 17-18, March, 2017                                       | HIT, Haldia                      | National Seminar              |
| 10. | Development of Bio-based resin adhesive for structural purpose  | NSNN-2017<br>date: 17-18, March, 2017                                       | HIT, Haldia                      | National Seminar              |
| 11. | Effect of surface treatment of composite from wooden veneer-glass fiber hybrid  | NSNN-2017   | HIT, Haldia                      | National Seminar              |
| 12. | Evaluation of mechanical properties of plywood treated with a new wood preservative (CEB) chemical                    | NSNN-2017<br>date: 17-18, March, 2017                                       | HIT, Haldia                      | National Seminar              |

|            |   |  |                              |                       |
|------------|---|--|------------------------------|-----------------------|
| <b>13.</b> | Patent; An Intellect property   | IPR: contemporary issue and challenges in India<br>date: 14 <sup>th</sup> September 2017 | HLC, Haldia                  | National Seminar      |
| <b>14.</b> | Role of a teacher as a manager  | SCTE: Issue and concerns innovative practices.<br>date: 15-16, March, 2018               | IEH, Sutahata, Amlat         | International Seminar |
| <b>15.</b> | Management of wood and wood-based panel product in India                      | Managing self in the VUCA world.<br>date: 22-29, Sept, 2019                              | DMSS, HIT, Haldia            | National Workshop     |
| <b>16.</b> | School Administration and computer-based education, Sept-2013- Nov. -2013     | Part-time counselor- NSOU-sponsored B. Ed. Program                                       | IEH, Sutahata, Amlat, Haldia | National Workshop     |
| <b>17.</b> | Role of a Teacher as a Manager 18.06.2014-01.07.2014                          | Resource person- IGNOU-Workshop and seminar  | IEH, Sutahata, Amlat, Haldia | National Workshop     |
| <b>18.</b> | School administration and course curriculum methodology, 12.10.2014-19.0.2014 | Resource person- NSOU –Workshop and seminar  | IEH, Sutahata, Amlat, Haldia | National Workshop     |
| <b>19.</b> | Role of a teacher as a Manager 18.06.2015-29.06.2015                          | Resource person- IGNOU-Workshop and seminar  | IEH, Sutahata, Amlat, Haldia | National Workshop     |
| <b>20.</b> | Implementation strategies of RTE-2009, 20.06.2015-01.07.2015                  | Chairperson- Implementation strategies of RTE-2009                                       | IEH, Sutahata, Amlat, Haldia | National Workshop     |

|            |   |   |   |  |
|------------|---|---|---|--|
| <b>21.</b> | School administration and course curriculum methodology 18.06.2016-29.06.2016   | Resource person- Workshop and seminar   | IEH, Sutahata, Amlat, Haldia                  | National Workshop                        |
| <b>22.</b> | Implementation strategies of RTE-2009 Date: 18.06.2016-29.06.2016   | Chairperson – Implementation strategies of RTE-2009   | IEH, Sutahata, Amlat, Haldia                  | National Workshop                        |
| <b>23.</b> | 25 <sup>th</sup> Sept, 2017   | Evaluating Chair –NCSTC-DST-GOI   | Raman Centenary Science Club, Purba medinipur | District level National Science congress |
| <b>24.</b> | Bio-based jute bamboo composite for diverse structural applications. 5-6 <sup>th</sup> April, 2018                              | Invited Speaker – National Conference on Advancement in Civil Engineering Practice and Research | Department of CE, HIT, Haldia                 | National level                           |
| <b>25.</b> | 17-18 <sup>th</sup> March, 2017   | Chairing a technical session-2 <sup>nd</sup> NSNN-2017  | HIT, Haldia                                   | National level                           |
| <b>26.</b> | Interdisciplinary Science and its Application in mankind, 28 <sup>TH</sup> FEB, 2020  | Invited Speaker-National Science Day  | VMM, Chaitanyapur                             | National level                           |
| <b>27.</b> | 29 <sup>th</sup> sept-19 <sup>th</sup> Oct 2021   | Program Coordinator e-Sip-2021  | HIT, Haldia                                   | National level                           |
| <b>28.</b> | An approach to the utilization of basic science concept in industrial application 29 <sup>th</sup> Oct-2 <sup>nd</sup> Nov 2021 | Invited Speaker – International conference-CTCSIA-2021  | HIT, Haldia and ICS-Kokata                    | International level                      |

|            |  |   |  |                          |
|------------|--|---|--|--------------------------|
| <b>29</b>  | Right to Education Act -2009   | Chairperson – Implementation strategies of RTE-2009   | IEH, Sutamata, Amlat, Haldia                         | National Workshop        |
| <b>30.</b> | Utilization of fast-growing bamboo-based lignocelluloses materials as a wood substitute to save forest reserve- 13-14 May 2022 | International conference on rethinking business strategies by reshaping business perspectives in the current business environment | School of Management and Social Science, HIT, Haldia | International Conference |

### ADMINISTRATIVE POSITION/S HELD

| Sl. No.   | Designation                         | Institution/ Department  | Date           |           |
|-----------|-------------------------------------|--|----------------|-----------|
|           |                                     |  | From           | To        |
| <b>1.</b> | Officer-in-Charge                   | Examination, Haldia Institute of Technology Appointed by Maulana Abul Kalam Azad University of Technology (MAKAUT, Kolkata)                  | April 2018     | Till date |
| <b>2.</b> | Coordinator<br>(Service to Nation)  | National Service Scheme (NSS) Haldia Institute of Technology Appointed by Maulana Abul Kalam Azad University of Technology (MAKAUT, Kolkata) | September 2011 | Till date |
| <b>3.</b> | Coordinator<br>(Service to Society) | Community Development Service (CDS)<br>Appointed by Haldia Institute of Technology   | May 2014       | Till date |
| <b>4.</b> | Accountant/Member                   | Max Club, Appointed by Haldia Institute of Technology  | November, 2016 | Till date |

|    |             |  |      |           |
|----|-------------|--|------|-----------|
|    |             |  |      |           |
| 5. | Coordinator | Startup Project, Appointed by Haldia Institute of Technology | 2022 | Till date |

### INVOLVEMENT IN STUDENTS RELATED CO-CURRICULAR & EXTENSION ACTIVITY

| Sl. No. | Activity   | Description        |                            |            |            |
|---------|--|--------------------|----------------------------|------------|------------|
|         |  | Designation        | Institution/<br>Department | From       | Date<br>To |
| 1.      | Student-related co-curricular, extension, and field-based activities such as student clubs, career counselling, study visits, student seminars and other events, cultural, sports, NCC, NSS, and community services. | Coordinator (P.O.) | NSS                        | 07.08.2012 | 10.06.2022 |
| 2.      |  | Coordinator        | CDS                        | 30.05.2014 | 10.06.2022 |
| 3.      |  | Member/ Accountant | Max Club (aeronautics)     | 11.03.2016 | 10.06.2022 |
| 4.      |  | Member             | Student Welfare Committee  | 27.08.2014 | 10.06.2022 |

|    |  |             |                  |            |            |
|----|--|-------------|------------------|------------|------------|
| 5. |  | Member      | Sports committee | 12.03.2013 | 10.06.2022 |
| 6. |  | Coordinator | SIP              |            |            |
| 7. |  | Coordinator | SIP              |            |            |
| 8. |  | Member      | IIPC             | 10.06.2022 | Till date  |

**UMAN RESOURCE DEVELOPMENT CENTRE (HRDC)/ACADEMIC STAFF COLLEGE ORIENTATION / REFRESHER COURSE/OTHERS ATTENDED**

| Sl. No. | Name of the Course/Summer School  | Place       | Duration                  | Sponsoring Agency   |
|---------|---|-------------|---------------------------|---|
| 1.      | Faculty Development Programme on Emerging Trends in Computing and Communication (ETCN-2015) | HIT, Haldia | One week (5-11Jan, 2015)  | Organized by the School of Engineering at Haldia institute of technology. |
| 2.      | Faculty Development Programme on Bridging gap between academia and industry                 | HIT, Haldia | One week (5-11 Feb, 2015) | Organized by the IIPC TPO cell at Haldia institute of technology.         |

|            |  |                            |   |                                    |
|------------|--|----------------------------|---|------------------------------------|
| <b>3.</b>  | Faculty Development Programme for student Induction (FDP-SI)   | Sister Nivedita University | 3Days (16-18 July, 20018)                                       | AICTE                              |
| <b>4.</b>  | Faculty Development Programme for student Induction (FDP-SI)   | Sister Nivedita University | 3Days (18-20 July, 2019)  | AICTE                              |
| <b>5.</b>  | Faculty Development Programme for Sustainable Technology-Innovation and foundation for future (FTIFF-2020)   | Online                     | 5Days (12 <sup>ve</sup> Aug. - 16 <sup>th</sup> Aug, 2020)      | HIT, Haldia                        |
| <b>6.</b>  | Faculty Development Programme for Computational Techniques in chemistry and materials science- How to use contemporary software tools (FTIFF-2020) | Online                     | 6Days (14 <sup>th</sup> Aug. -19 <sup>th</sup> September, 2020) | MAKAUT and IUST(J&K)               |
| <b>7.</b>  | Workshop on inculcating Universal Human Value in Technical education   | Online                     | 5Days (21 <sup>st</sup> Aug. -26 <sup>th</sup> Octo, 2020)      | AICTE                              |
| <b>8</b>   | Short term training program (STTP)   | Online                     | 6Days (06 <sup>th</sup> Aug. -11th Dec, 2022)                   | MAKAUT                             |
| <b>9.</b>  | Refreshers course part 1 on Universal Human Value  | Online                     | 6Days (28 <sup>th</sup> Aug. -2 <sup>nd</sup> Feb, 2022)        | AICTE                              |
| <b>10.</b> | 40 Hours online faculty development program on "Optimization techniques in ML and AI   | Online                     | 26 <sup>th</sup> Feb to 7 <sup>th</sup> March 2022              | NIT –Warangal (TS)and HIT, Haldia. |