1. Achievements of INARS in details of 2024

- **Total Published Paper: 87**
- **Publication list of INARS:**

1. Ilnaz Fargul Chowdhury, Md Tanzil Ahamed Shawon, Md Ashraful Alam, Sabiha Fatima, Azmat Ali Khan, Jinbei Yang, Zuwu Tang, and **Ajoy Kanti Mondal***. "Ni^{2+}-Rich Collagen/Lignin Composite Hydrogel: Transforming Industrial Waste Materials into Flexible Electronics." *ACS Applied Polymer Materials* 6(24) (2024) 15094-15104.
2. Shibo Han, Xilai Yan, Han Han, Weijie Lin, Hongshen He, Jie Xie, **Ajoy Kanti Mondal**, Qiuxia Zou, and Fang Huang. "Study the implication of different SiO2/Al2O3 ratios on the pore size and acidity of Beta zeolite and its catalytic pyrolysis mechanism of Kraft lignin." *Journal of Analytical and Applied Pyrolysis* 183 (2024): 106730.
3. Md Ashraful Alam, Akash Debnath, Khandoker Tahmina Tasnim, Shashanka Shekhar Sarker, Md Tushar Uddin, Sarker Kamruzzaman, Ilnaz Fargul Chowdhury, Md Tanzil Ahamed Shawon, Zuwu Tang, and **Ajoy Kanti Mondal***. "Facile strategy of Fe^{3+} rich collagen-based composite hydrogel for antibacterial, electricity harvesting and sensing applications." *Materials Today Communications* 41 (2024): 110391.
4. Weijie Lin, Dengwen Ning, Dezhong Xu, Shuai Wu, Qiuxia Zou, **Ajoy Kanti Mondal**, and Fang Huang. "Study on the effect of combined and free lignin to the cellulose enzymatic hydrolysis." *Industrial Crops and Products* 222 (2024): 119516.
5. Digafe Alemu, Belete Ketema and **Ajoy Kanti Mondal***. "Recent Advances of Phytochemicals and Their Applications for Antiviral Therapy" *Journal of Biochemistry and Biophysics* 6(1) 2024: 1-15.
6. Md Ashraful Alam, Md Tushar Uddin, Md Abul Kashem Azad, Shashanka Shekhar Sarker, Md Abdur Razzaq, Md Sefiatulla Ridoy, Md Aftab Ali Shaikh, and **Ajoy Kanti Mondal***. "Fatliquor from rubber seed oil: Synthesis and application in leather processing." *Industrial Crops and Products* 219 (2024): 119099.
7. Jiajun Jiang, Qianhong Zhang, Xiyao Luo, Binbin Cheng, Qunfeng Chen, Jiawei Yang, Liulian Huang, Ajoy Kanti **Mondal**, Zhanhui Yuan, Lihui Chen, Jianguo Li. "Superfast, large-scale harvesting of cellulose molecules via ethanol pre-swelling engineering of natural fibers." *Carbohydrate Polymers* 343 (2024): 122484.
8. Anqi Cai, Yalan Chen, Xinxin Zhang, Jinli Zou, Jinbei Yang, **Ajoy Kanti Mondal**, Yang Wu, and Zuwu Tang. "Facile strategy of supramolecular adhesives based on water-soluble polymers and tannic acid." *Polymer* 308 (2024): 127343.
9. Weijie Lin, Han Han, Xilai Yan, Jie Xie, Hongshen He, Shibo Han, Dengwen Ning, **Ajoy Kanti Mondal**, Shuai Wu, and Fang Huang. "Development of lignin hydrogel reinforced polypyrrole rich electrode material for supercapacitor and sensing applications." *International Journal of Biological Macromolecules* 273(1) (2024): 132962.
10. Yalan Chen, Jinli Zou, Meiqiong Yu, **Ajoy Kanti Mondal***, Shi Li, and Zuwu Tang. "Physically crosslinked tannic acid-based adhesive for bonding wood." *Cellulose* 31, no. 11 (2024): 6945-6954.

11. Khandoker Tahmina Tasnim, Akash Debnath, Md Tushar Uddin, Md Ashraful Alam, Md Abdur Razzaq, Sk Zubaer Zaman, Md Aftab Ali Shaikh, and **Ajoy Kanti Mondal***. "Comparative evaluation of tannin from banana bunch and stem syrup for leather processing." *Heliyon* 10(11) (2024) e31787.
12. Zuwu Tang, Jinbei Yang, Shi Li, Zhenzeng Wu, and **Ajoy Kanti Mondal***. "Anti-swellable, stretchable, self-healable, shape-memory and supramolecular conductive TA-based hydrogels for amphibious motion sensors." *European Polymer Journal* 211 (2024): 113034.
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15. Md Ashraful Alam, Md Tushar Uddin, Khandokar Tahmina Tasnim, Shashanka Shekhar Sarker, Md Abdur Razzaq, Md Alamgir Kabir, SM Asaduzzaman Sujan, and **Ajoy Kanti Mondal***. "Comparative evaluation of physicochemical and antimicrobial properties of rubber seed oil from different regions of Bangladesh." *Heliyon* 10(4) (2024) e25544.
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17. Zuwu Tang, Xinxing Lin, Meiqiong Yu, **Ajoy Kanti Mondal***, and Hui Wu. "Development of Biocompatible Mussel-Inspired Cellulose-Based Underwater Adhesives." *ACS omega* 9(3) (2024): 3877-3884.
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20. M.Y. Pabel, **Sabina Yasmin***, M.A.A. Shaikh, M.H. Kabir Electronic waste derived reduced graphene oxide supported silver nanoparticles for the electrochemical sensing of trace level arsenite in aqueous medium. Sensors and Actuators A: Physical 366, 2024, 115028. http://dx.doi.org/10.1016/j.sna.2024.115028.
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Electronic Waste for the Removal of Doxycycline in aqueous media, Journal of Hazardous Materials Advances, 14 (2024) 100429. https://doi.org/10.1016/j.hazadv.2024.100429

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27. M.H. Kabir*, **Sabina Yasmin*,** S. Islam, M.A.A. Shaikh, M. Moniruzzaman, Residue determination of thiamethoxam and its metabolite clothianidin in okra using the modified QuEChERS method with d-SPE clean-up coupled with LC-MS/MS, Food Chemistry Advances, 5, (2024),100754, https://doi.org/10.1016/j.focha.2024.100754.
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31. M.A. Rahman, M.A. Haque, M.A.A. Shaikh, C.K. Roy, A.H. Reaz, M.T.A. Shawon, P. K. Baksi, **Sabina Yasmin**, M.H. Kabir, S.H. Won, T.W. Kim, M. M. Rahman, Titanium sulfide thin film coated titanium foil for high-performance symmetric supercapacitor, Journal of Energy Storage, Volume 99, Part A, 2024, 113205, https://doi.org/10.1016/j.est.2024.113205.
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- **Process: 04**

1.0 Preparation of Reference Buffer Solution of pH 10.0±0.02

Ref: 39.02.0000..43.38.010.24/340 Dated 24.11.2024

2.0 BCSIR Digital arsenic test kit

Ref: 39.02.0000..43.37.948.23/1416 Dated 28.07.2024

2.0 A process for the Preparation of Reference Buffer Solution of pH 4.0±0.02

Ref: 39.02.0000..43.37.972.23/1265 Dated 15.07.2024

4. A Desalination Process of Coastal Water for Drinking Purpose

Ref: 39.02.0000..43.37.916.22/1300 Dated 22.04.2024

- **Patent: 01**

Production of safe and cost effective mineral water

Ref: Patent No: 4/2021/305 Dated 3 .10. 2024