# Chanchal Kumar Roy

Associate Professor
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## Summary


Experienced academician and researcher with eight years in university. Developed expertise in new material processing for energy storage applications such as battery and supercapacitors. Have experience in teaching undergraduate and supervising post-graduate research students. Worked as team leader for different innovative research projects. Completed a master's degree in Chemistry at University of Dhaka, Bangladesh and Ph.D. in Life Science from the Hokkaido University, Japan in 2016. Demonstrated excellence in advancing and communicating scientific works, evidenced by securing the research fellowship, delivering invited seminars, and contributing to numerous publications. Highly motivated work in industry and academia in new material processing for real-time applications.


Google Scholar ID: https://scholar.google.com/citations?user=_oSxbRgAAAAJ&hl=en
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## Education

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| Ph.D. | Life Science | Hokkaido University, Japan | 2016 |
| M.S. | Chemistry | University of Dhaka, Bangladesh | 2009 |
| B.Sc. | Chemistry | University of Dhaka, Bangladesh | 2008 |

## Employment

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| Associate Professor | Bangladesh University of Engineering and Technology (BUET), Bangladesh | 2023- 2024 |
| Assistant Professor | Bangladesh University of Engineering and Technology (BUET), Bangladesh | 2016- 2023 |
| Post-doctoral Research Fellow | Hokkaido University, Japan | 2016 |

## Additional Experience

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| Assistant Provost | Kazi Nazrul Islam Hall, BUET | 3 Year |
| Coordinator | Department of Chemistry, Bureau of Research, Testing and Consultation, BUET | 1 Year |
| Assistant Coordinator | Department of Chemistry, Bureau of Research, Testing and Consultation, BUET | 4 Year |
| Postgraduate Tabulator | Department of Chemistry, BUET | 3 Year |
| Member | Procurement Committee, Department of Chemistry, BUET | 2 Year |

## Academic Awards

- United Group Paper Award-2016, Bangladesh for distinguished researchers
- Best Publication Award, International Graduate Program-2015, Japan for excellent paper publication (Self-adjustable Adhesion of Polyampholyte Hydrogels, Advanced Materials, Impact factor- 17.49)
- Excellent Oral Presentation Award, 3rd International Life-Science Symposium (3rdILSS, 2015), Japan for young scientists

- Recipient of Japanese Government (Monbukagakusho: MEXT ) Scholarship, 2012
- Recipient of Japan Student Services Organization (JASSO) Scholarship 2014-2015
- Recipient of Dhaka University-Japan International Cooperation Foundation (DU-JICF) Scholarship
- Rajshahi Board Scholarship (University Level)
- Rajshahi Board Scholarship (College Level)

## Research Experiences

- Research Assistant, Faculty of Advanced Life Science, Hokkaido University, Japan
- Research Fellow, Bose Centre for Advanced Study and Research in Natural Sciences, University of Dhaka, Dhaka
- Research Fellow, Department of Chemistry, University of Dhaka, Dhaka

## Research Project Awarded

- Co-Principal Investigator, *A novel biomass derived Na/K-ion battery prototype for the next generation low-cost energy storage system*, Bangladesh Energy and Power Research Council (BEPRC), 2020-23
- Principal Investigator, *Prototype Supercapacitor Device Fabrication Utilizing Waste Electrolytes* (SRG-232377), funded by the Ministry of Science and Technology (MOST), 2022-23
- Principal Investigator, *Development of Self-doped Activated Carbons from Car Exhaust as High-performance Supercapacitor Electrode Materials for Sustainable Energy Storage System*, funded by the Ministry of Science and Technology (MOST), 2021-22
- Associate Investigator, *Development of mechanically tough, self-healable and conducting hydrogels for biomedical applications (PS20221772)*, funded by the Ministry of Education (MoE), Bangladesh 2022-25
- Principal Investigator, *Fabrication of Low-Cost Energy Storage Supercapacitor Electrode Materials from Banana Leaves for High-Performance Applications*, funded by the Ministry of Science and Technology (MOST), 2020-21
- Principal Investigator, *Designing Water-based Adhesives from Polyampholyte System (PS20191001)*, funded by the Ministry of Education (MoE), Bangladesh 2019-22
- Principal Investigator, *Investigation of the effect of water structure modifiers in aqueous solution for the electroanalysis of heavy metal ions*, funded by University Grant Commission of Bangladesh (UGC), 2018-19

## Research Impacts

- The developed technology for the modification of Na/K ion battery has been recently accepted by the Bangladesh Energy Ministry for manufacturing of prototype.
- The initiatives for the development of eco-friendly adhesive have been accepted for funding by the Ministry of Science and Technology, Bangladesh.

## Research Collaborators

- Professor Dr. Yusuke Yamauchi, Australian Institute for Bioengineering and Nanotechnology (AIBN), The University of Queensland, Australia
- Professor Dr. Sang Woo Joo, Yeungnam University, Korea
- Dr. Md. Abdul Aziz, Center of Excellent in Nanotechnology (CENT) King Fahd University of Petroleum & Minerals (KFUPM), Saudi Arabia
- Professor Dr. Md. Abu Bin Hasan Susan, Department of Chemistry, University of Dhaka, Bangladesh

## Memberships:

- Invigilator, Bangladesh Chemistry Olympiad
- Member, Organizing Committee, Bangladesh Chemistry Olympiad
- Life Member, Bangladesh Chemical Society (BCS), Bangladesh
- Member of the Society of Polymer Science, Japan (SPSJ)
- Life Member, Dhaka University Chemistry Alumni Association, Bangladesh
- Life Member, BUET Chemistry Alumni Association, Bangladesh
- Member, Bangladesh STEM Society (bdSTEM), Bangladesh

## Personal Information:

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|---|---|
| **Father's name** | : Monindro Chandra Roy |
| **Mother's name** | : Usha Rani Roy |
| **Date of Birth** | : 01 October 1985 |
| **Place of Birth** | : Lalmonirhat |
| **Nationality** | **:** Bangladeshi **(**by birth) |
| **Religion** | : Hindu |
| **Sex** | : Male |
| **Marital Status** | : Married |
| **National ID No** | : 19852697557413838 |
| **Passport No** | : BY0512634 |
| **Blood Group** | : B(+)ve |
| **Permanent Address** | : Village and Post Office- Rajpur<br>Thana and Zilla- Lalmonirhat, Bangladesh |
| **Present Address** | : Department of Chemistry, Bangladesh University of Engineering and Technology (BUET), Dhaka-1000 |

## Contact Address

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## List of Publications:

**Journal Publications:** (**27**)

27. M. Ismail, A. H. Reaz, C. K. Roy, A. N. Chowdhury, S. Saha, Electrodeposition of Corrosion Protective Zinc Films from Reverse Micellar Solutions, *Journal of The Electrochemical Society*, 172, 012501 (**2025**). https://doi.org/10.1149/1945-7111/ada373 (Q1, Impact Factor-3.2)
26. M. A. Rahman, M. A. Haque, M. A. A. Shaikh, **C. K. Roy**, A. H. Reaz, M. T. A. Shawon, P. K. Baksi, S. 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*, 99, 113205 (**2024**). https://doi.org/10.1016/j.est.2024.113205 (Q1, Impact Factor-8.9)
25. A. R. Shakil, M. L. Begum, M. A. A. Shaikh, S. Sultana, M. S. Rahman, M. M. H. Rumon, **C. K. Roy**, M. A. Haque, Jute Fiber Reinforced Hydrogel Composite for Removal of Methylene Blue Dye from Water, *Dhaka University Journal of Science*, 70, 59 (**2022**). https://doi.org/10.3329/dujs.v70i2.62608
24. M. R. Hasan, T. Islam, M. M. Hasan, A. -N. Chowdhury, A. J. S. Ahammad, A. H. Reaz, **C. K. Roy**, S. S. Shah and M. A. Aziz, Evaluating the electrochemical detection of nitrite using a platinum nanoparticle coated jute carbon modified glassy carbon electrode and voltametric analysis, *Journal of Physics and Chemistry of Solids*, 165, 110659 (**2022**). https://doi.org/10.1016/j.jpcs.2022.110659 (Q2, Impact Factor- 4.383)
23. M. A. B. Siddique, U. H. Bithi, A. N. Ahmed, M. A. Gafur, A. H. Reaz, **C. K. Roy**, M. M. Islam, S. H. Firoz, Preparation of manganese oxide nanoparticles with enhanced capacitive properties utilizing gel formation method, *ACS Omega*, 7, 48007 (**2022**) https://doi.org/10.1021/acsomega.2c05872 (Q1, Impact Factor- 4.1)
22. M. M. H. Rumon, A. A. Akib, F. Sultana, M. Moniruzzaman, M. S. Niloy, M. S. Shakil, **C. K. Roy**, Self-healing hydrogels: Development, biomedical applications, and challenges, *Polymers*, 14, 4539 (**2022**). https://doi.org/10.3390/polym14214539 (Q1, Impact Factor- 4.7)
21. A. A. Akib, R. Shakil, M. M. H. Rumon, **C. K. Roy**, E. H. Chowdhury, A. -N. Chowdhury, Natural and synthetic micelles for the delivery of small molecule drugs, imaging agents and nucleic acids, *Current Pharmaceutical Design*, 28, 1389 (**2022**). https://doi.org/10.2174/1381612828666220506135301 (Q2, Impact Factor- 2.707)
20. A. H. Reaz, S. Saha, **C. K. Roy**, M. A. Wahab, G. Will, M. A. Amin, Y. Yamauchi, S. Liu, Y. V. Kaneti, M. S. Hossain, and S. H. Firoz, Boosting capacitive performance of manganese oxide nanorods by decorating with three-dimensional crushed graphene, *Nano Convergence*, 9, 10 (**2022**). https://doi.org/10.1186/s40580-022-00300-2 (Q1, Impact Factor- 10.038)
19. S. Hasan, A. H. Reaz, S. Das, **C. K. Roy**, and M. A. Basith, $CuCo_2S_4$–$MoS_2$ nanocomposite: a novel electrode for high-performance supercapacitors, *Journal of Materials Chemistry C*, 10, 7980 (**2022**). https://doi.org/10.1039/D2TC01026G (Q1, Impact Factor- 8.067)
18. A. H. Reaz, S. Saha, **C. K. Roy**, M. M. Hosen, T. S. Shuvo, M. M. Islam, and S. H. Firoz, Performance Improvement of Supercapacitor Materials with Crushed 3D Structured Graphene, *Journal of The Electrochemical Society*, 169, 010521 (**2022**). https://doi.org/10.1149/1945-7111/ac4930 (Q1, Impact Factor- 4.316)
17. M. M. H. Rumon, S. D. Sarkar, M. M. Uddin, M. M. Alam, S. N. Karobi, A. Ayfar, M. S. Azam, and **C. K. Roy**, Graphene oxide based crosslinker for simultaneous enhancement of mechanical toughness and self-healing capability of conventional hydrogels, *RSC Advances*, 12, 7453 (**2022**). https://doi.org/10.1039/D2RA00122E, (Q1, Impact Factor- 4.036)

16. Y. A. Tarek, R. Shakil, A. H. Reaz, **C. K. Roy**, H. R. Barai and S. H. Firoz, Wrinkled Flower-Like rGO intercalated with $Ni(OH)_2$ and $MnO_2$ as High-Performing Supercapacitor Electrode, *ACS Omega*, 7, 20145 (**2022**).
https://doi.org/10.1021/acsomega.2c01986 (Q1, Impact Factor- 4.132)
15. A. H. Reaz, H. R. Barai, S. Saha, K. Chowdhury, M. N. Mojumder, S. H. Firoz, A.-N. Chowdhury, S. W. Joo, and **C. K. Roy**, Self-Doped Activated Carbons from Car Exhaust as High-Performance Supercapacitor Electrode Materials for Sustainable Energy Storage System, *Journal of The Electrochemical Society*, 168, 080535(**2021**).
https://doi.org/10.1149/1945-7111/ac1dd0 (Q1, Impact Factor- 4.316)
14. H. R. Barai, A. H. Reaz, Y. A. Tarek, S. Saha, M. N. Mojumder, K. Chowdhury, S. H. Firoz, S. W. Joo, and **C. K. Roy**, Communication—Self-Doped Mesoporous Activated Carbon Prepared from Car Exhaust Exhibited Long Cycle Life and High Specific Capacitance for Supercapacitor Applications, *ECS Journal of Solid State Science and Technology*, 10, 071014 (**2021**).
https://doi.org/10.1149/2162-8777/ac1480 (Q2, Impact Factor- 2.070)
13. M. I. Sujan, S. D. Sarkar, **C. K. Roy**, M. Ferdous, A. Goswami, M. A. Gafur, and M. S. Azam, Graphene Oxide Crosslinker for the Enhancement of Mechanical Properties of Polylactic Acid, *Journal of Polymer Science*, 59, 1043 (**2021**).
https://doi.org/10.1002/pol.20210029 (Q2, Impact Factor- 2.702)
12. M. M. Rahman, A. H. Howlader, E. Rahman, H. Roy, M. M. Hosen, M. M. Rahman, S. D. Sarkar, **C. K. Roy**, A. Bin Imran, and S. H. Firoz, Development of Functionalized Nanocrystalline Cellulose-Based Polyelectrolytes with High Water, *Polymer Journal*, 53, 913 (**2021**).
https://doi.org/10.1038/s41428-021-00483-1 (Q1, Impact Factor- 3.135)
11. **C. K. Roy**, S. S. Shah, A. H. Reaz, S. Sultana, A. N. Chowdhury, S. H. Firoz, M. H. Zahir, M. A. Ahmed Qasem, and M. A. Aziz, Preparation of Hierarchical Porous Activated Carbon from Banana Leaves for High-Performance Supercapacitor: Effect of Type of Electrolytes on Performance, *Chemistry - An Asian Journal*, 16, 296 (**2021**).
https://doi.org/10.1002/asia.202001342 (Q1, Impact Factor- 4.839)
10. R. Shakil, M. N. Shaikh, S. S. Shah, A. H. Reaz, **C. K. Roy**, A. N. Chowdhury, and M. A. Aziz, Development of a Novel Bio-Based Redox Electrolyte Using Pivalic Acid and Ascorbic Acid for the Activated Carbon-Based Supercapacitor Fabrication, *Asian Journal Organic Chemistry*, 10, 2220 (**2021**).
https://doi.org/10.1002/ajoc.202100314 (Q1, Impact Factor- 3.116)
9. N. Chowdhury, Solaiman, **C. K. Roy**, S. H. Firoz, T. Foyez, and A. Bin Imran, Role of Ionic Moieties in Hydrogel Networks to Remove Heavy Metal Ions from Water, *ACS Omega*, 6, 836 (**2021**).
https://doi.org/10.1021/acsomega.0c05411 (Q1, Impact Factor- 4.132)
8. **C. K. Roy**, S. Saha, M. A. B. H. Susan, Control Over Diffusion of Ionic Ferrocene Species in Aqueous Solution Using Surfactant Based Organized Media, *Journal of The Electrochemical Society*, 167, 116512 (**2020**)
https://doi.org/10.1149/1945-7111/aba400 (Q1, Impact Factor- 4.316)
7. M. A. Hossain, **C. K. Roy**, S. D. Sarkar, H. Roy, A. H. Howlader, S. H. Firoz, Improvement of Strength of Poly(acrylic acid) Hydrogels by the Incorporation of Functionally Modified Nanocrystalline Cellulose, *Materials Advances*, 1, 639 (**2020**)
https://doi.org/10.1039/D0MA00478B (Q2, Impact Factor- 3.181)
6. S. D. Sarkar, M. M. Uddin, **C. K. Roy**, M. J. Hossen, M. I. Sujan, M. S. Azam, Mechanically tough and highly stretchable poly(acrylic acid) hydrogel cross-linked by 2D graphene oxide, *RSC Advances*, 10, 10949 (**2020**)
https://doi.org/10.1039/D0RA00678E (Q1, Impact Factor- 4.036)
5. M. I. Sujan, S. D. Sarkar, S. Sultana, L. Bushra, R. Tareq, **C. K. Roy**, M. S. Azam, Bi-functional silica nanoparticles for simultaneous enhancement of mechanical strength and swelling capacity of hydrogels, *RSC Advances*, 10, 6213 (**2020**)
https://doi.org/10.1039/C9RA09528D (Q1, Impact Factor- 4.036)

4. M. J. Hossen, S. D. Sarkar, M. M. Uddin, **C. K. Roy**, M. S. Azam, Mussel-Inspired Adhesive Nano-Filler for Strengthening Polyacrylamide Hydrogel, *ChemistrySelect*, 5, 8906 (**2020**)
   https://doi.org/10.1002/slct.202001632 (Q2, Impact Factor- 2.307)
3. A. Bin Ihsan, T. L. Sun, T. Kurokawa, S. N. Karobi, T. Nakajima, T. Nonoyama, **C. K. Roy**, F. Luo, J. P. Gong, Self-Healing Behaviors of Tough Polyampholyte Hydrogels, *Macromolecules*, 49, 4245 (**2016**)
   https://doi.org/10.1021/acs.macromol.6b00437 (Q1, Impact Factor- 6.057)
2. **C. K. Roy**, H. L. Guo, T. L. Sun, A. Bin Ihsan, T. Kurokawa, M. Takahata, T. Nonoyama, T. Nakajima, J. P. Gong, Self-Adjustable Adhesion of Polyampholyte Hydrogels, *Advanced Materials*, 27, 7344 (**2015**)
   https://doi.org/10.1002/adma.201504059 (Q1, Impact Factor- 32.086)
1. M. T. I. Mredha, **C. K. Roy**, M. M. Rahman, M. Y. A. Mollah, M. A. B. H. Susan, An electrochemical approach to study water–D (−) fructose interactions, *Electrochimica Acta* ,97, 231 (**2013**)
   https://doi.org/10.1016/j.electacta.2013.02.123 (Q1, Impact Factor- 7.336)

**Book Chapters: (2)**

2. R. Shakil, Y. A. Tarek, M. H. Rumon, **C. K. Roy**, A.-N. Chowdhury & R. Das, Polymeric Membranes for O2/N2 Separation. In *Polymeric Membranes for Water Purification and Gas Separation*, Materials Research Forum (MRF), 113**,** 171 (**2021**).
   https://doi.org/10.21741/9781644901632-6
1. R. Shakil, M. M. H. Rumon, Y. A. Tarek, **C. K. Roy**, A.-N. Chowdhury & R. Das. Surface-modified nanomaterials-based catalytic materials for water purification, hydrocarbon production, and pollutant remediation, In *Surface Modified Nanomaterials for Applications in Catalysis*, Elsevier, 103, (**2022**).
   https://doi.org/10.1016/B978-0-12-823386-3.00010-6

**Conference Proceedings: (12)**

12. M. Khanam, C. K. Roy, H. M. M. A. Rashed, Effects of Rare Earth Element Gd on Corrosion Properties of Mg-Zn Alloys, *Proceedings of 14th International Conference on Mechanical Engineering*, ICME **2023**, BUET
    http://dx.doi.org/10.2139/ssrn.4857811
11. A. A. Akib, M. M. H. Rumon, M. Moniruzzaman, **C. K. Roy**, and A.-N. Chowdury, PLA-PEG Diblock Copolymer Micelle as Nanocarrier for Anti-Obesity Drug Delivery System, *ECS Transactions*, 107, 19031(**2022**).
    https://doi.org/10.1149/10701.19031ecst
10. K. Chowdhury, A. H. Reaz, **C. K. Roy,** and A.-N. Chowdury, Fabrication of a Highly Active Ni-$SiO_2$ Nanocatalyst and Study of Its Catalytic Efficacy Toward the Reduction of Nitroaromatics, *ECS Transactions*, 107, 16035 (**2022**).
    https://doi.org/10.1149/10701.16035ecst
9. M. Moniruzzaman, A. Akib, R. Shakil, S. Khatun, **C. K. Roy,** and A.-N. Chowdury, Influence of Binder in the Fabrication of AC-Based High-Performance Electrochemical Supercapacitors, *ECS Transactions*, 107, 18357 (**2022**).
    https://doi.org/10.1149/10701.18357ecst
8. R. Shakil, Y. A. Tarek, **C. K. Roy**, and A.-N. Chowdury, Designing High-Performance Symmetric Supercapacitors from Waste Jute and Bio-Electrolyte, *ECS Transactions*, 107, 14511(**2022**).
    https://doi.org/10.1149/10701.14511ecst
7. Y. A. Tarek, R. Shakil, **C. K. Roy**, and S. H. Firoz, Redox Mediated Neutral Electrolyte Solution for High Performing $Ni(OH)_2$-$MnO_2$-rGO Supercapacitor Electrode, *ECS Transactions*, 107, 13429 (**2022**).
    https://doi.org/10.1149/10701.13429ecst

6. S. Khatun, A. Kumer, C. K. Roy, M. Moniruzzaman, A. -N. Chowdury, Fabrication of cellulose capped MnxOy-Ag nanocomposites and investigation of its oxidative and antibacterial efficacy in water environment, *ECS Transactions*, 107, 15817 (**2022**). https://doi.org/10.1149/10701.15817ecst
5. Y. A. Tarek, A. H Reaz, R. Shakil, H. Roy, R. A. Jahan, **C. K. Roy**, S. H. Firoz, One-Step Gel Formation Method for the Synthesis of NiO-$Mn_XO_Y$ Mixed Oxide Nanomaterials as a Prospective Supercapacitor Material, *2nd International Conference on Sustainable Technologies for Industry 4.0 (STI)*; *IEEE*, 1 (**2020**). DOI: 10.1109/STI50764.2020.9350497
4. **C. K. Roy**, A. B. Ihsan, T. L. Sun, T. Nonoyama, T. Nakajima, T. Kurokawa, J. P. Gong, Bioadhesion Using Polyampholyte Hydrogel, *Polymer Preprints, Japan*, 64 (1), ROMBUNNO.3PC053 (**2015**).
3. **C. K. Roy**, H. L. Guo, A. B. Ihsan, T. L. Sun, T. Nonoyama, T. Nakajima, T. Kurokawa, J. P. Gong, Polyampholyte Hydrogels; Smart, Soft and Wet Adhesive, *Polymer Preprints, Japan*, 64 (2), ROMBUNNO.2PA069 (**2015**).
2. **C. K. Roy**, A. B. Ihsan, T. L. Sun, T. Nonoyama, T. Nakajima, T. Kurokawa, J. P. Gong, Reversible and Strong Adhesion of Polyampholyte Hydrogel, 25th Polymer Gel Meeting, 85-86 (**2014**).
1. **C. K. Roy**, H. Okazaki, A. B. Ihsan, T. L. Sun, T. Nonoyama, T. Nakajima, T. Kurokawa, J. P. Gong, Shear Adhesion of Novel Polyampholyte Hydrogel, 48th SPSJ Hokkaido Branch Winter Meeting, 38, **2014**.

**Invited Talk: (4)**

4. Waste to Energy in Supercapacitor Devices, *International Conference on Environmental Protection for Sustainable Development (ICEPSD-2022)*, Dhaka, Bangladesh
3. Adhesion Gain by Fibrous Skeleton Learned by Imitation of Fish Suction Pad, *First International Symposium on Advanced Soft Matter 2016*, Global Station for Soft Matter (GI-CoRE), Hokkaido University, Japan.
2. Developing Extremely Tough Soft Composites, *First International Symposium on Advanced Soft Matter 2016, Global Station for Soft Matter (GI-CoRE)*, Hokkaido University, Japan.
1. Biomedical Adhesive from Polyampholyte Hydrogels, *2nd International Conference on Smart Engineering 2014 (Smasys2014)*, Yamagata University, Yamagata, Japan.

**Oral Presentations: (16)**

16. A. H. Reaz, **C. K. Roy**, M. M. Hosen, S. H. Firoz, Modification of rGO-$MnO_2$ with $Fe_3O_4$ for the Enhancement of Electrochemical Capacitive Performance, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*
15. M. N. Mojumder, A. H. Reaz, M. Moniruzzaman, S. H. Firoz, A. Chowdhury, **C. K. Roy**, Modification of Activated Carbon Materials by Ionic Liquid for Electrochemical Supercapacitor Applications, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*
14. M. Moniruzzaman, A. H. Reaz, M. N. Mojumder, **C. K. Roy**, S. H. Firoz, A. Chowdhury, Effects of Binders for Supercapacitor Performance, *International Conference on Recent Advances in Chemistry 2020, Jagannath University, Dhaka, Bangladesh*
13. M. M. Uddin, M. S. Azam, **C. K. Roy**, Fabrication of Hydrogel Using Carbon Spheres Crosslinker, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*
12. H. Roy, M. A. Hossain, **C. K. Roy**, S. H. Firoz, Design of Functionalized Nanocrystalline Cellulose-Poly(acrylic acid) Based Stimuli Hydrogel For Removal of Dyes and Heavy Metals, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*

11. S. Sharmin, S. Sultana, **C. K. Roy**, Thiadiazol Compounds as Corrosion Inhibitors of Carbon Steel, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*
10. M. J. Akthar, **C. K. Roy**, Investigation of the Effects of Water Structure Modifiers in Aqueous Solution for Electroanalysis of Metal Ions, *International Conference on Recent Advances in Chemistry 2020, Jagannath University, Dhaka, Bangladesh*
9. M. M. Islam, M. N. Mojumder, **C. K. Roy**, Sensitivity Enhancement of Ionic Liquid Modified Carbon Paste Electrodes for Electroanalysis of Metal Ions, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*
8. S. Sultana, **C. K. Roy**, $BMIMPF_6$ Ionic Liquid as Corrosion Inhibitors for Carbon Steel, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*
7. S. Sultana, **C. K. Roy**, Hydrophobic Ionic Liquid as Corrosion Inhibitor for Carbon Steel, *International Conference on Environmental Solution and Sustainable Development (ICESSD) **2019**, Dhaka University, Bangladesh*
6. **C. K. Roy**, G. Shinohara, D. R. King, T. L. Sun, J. P. Gong, T. Kurokawa, Adhesion Gain by Fibrous Skeleton Based on Fish Suction Pad, *9th International Symposium on Nature-Inspired Technology **2016**, Daejeon, Korea.*
5. **C. K. Roy**, H. L. Guo, T. L. Sun, A. B. Ihsan, T. Kurokawa, M. Takahata, T. Nonoyama, T. Nakajima, J. P. Gong, Bioadhesion through Self-adjustability of Polyampholyte Hydrogels, *3rd International Life-Science Symposium (3rdILSS, 2015), Hokkaido University, Japan.*
4. **C. K. Roy**, A. B. Ihsan, T. L. Sun, T. Nonoyama, T. Nakajima, T. Kurokawa, J. P. Gong, Polyampholyte Hydrogel for Topical Skin Adhesive, *5th World Congress on Adhesion and Related Phenomena **2014** (WCARP-V), Nara, Japan.*
1. **C. K. Roy**, A. B. Ihsan, T. L. Sun, T. Nonoyama, T. Nakajima, T. Kurokawa, J.P. Gong, Synthetic Polyampholyte Hydrogel as Adhesive for Soft and Wet Materials, *2nd International Life-Science Symposium (ILSS **2014**), Hokkaido University, Hokkaido, Japan.*
2. **C. K. Roy**, M. A. H. Susan, Electrochemistry of Ferrocene Derivatives and their Inclusion Complex with Cyclodextrins in Aqueous Solution, *34th Annual Conference of Bangladesh Chemical Society **2011**, University of Dhaka, Bangladesh.*
1. **C. K. Roy**, M. A. H. Susan, Supramolecular Host-guest Complex of Amphiphilic Species in Aqueous Solution, *Kathmandu Symposia on Advanced Materials **2012**, Kathmandu, Nepal.*

**Poster Presentation: (6)**

6. M. R. Hasan, A. Chowdhury, A. J. S. Ahammad, **C. K. Roy**, S. H. Firoz, M. A. Aziz, Fabrication of Electrochemical Nitrite Sensor Using Platinum Coated Jute Carbon, *International Conference on Recent Advances in Chemistry **2020**, Jagannath University, Dhaka, Bangladesh*
5. M. A. Hoaasin, M. M. Rahman, **C. K. Roy**, S. H. Firoz, Synthesis of a functionalized cellulose-poly(acrylic acid) based hydrogel with high swelling ratio, *39th Annual Conference of Bangladesh Chemical Society **2018**, Dhaka, Bangladesh*
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