IGCRT Publications

2024

Glass Research Division:

1. Md. Kawcher Alam, Md. Sahadat Hossain,* Mofassel Hossen Akash, Abdullah Al Miad, Muhammad Shahriar Bashar, Newaz Mohammed Bahadur, Samina Ahmed, Morphological modification of ZnO using hydrothermal technique and organic modifiers, *Nano-Structures & Nano-Objects*, (2024 accepted), 2025, 41, 101436. (Elsevier, Q1, I.F. 4.39).
2. Md. Kawsar, Md. Sahadat Hossain, Sumaiya Akter, Md. Farhad Ali, Newaz Mohammed Bahadur, Samina Ahmed,. Synthesis and Characterization of Nano-Crystallite Triple Super Phosphate (TSP) from Marine Mollusk Waste: Babylonia japonica, Oliva sayana, and Conasprella bermudensis, *Chemistry Open*, 2024, 13, e202400174. doi.org/10.1002/open.202400174 (online: September 9, 2024) (Willey, Q2, I.F. 2.5).
3. Md. Kawcher Alam, Md. Sahadat Hossain,* Md. Anayet Ullah, Newaz Mohammed Bahadur, Samina Ahmed,* Utilization of marine snails for the sustainable synthesis and crystallographic characterization of nano-crystallite hydroxyapatite, *Hybrid Advances*, 2024, 7, 100308. https://doi.org/10.1016/j.hybadv.2024.100308 (Accepted 4 October 2024, on line 5 Oct).
4. Nafisa Tabassum, Raamisa Anjum, Papia Haque,* Md. Sahadat Hossain, Mashrafi Bin Mobarak, Md. Saiful Quddus, Fariha Chowdhury, Lutfor Rahman, Dipa Islam, Samina Ahmed*, Monika Mahmud,. Ag–Co ferrite-based magnetic polymeric composite film: a breakthrough in cationic dye remediation for sustainable environment, *RSC Adv*., 2024, 14, 36557. DOI: 10.1039/d4ra06315e (Accepted 28 Oct 2024). (RSC journal Q1, I.F. 3.9).
5. Md. Sahadat Hossain, Md. Kawcher Alam, Sumaya Tabassum, Samina Ahmed, Synthesis of Mg-doped hydroxyapatite for enhanced photocatalytic degradation of Congo Red dye: A crystallographic characterization, *Nanotechnology for Environmental Engineering*, 2024, 9:783–799. https://doi.org/10.1007/s41204-024-00395-4 **(Full paper available, accepted 6 oct and published 7 Nov)**
6. Md. Kawsar, Md. Sahadat Hossain,* Fahim Foysal Munshi, Md. Farhad Ali, Newaz Mohammed Bahadur, Samina Ahmed,* Crystallographic Characterization of Gypsum Synthesized from Marine Wastes (*Babylonia japonica, Olive sayana, and Conasprella bermudensis*), *Results in Materials*, 2024, 24, 100633. doi.org/10.1016/j.rinma.2024.100633. (Accepted 8 November 2024). (Full paper available)
7. Md. Kawsar, Md. Sahadat Hossain,* Sumaiya Akter, Newaz Mohammed Bahadur, Samina Ahmed, Synthesis and characterization of nano Plaster of Paris from *Babylonia japonica, Oliva sayana, and Conasprella bermudensis*, *Cleaner Waste Systems*, 2024, 9,100189. https://doi.org/10.1016/j.clwas.2024.100189. (Accepted 22 November 2024, Available online 26 November 2024). (Full paper available)

8. Sumaya Tabassum, Md. Sahadat Hossain,* Dipa Islam, Samina Ahmed, Synthesis of nano-crystallite β-Bi_2O_3 as a photocatalyst through solid-state method for a sturdy treatment of pharmaceutical waste, *Results in Surfaces and Interfaces*, 2025, 18, 100371. https://doi.org/10.1016/j.rsurfi.2024.100371 (Available online 4 December 2024). (Full paper available)
9. Md. Sahadat Hossain, Sakabe Tarannum, Md. Anayet Ullah, Md. Najem Uddin, Newaz Mohammed Bahadur, Samina Ahmed, Synthesis of different types of calcium phosphates for the drug loading and releasing applications, *Int. J Appl Ceram Technol*. 2024, e15025. **(Accepted 2 Dec 2024) (Full text not available)**
10. Sumaya Tabassum, Md. Sahadat Hossain, Md. Mazedul Haque Sachchu, Md. Najem Uddin, Samina Ahmed, Crystallographic, antimicrobial, and photocatalytic activity of the Moringa oleifera leaf extract-based nano-AgO, *New Journal of Chemistry*, **2024 (Full text not available)**
11. Sumaya Tabassum, Md. Sahadat Hossain,* Md. Mazedul Haque Sachchu, Md. Najem Uddin, Samina Ahmed,. Green synthesis of nano-Ag_2O using Moringa oleifera leaves for efficient photocatalytic and antimicrobial applications, *New Journal of Chemistry*, 2024 (Full text not available)
12. Md. Sahadat Hossain, Shifa Sarkar, Samina Ahmed, Crystallographic characterization of Ag-doping in nano-crystallite hydroxyapatite and evaluation of photocatalytic activity of organic pollutants, *Int J Ceramic Eng Sci*. 2025,7, e10250 **(Accepted: 18 December 2024)**
13. Mobarak, M.B., Chowdhury, F., Uddin, M.N., Hossain, M.S., Akhtar, U.S., Tanvir, N.I., Shaikh, M.A.A., Ahmed, S., 2024. Poultry waste derived in situ drug loaded nano-hydroxyapatite bio-ceramic material for osteomyelitis treatment: in vitro drug release and biocompatibility studies. *Materials Advances*, 5(24), pp.9716-9730.
14. Hossain, M.S., Hossain, M.S., Ahmed, S. Mobarak, M.B., 2024. Characterization and adsorption performance of nano-hydroxyapatite synthesized from Conus litteratus waste seashells for Congo red dye removal. *RSC advances*, 14(52), pp.38560-38577.
15. Mobarak, M.B., Chowdhury, F. Ahmed, S., 2024. Preparation and characterization of highly crystalline hydroxyapatite (HAp) from the scales of an anadromous fish (Tenualosa ilisha): a comparative study with the freshwater fish scale (Labeo rohita) derived HAp. *RSC advances*, 14(54), pp.39874-39889.
16. Md. Sahadat Hossain, Sumaya Tabassum, Sanjida Khan, Dipa Islam, Samina Ahmed, Extraction of carbon and preparation of activated carbon from waste dry cell battery, *Carbon Trends*, 2024, 17, 100406. https://doi.org/10.1016/j.cartre.2024.100406 (I have added in this list).
17. Md. Kawcher Alam, Md. Sahadat Hossain, Newaz Mohammed Bahadur, Samina Ahmed*, Fabrication of composite scaffold using hydroxyapatite, epoxy resin and silica for load-bearing application, Materials Advances, 2024, DOI: 10.1039/d4ma00603h. (RSC, Q1, I.F. 5.2).

18. Md. Kawcher Alam, Md. Sahadat Hossain, Mohammad Saimon Islam, Newaz Mohammed Bahadur, Samina Ahmed*, Sustainable synthesis and characterization of nano triple superphosphate from solid marine wastes, Materials Advances, 2024, DOI: 10.1039/d4ma00513a. (RSC, Q1, I.F. 5.2).
19. Sumaya Tabassum, Md. Sahadat Hossain, Mashrafi Bin Mobarak, Farah Nigar, Samina Ahmed*, Synthesis of nano calcium silicates from waste calcite and aragonite phase for efficient adsorptive removal of industrial organic pollutants, Arabian Journal of Chemistry, 2024, 17, 105901. https://doi.org/10.1016/j.arabjc.2024.105901. (Elsevier Q1, I.F. 5.3).
20. Md. Kawsar, Md. Sahadat Hossain, Sumaya Tabassum, Newaz Mohammed Bahadur, and Samina Ahmed*, Different solvents and organic modifiers for the controlling of crystallographic parameters in nano-crystallite hydroxyapatite for amplification of photocatalytic activity, Nanoscale Advances, 2024, 6, 2682. (RSC journal Q1, I.F. 4.6). DOI: 10.1039/d3na01122d.
21. Sakabe Tarannuma, Md. Sahadat Hossain, Muhammad Shahriar Bashar, Newaz Mohammed Bahadur, Samina Ahmed,* Amplification of photocatalytic degradation of antibiotics (amoxicillin, ciprofloxacin) by sodium doping in nano-crystallite hydroxyapatite, RSC Advances, April 2024, 14,12386. DOI: 10.1039/d4ra00126e (RSC journal Q1, I.F. 3.9).
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23. Md. Kawcher Alam, Md. Sahadat Hossain, Md. Kawsar, Newaz Mohammed Bahadur, Samina Ahmed*, Synthesis of nano-hydroxyapatite using emulsion, pyrolysis, combustion, and sonochemical methods and biogenic sources: A review, RSC Advances, 2024, 14, 3548–3559. DOI: 10.1039/d3ra07559a. (RSC journal Q1, I.F. 3.9)
24. Abdullah Al Miad, Shassatha Paul Saikat, Md. Kawcher Alam, Md. Sahadat Hossain, Newaz Mohammed Bahadur, Samina Ahmed*,. Metal oxides-based photocatalyst for the efficient degradation of organic pollutants for a sustainable environment: a review, Nanoscale Advances, Accepted 14 August 2024. (RSC, Q1, I.F. 4.6).
25. Md. Kawsar, Md. Sahadat Hossain, Sumaya Tabassum, Dipa Islam, Newaz Mohammed Bahadur, Samina Ahmed*,. Modification of crystal structure of nano-hydroxyapatite using organic modifiers and hydrothermal technique, RSC Advances, Accepted, August 2024, (RSC journal Q1, I.F. 3.9).
26. Md. Kawcher Alam, Md. Sahadat Hossain, Md. Anisur Rahman Dayan, Newaz Mohammed Bahadur, Md. Aftab Ali Shaikh, Samina Ahmed*,. Fabrication and characterization of a bioscaffold using hydroxyapatite and unsaturated polyester resin, ACS Omega, March 2024, https://doi.org/10.1021/acsomega.3c09599. (ACS journal Q1, I.F. 4.1)

27. Md. Kawsar, Md. Sahadat Hossain, Md. Kawcher Alam, Newaz Mohammed Bahadur, Md. Aftab Ali Shaikh, Samina Ahmed*,. Synthesis of pure and doped nano-calcium phosphates using different conventional methods for biomedical applications: A review, Journal of Materials Chemistry B, March 2024. DOI: 10.1039/d3tb02846a. (RSC journal Q1, I.F. 7.0)
28. Nasima Akhter, Samina Ahmed, A M Sarwaruddin Chowdhury, Papia Haque,. PLA blended gelatin based nanofibrous mats with enhanced hydrophobicity for soft tissue regeneration, Journal of Medical Engineering & Technology (IJMT), Published 17 July 2024. (Taylor & Francis journal). DOI:10.1080/03091902.2024.2379840.
29. Supanna Malek Tuntun, Md Sahadat Hossain, Sumaiya Akter, Newaz Mohammed Bahadur, Md Saiful Alam, Samina Ahmed*, Synthesis of nano crystallite cellulose and chitosan from waste natural source for the adsorption of cationic and anionic dyes in aqueous medium, Hybrid Advances, 2024, 6, 100270, https://doi.org/10.1016/j.hybadv.2024.100270.
30. Md. Kawsar, Md. Sahadat Hossain, Sumaiya Akter, Md. Farhad Ali, Newaz Mohammed Bahadur, Samina Ahmed*, Synthesis and Characterization of Nano-Crystallite Triple Super Phosphate (TSP) from Marine Mollusk Waste: Babylonia japonica, Oliva sayana, and Conasprella bermudensis, Chemistry Open, Accepted, July 2024.
31. Nasima Akhter, Samina Ahmed, A M Sarwaruddin Chowdhury, Shafi M Tareq, Abu Ashfaqur Sajib, M. S. Bashar, Papia Haque,. Effect of core-sheath bi-polymeric scaffolds fabricated from acid-soluble collagen and poly(lactic Acid) derivatives on wound healing, Journal of Applied Polymer Science, 2024, e55636. DOI: 10.1002/app.55636(Wiley Q2, I.F. 3.1)
32. Md. Kawcher Alam, Md. Sahadat Hossain, Newaz Mohammed Bahadur, Samina Ahmed*,. A comparative study in estimating of crystallite sizes of synthesized and natural hydroxyapatites using Scherrer Method, Williamson-Hall model, Size-Strain Plot and Halder-Wagner Method, J. of Mol. Struct, 2024, 1306,137820. https://doi.org/10.1016/j.molstruc.2024.137820. (Elsevier, Q2, I.F. 4.0).
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34. Md. Kawsar, Md. Sahadat Hossain, Newaz Mohammed Bahadur, Samina Ahmed*, Synthesis of nano-crystallite hydroxyapatites in different media and a comparative study for estimation of crystallite size using Scherrer method, Halder-Wagner method Size-Strain plot, and Williamson-Hall model, Heliyon, 2024, 10, e25347 2024. https://doi.org/10.1016/j.heliyon.2024.e25347. (Cell press Q1, I.F. 4.0)
35. Md.Sahadat Hossain, Sakabe Tarannum, Md.Kawsar, Newaz Mohammed Bahadur, Samina Ahmed*, Synthesis of pure and Cd-doped hydroxyapatite for the photo-catalytic degradation of Amoxicillin and Ciprofloxacin: Crystallographic characterization using

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36. Md. Farhad Ali, Md. Sahadat Hossain, Samina Ahmed, A.M. Sarwaruddin Chowdhury, A study of biodegradation, water uptake and thickness swelling of animal fibers reinforced unsaturated polyester resin composites, Results in Chemistry, 2024, 8, 101576. https://doi.org/10.1016/j.rechem.2024.101576. (Elsevier Q3, I.F. 2.4)
37. Nusrat Jahan Tamanna, Md. Sahadat Hossain, Newaz Mohammed Bahadur, Samina Ahmed*, Green synthesis of Ag_2O & facile synthesis of ZnO and characterization using FTIR, bandgap energy & XRD (Scherrer equation, Williamson-Hall, size-train plot, Monshi- Scherrer model), Results in Chemistry, 2024, 7, 101313. https://doi.org/10.1016/j.rechem.2024.101313. (Elsevier Q3, I.F. 2.4).
38. Nusrat Jahan Tamanna, Md. Sahadat Hossain*, Sumaya Tabassum, Newaz Mohammed Bahadur,Samina Ahmed,* Easy and green synthesis of nano-ZnO and nano-TiO for efficient photocatalytic degradation of organic pollutants, Heliyon, Acepted, August 2024.
39. Md. Farhad Ali, Md. Sahadat Hossain, Israt Jahan Lithi, Samina Ahmed, A.M. Sarwaruddin Chowdhury, Fabrication and characterization of sustainable composites from animal fibers reinforced unsaturated polyester resin, Heliyon, 2024, 10, e33441. https://doi.org/10.1016/j.heliyon.2024.e33441. (Elsevier, Q1, I.F. 4.0).
40. Md. Lawshan Habib*, Sanjana Afrin Disha, Md. Sahadat Hossain, Md. Najem Uddin, Samina Ahmed,* Enhancement of antimicrobial properties by metals doping in nano-crystalline hydroxyapatite for efficient biomedical applications, Heliyon, 2024, 10, e23845. (Elsevier, Q1, I.F. 4.0).

Refractory and Structural ceramic Research division:

41. Akhi, A. A., Hasan, A., Saha, N., Howlader, S., Bhattacharjee, S., Dey, K., ... Akhtar, U. S. (2024). Ophiorrhiza mungos-mediated silver nanoparticles as effective and reusable adsorbents for the removal of methylene blue from water. *ACS Omega, 9*(4), 4324–4338.

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Inorganic Pigment and Chemical Research Division:

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Ceramic raw materials and Ceramic materials Testing Division:

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59. Biswas, B., Rahman, M. L., Ahmed, M. F., Sharmin, N. (2024). Extraction of gamma iron oxide (γ-Fe2O3) nanoparticles from waste can: Structure, morphology and magnetic properties. Heliyon, 10(10), e30810. https://doi.org/10.1016/j.heliyon.2024.e30810
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Ceramic Research division:

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Enamel Research Division:

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