RESUME OF



Dr. Md, Abdus Salam
Senior Principal Engineer (**Grade-3**)
Bangladesh Council of Scientific and Industrial Research (BCSIR)
Divisional Head, Hydrogen Energy Laboratory
BCSIR Laboratories Chittagong.

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Identity

Holder of a Bangladesh Government passport, Government of the People's Republic of Bangladesh
Passport No: E00113702

Institutional Founding and Organizational Leadership

Founding Director of Hydrogen Energy Laboratory, BCSIR, Bangladesh. Dr. Salam successfully studied project feasibility, planned & prepare research project proposal and established network with funding organizations to get the approval and implemented an annual development project (ADP/2018-2023) successfully to build a pilot-scale infrastructure for hydrogen production, storage, and distribution for the 1st time in Bangladesh and to add a new energy vector to Bangladesh's energy mix along with a good numbers of development & research projects in home and abroad. Dr Salam plays leadership role in research project management and way forward to meet the organizational goal.

Educational Qualifications

Postdoc in Chemical Engineering, Faculty of Engineering, Universiti Teknologi Petronas, Malaysia, 2014-2015
PhD in Chemical Engineering, Faculty of Engineering, Universiti Teknologi Petronas, Malaysia, 2014-2015
M.Sc. in Physics, National University, BD, 1999
B.Sc. (Honors) in Physics, National University, BD, 1998
H.S.C (Science Group), Cox'sbazar Government College, Comilla Board, 1991
S.S.C (Science Group), Cox'sbazar Preparatory High School, Comilla Board, 1989

Professional Experiences

1. **Senior Principal Engineer & Head,** Metallurgy Research Division, Institute of Mining, Mineralogy & Metallurgy (IMMM),BCSIR, 05.02.2025 to 19.08.2026
2. **Senior Principal Engineer & In-Charge,** Hydrogen Energy Laboratory, BCSIR Laboratories Chittagong**,** 30.06.2023 to 04.02.2025
3. **Project Director of Annual Development Project (ADP) [Addl. duty],** Establishment of hydrogen energy laboratory-Project, 13.11.2018 to 30.12.2023.
4. **Senior Principal Engineer (Grade-3),** Bangladesh Council of Scientific and Industrial Research (BCSIR), 30.06.2020 to 29.06.2023
5. **Senior Scientific Officer,** Bangladesh Council of Scientific and Industrial Research (BCSIR), 24.07.2017 to 29.06.2020
6. **Scientific Officer,** Bangladesh Council of Scientific and Industrial Research (BCSIR), 28.03.2011 to 23.07.2017
7. Lecturer, Chemical Engineering department, Universiti Teknologi Petronas, Malaysia, 10.07.2014 to 10.09.2016
8. **Research Physicist**, Bangladesh Council of Scientific and Industrial Research (BCSIR), 26.07.2006 to 27.03.2011
9. **Lecturer**, Badarkhali Degree College, Coxsbazar, 20.11.2004 to 17.06.2006
10. **Lecturer**, Hoanak Degree College, Moheshkhai, Coxsbazar, 01.06.2001 to 19.11.2004

Administrative Experiences (2018-2026)

- **Project management, Fund management strategies, Train academic and researcher to prepare research proposal.**

● Director, Establishment of Hydrogen Energy project (Annual development project), Ministry of Science and Technology, Bangladesh, 18.08. 2018-30.12. 2023
● In-Charge, Hydrogen Energy Laboratory, Bangladesh Council of Scientific and Industrial Research (BCSIR), 01.01. 2024 - 02.04.02.2025
● Head, Metallurgy Division, Institute of Mining, Mineralogy and Metallurgy (IMMM), BCSIR, 2025.02.05 to 19.08.2026
● In-Charge, Hydrogen Energy Laboratory, Bangladesh Council of Scientific and Industrial Research (BCSIR), 20.08. 2026 - Current

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Scholarship, Fellowship & Awards:

● Postdoctoral Research Fellowship by Fundamental Research Grant Scheme (FRGS), Malaysia, 2014-15
● PhD Scholarship by Y-UTP, Malaysian PhD Program, 2011
● Graduate Assistantship (GA) by the Chemical Engineering department, Universiti Teknologi Petronas, Malaysia, 2012-2014
● Research Assistantship (RA) by the Faculty of Science, University of Malaya, Malaysia, 2009-10

Teaching & Research Interest

Teaching:

- Engineering Thermodynamics ■ Quantum Mechanics ■ Separation Processes
- Fluid Mechanics & Transport Phenomena ■ Unit Operation (Heat and Mass Transfer)
- Electricity and Magnetism ■ Introduction of Materials Science

Research:

- Energy Storage (Hydrogen Storage), ■ Hydrogen Production
- Hydrogen fuel cell (FC) ■ Integration of electrolyzers with renewable energies ■ Design and develop functional materials as catalysts, for energy storage and conversion.

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Teaching and Research Institutions:

- Bangladesh Council of Scientific and Industrial Research (BCSIR)
- Universiti Teknologi Petronas, Malaysia
- University of Malaya, Malaysia
- University of Birmingham, UK
- Graz University, Austria
- NOW, GmbH, NIP Germany
- BIOENERGY 2020+ GmbH, Germany
- University of Chittagong, Chittagong
- Dhaka University, Dhaka
- Chittagong University of Science and Technology (CUET)
- Noakhali Science and Technology University
- Badarkhali Degree College, Coxsbazar
- Hoanak Degree College, Coxsbazar.

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Supervision:

Supervised more than 100 students at UG (Hons) including PG (MS-10, PhD-3) level in home and abroad.

Membership in Professional bodies

- Associate Member: Institution of Chemical Engineers **(IChemE)**
  Membership No: 99970498, 2014
- Affiliate Member: The Institution of Engineers, Malaysia **(MyIEM)**
  Membership No: 86336, 2014
- Life-time member: Bangladesh Physical Society (BPS), Dhaka
  Membership No: LM J0012, 2007

Services in Departmental Committees (Universities/Govt. Organizations)

■ Member Secretary, Project Implementation Committee, Ministry of Science and Technology, Bangladesh (2018-2023)
■ Member Secretary, Project Steering Committee member, Ministry of Science and Technology, Bangladesh (2018-2023)
■ Member Secretary, Product Specification and **Purchase Committee**, Ministry of Science and Technology, Bangladesh (2018-2023)
■ Chair, Project Completion Report, Annual Development Project (ADP), 2023
■ Chair and Member Secretary, **Tender Evaluation (OTM, E-GP, RFQ) Committee** of ADP and R&D projects, BCSIR & MoST, BD (2018-2026)
■ Member Secretary, Innovation Committee, BCSIR (2016-2019)
■ Final Year Project evaluation committee, Chemical Eng. Department, Universiti Teknologi . Petronas, Malaysia (2015-2016)
■ Internship Evaluation Committee, Chemical Eng. Department, Universiti Teknologi Petronas, Malaysia. (2015-2016)
■ Departmental Seminar & Conference Organizing Committee, Chemical Eng. Department, Universiti Teknologi Petronas, Malaysia (2016)
■ Member, Departmental Academic Committee, Department of Chemical Engineering, Universiti Teknologi Petronas, Malaysia.(2015-2016)
■ Member, MS and Ph.D. Defense Committee, Department of Chemical Engineering, Universiti Teknologi Petronas, Malaysia.(2015-2016)
■ Member "Global Summit of Process safety 2015", Malaysia

Main Duties & Responsibilities:

During my teaching and research career, my common activities included-

■ Plan a Development and research project, Prepare BOQ and yearly budget & research proposal. Purchase and Procure as per yearly budget through tender (e-gp, OTM and LTM) process, Fund release from GoB/funding bodies, Audit management, prepare academic and researcher for better proposal preparation etc.
■ Representing the university or BCSIR or Bangladesh as Keynote Speaker, Guest speaker, and Resource Person in home and abroad;
■ Teaching students using active learning, Flipped Class room and effective education delivery methods.
■ Planning, developing and implementing a curriculum as approved by the Department of the Chemical Engineering;
■ Preparing, administering and marking student assignments and examinations;
■ Advising students regarding course and academic matters;
■ supervising graduate students (B.Sc., M.Sc., & Ph.D.);
■ Conducting research studies and publishing findings.
■ Analyzing and evaluating subject information to determine course requirements;
■ Organizing and coordinating curriculum and course schedules;
■ Advising students regarding academic requirements and options;
■ Serving on committees concerned with curriculum revision, academic planning, degree Requirements, faculty matters;

- participating in university or research and Government organization's governance;
- Participation various conferences and professional development seminars;
- Provide service and support to the stakeholders, license the developed products and processes to the entrepreneurs.
- Deliver lectures. Research and development proposal preparation, budget preparation and grant application. Provide analytical services and consultation.
- Establish research network with home and abroad, regular contact with stakeholders, Submit project completion report as per the rules of grants, budget, and management.

Member of Editorial Boards/Reviewer

- International Journal of Hydrogen energy,
- ACS Applied Nano-materials,
- Environmental Technology
- Advanced Engineering materials
- Chemical Engineering research and design
- Journal of Catalysis
- ICPEAM 2016 Reviewer

Networking (International & National)

- Birmingham Centre for Fuel Cell and Hydrogen Research, University of Birmingham UK
- Centre of hydrogen Research, Graz University of Technology, Austria
- NOW GmbH, Germany -National Innovation Programme for Hydrogen and Fuel Cell Technology (NIP)
- Millennium Reign Energy, USA- Electrolyzer Manufacturer
- Greenlight Innovation-Hydrogen Fuel cell test station manufacturer for R&D.
- KEP Technologies, France
- Pragma Industries, Hydrogen storage tank fabricator, France
- CUET, RUET, KUET, Dhaka University, BUET, NUST, USTC, Islamic University, MIST
- Bangladesh Energy and Power Research Council (BEPRC), Bangladesh Power Management Institute (BPMI), Sustainable and Renewable Energy development Authority (SREDA)
- Bangladesh Energy & Power Research Council (BEPRC), Bangladesh Petroleum Institute (BPI), Power Cell, BPDB and RPGC,and Petrobangla.

Citation (Google Scholar & Scopus)

[https://scholar.google.com/citations?user=sc5Rk74AAAAJ&hl=en]

	All	Since 2021	Scopus (31 Nos)
Citations	2124	1478	750
h-index	26	22	18
i10-index	54	38	30

Research Publication (Journal, Books & Book Chapters)

1. Md Abdus Salam* Robert Steinberger-Wilckensc, Hydrogen Production performances of Biomass Gasifier Integrated Smart Hydrogen Production Pilot Plant of BCSIR: A Step towards Sustainable Green Fuel. International Journal of Hydrogen Energy, 230, 2026, 154800 https://doi.org/10.1016/j.ijhydene.2026.154800

2. Redoy Masum Meraz, Asfia Ahmed Khan, Tafsirul Hassan, Md. Mizanur Rahman, **Md. Abdus Salam**, Optimization of syngas production from co-gasification of corn cob, coconut coir, and coconut shell: A computational study, Next Research, Volume 2, Issue 4, December 2025, 101042, https://doi.org/10.1016/j.nexres.2025.101042

3. Md Abdus Salam* Robert Steinberger-Wilckensc, Hydrogen Production performances of Biomass Gasifier Integrated Smart Hydrogen Production Pilot Plant of BCSIR: A Step towards Sustainable Green Fuel. International Journal of Hydrogen Energy, Submitted (5th November 2025) and Under Review

4. Md. Abdus Salam, Aftab Ali shaikh, kawsar Ahmed, Mirza Nusrat Sweety, 'Strategic Integration of National grid or Solar PV power with the On-site Hydrogen Vehicle Refueling Station (HRS) at the Hydrogen Energy laboratory, BCSIR, Bangladesh.' International Journal of Hydrogen Energy Volume 86, 11 October 2024, 153-165, https://doi.org/10.1016/j.ijhydene.2024.08.343

5. Mirza Nusrat Sweety, Md. Abdus Salam, Proton conductivity performance and its correlation with physio-chemical properties of Proton Exchange Membrane (PEM), Chinese Journal of Chemical Engineering, Volume 74, October 2024, Pages 100-116, Doi; https://doi.org/10.1016/j.cjche.2024.06.011

6. Kawsar Ahmed; Md Abdus Salam,; Shaikh, Md. Aftab Ali; Murugaiah, Dhinesh kumar; Shahgaldi, Samaneh; Sweety, Mirza, A Review on Most Recent Development of Electrode Structure for Proton Exchange Membrane Fuel Cell Application with Upcoming Prospects, ACS Applied Energy Materials, 11 sept. 2024, 7, 20, 9052–9083, https://doi.org/10.1021/acsaem.4c01528

7. Md. Abdus Salam, Marufuzzaman, Catalytic Activity of Nickel Doped Rutile in Oxygen Reduction Reaction (ORR) of Proton Exchange Membrane Fuel Cell (PEMFC): A Potential Nuclear Magnetic Resonance (NMR) based Investigation, Iranian Journal of Catalysis 2024,14(4),142446 (1-10), https://doi.org/10.57647/j.ijc.2024.1404.46

8. Md Abdus Salam, Aftab Ali shaikh, Kawsar Ahmed, Green hydrogen based power generation prospect for sustainable development of Bangladesh using PEMFC and hydrogen gas turbine. Energy Reports (SCIE & SCOPUS, 9, 2023, 3406-3416, doi.org/10.1016/j.egyr.2023.02.024

9. Md Abdus Salam, Md.Tauhidul Islam, Kawsar Ahmed, Bawadi Abdullah, Potential Feature of Combined AB 5 - Type Metal Hydride Tank and PEMFC as a Safer System for Hydrogen Fueling in Bangladesh, Frontier in Energy Research 9; 766270, 2021; DOI: 10.3389/fenrg.2021.766270, INDEXED by SCOPUS, SCIE

10. Ali Awad, Md Abdus Salam, Bawadi Abdullah, Synthesis, Characterization and Performance Evaluation of Promoted Ni-based catalyst for Thermo-catalytic Decomposition of Methane, Chemistry Select 5(37):11471-11482, DOI: 10.1002/slct.202001998, Indexed by Scopus, SCIE,

11. Dai-Viet N Vo and Bawadi Abdullah A Awad, Md Abdus Salam**,** Hydrogen production via thermo- catalytic decomposition of methane over Ni-Cu-Pd/Al_2 O_3 catalysts, IOP Materials Science and Engineering,736, 042006, doi:10.1088/1757-899X/736/4/042006, INDEXED by ISI, SCOPUS

12. Md shehan habib, Paroma arefin, Md abdus salam, kawsar Ahmed, Proton exchange membrane fuel cell (PEMFC) durability factors, Challenges, and future prospectives: A detailed review, Col. 18, No. (2) 2021, 217-234

13. Md Sahab Uddin, Md Abdus Salam, Md Sehan Habib, Kawsar Ahmed, Various Material development strategies for suitable catalyst of Photo Catalytic water splitting to green fuel H2: A critical review, Vol.18, No.(2) 2021, 108-142

14. Md Abdus Salam , Hossain T, Papri N., Ahmed K, Habib M S., Uddin M S., Wilckens R.S, Hydrogen Production Performances via Steam Reforming over Hydrotalcite Derived Catalyst: A Sustainable Energy Production review,

Advances in Chemical Engineering and Science, 10, 259-296, INDEXED by ESCI DOI: 10.4236/aces.2020.104018, IF= 0.130

15. Md Abdus Salam, Md Shehan Habib, Paroma arefin, Kawsar Ahmed, Effect of Temperature on the Performance Factors and Durability of Proton Exchange Membrane of Hydrogen Fuel Cell: A Narrative Review, Material science research India, vol.17, No(2) 2020 179-191

16. Ali Awad, Nurliyana Masiran, M Abdus Salam, Dai-Viet N Vo, Bawadi Abdullah, Non-oxidative decomposition of methane/methanol mixture over mesoporous Ni-Cu/Al2O3 Co-doped catalysts, International Journal of Hydrogen Energy ,44(37), 20889-20899 https://doi.org/10.1016/j.ijhydene.2018.04.233, Indexed by SCIE, SCOPUS

17. M Abdus Salam**,** Kawsar Ahmed, Tareq Hossain, Nazma Akter, A review of hydrogen production via biomass gasification and its prospect in Bangladesh, International Journal of hydrogen energy, 43 (32) 2018,14944-14973, https://doi.org/10.1016/j.ijhydene.2018.06.043, INDEXED by SCOPUS, SCIE

18. Anuar Fauad' Syed Muhammad· Nurliyana Masiran, Md Abdus Salam, Bawadi Abdullah, Recent advances in cleaner hydrogen productions via thermo-catalytic decomposition of methane: Admixture with hydrocarbon., International Journal of Hydrogen Energy, 11 October 2018, Volume 43, Issue 41, Pages 18713-18734. https://doi.org/10.1016/j.ijhydene.2018.08.091, INDEXED by SCOPUS, SCIE

19. U. Sikander, S. Sufiana, M. Abdus Salam, "A review of hydrotalcite based catalysts for hydrogen production systems, International Journal of Hydrogen Energy" Volume 42, Issue 31, 3 August 2017, Pages 19851-19868, https://doi.org/10.1016/j.ijhydene.2017.06.089, Indexed by SCOPUS, SCIE

20. Ali awad, Abdus salam, Bawadi abdullah, Hydrogen Production by Decomposition of Methane and Methanol Mixture over Ni-Pd/Al_2O_3, Journal of the Japan Institute of Energy , 96, 445-450（2017）DOI: 10.3775/jie.96.445, SCI INDEXED

21. M. Abdus Salam, Bawadi Abdullah "Catalysis Mechanism of Pd promoted γ-alumina in Hydrogen Production: A Density Functional Theory Study" Materials Chemistry and Physics, Volume188,15 2017, Pages 18-23, 2017, http://dx.doi.org/10.1016/j.matchemphys.2016.12.022, ISI and SCOPUS INDEXED

22. M. Abdus Salam, Bawadi Abdullah, M. Aminul Islam, Temperature programmed analysis of hydrogenation and dehydrogenation of magnesium (Mg), nickel (Ni) and aluminum (Al) containing mixed oxides, Chemical Engineering Research and Design, Volume 118, February 2017, Pages 103-111.DOI:http://dx.doi.org/10.1016/j.cherd.2016.10.039, ISI and SCOPUS INDEXED

23. M. Abdus Salam, Suriati Sufian, A DFT Study of Hydrogen Adsorption Kinetics and Thermodynamics on Mixed Oxides of $Mg_{0.5}Ni_{0.25}O_{1.13}$, Journal of Engineering and Applied Sciences,12,2017,44314436, http://medwelljournals.com/abstract/?doi=jeasci.2017.4431-4436, **IF= 0.85 ,** DOI:10.3923/jeasci.2017.4431.4436

24. M. Abdus Salam,I.M Mujtaba, Anita Ramli, bawadi Abdullah, Structural feature based computational Approach of Toxicity Prediction of Ionic liquids: Cationic and Anionic Effects on Ionic Liquids Toxicity, Journal of Molecular Liquids, 224, 363, 2016 /http://dx.doi.org/10.1016/j.molliq.2016.09.120), ISI and SCOPUS indexed

25. M Abdus Salam, Bawadi abdullah,The Effect of Co-solvent on the Solubility of a Sparingly Soluble Crystal of Benzoic Acid, Procedia Engineering (ICPEAM 2016), 16 August, 2016, DOI: 10.1016/j.proeng.2016.06.548,**SCOPUS, ISI**

26. Umair Ahmed, Suriati sufian, M Abdus Salam, Synthesis and Structural Analysis of Double layered NiMg-Al Hydrotalcite Like Catalyst, Procedia Engineering (ICPEAM 2016), 16 August, 2016, DOI: 10.3906/kim-1102-989, Indexed by Scopus

27. Nurliyana Masiran, Bawadi Abdullah, M Abdus Salam, Improvement on Coke Formation of CaONi/Al_2O_3 Catalysts in Ethylene Production Via Dehydration of Ethanol, Procedia Engineering (ICPEAM 2016), 16 August, 2016, https://doi.org/10.1016/j.proeng.2016.06.529, **ISI, SCOPUS,**

28. M Abdus Salam, A DFT study of Hydrogen adsorption kinetics and thermodynamics on mixed oxides of $Mg_{0.5}$ $Ni_{0.25}$ $Al_{0.25}$ $O_{1.13}$, IPN-IWNEST Conference, 9-10 October 2015. DOI: 10.36478/jeasci.2017.4431.4436, Indexed by Scopus

29. M. Abdus Salam, Suriati Sufian and bawadi Abdullah*, A Study of Hydrogenated Microstructure and Hydrogenation Properties Using the Density Functional Theory (DFT), Nanomaterials, 2014, pages 1-7, 2014. https://doi.org/10.1155/2014/749804

30. M. Abdus Salam*, Suriati Sufian, "Hydrogen Adsorption Capacity Investigation of Ni-Co-Al Mixed Oxides", Advanced Materials Research, 917, pp 360-364, 2014 [ISI, Scopus] doi:10.4028/www.scientific.net/AMR.917.360
31. M. Abdus Salam*, Suriati Sufian and T Murugasen, "Catalytic hydrogen adsorption of nano-crystalline hydrotalcite derived mixed oxides," Journal of Chemical Engineering Research and Design, 91, pp-26392647, December, 2013 [ISI, Scopus], DOI: 10.1016/j.cherd.2013.05.024; http://dx.doi.org/10.1016/j.cherd.2013.05.024
32. Md Abdus Salam, Hydrogen storage investigation of fixed bed of nano-crystalline Mg-Ni-Cr mixed oxides, Advance materials research ,Vol 701, (2013), 1979-183
33. M. Abdus Salam*, Suriati Sufian and T Murugasen "Characterization of nano-crystalline Mg-Ni-Al hydrotalcite derived mixed oxides as hydrogen adsorbent," Journal of Material Chemistry and Physics, 142, pp. 213-219, October,2013; Indexed by ISI,Scopus] http://dx.doi.org/10.1016/j.matchemphys.2013.07.008
34. M. Abdus Salam*, Suriati Sufian, Ye Lwin, "Hydrogen Adsorption Study on Mixed Oxides using the Density Functional Theory" Journal of Physics and Chemistry of Solids 74(4), pp.558-564, April, 2013, [ISI, Scopus] http://dx.doi.org/10.1016/j.jpcs.2012.12.004
35. M. Abdus Salam*, Suriati Sufian and T Murugasen "Hydrogen storage of a fixed bed of Nano-crystalline mixed oxides," ISRN Nanomaterials, Volume 2013,pp.1-10,January,2013,[ISI,Scopus] http://dx.doi.org/10.1155/2013/539534
36. M Abdus Salam*, Ye Lwin, Suriati Sufian, "Synthesis of Nano-structured Ni-Co-Al Hydrotalcites and Derived Mixed Oxides," Advanced Materials Research, Vol. 626, pp. 173-177, December, 2012, [ISI, Scopus]doi:10.4028/www.scientific.net/AMR.626.173
37. M Abdus Salam*, Suriati Sufian, T. Murugesan, "Hydrogen storage investigation of fixed bed of nanocrystalline Mg-Ni-Cr mixed oxides," Advanced material research, Vol. 701, 179-183, 2013, [ISI, Scopus], doi:10.4028/www.scientific.net/AMR.701.179
38. M Abdus Salam*, Ye Lwin, Suriati Sufian, " Synthesis and Characterization of Nano-structured Mixed Oxides," Applied Mechanics and Materials Vols. 446-447,pp196-200,2014, doi:10.4028/www.scientific.net/AMM.446-447.196, ISI, Scopus INDEXED
39. M Abdus Salam*, C.G. Jesudason, Keshav N. Shrivastava , M. Aminul Islam, "A structural-feature based computational approach for toxicity prediction of water-soluble arsenicals," Physics and Chemistry of Liquids,Vol.50(2), pp.173-186,March,2012, [ISI, Scopus] http://dx.dio.org/10.1080/00319104.2010.527841
40. M Abdus Salam*, "A DFT Calculation: Toxicity of Water Soluble Arsenicals," Bangladesh BJSIR.46(2),177-182, 2011; DOI: http://dx.doi.org/10.3329/bjsir.v46i2.6052
39. M. Abdus Salam*, B.P Barua, M.S.I. Aziz "Augmented space recursion method for the study of electronic states of binary alloys", Bangladesh J. Sci. Ind. Res., 44(3), pp.255-264, 2009; DOI: 10.3329/bjsir.v44i3
41. M. Abdus Salam*, Kabir ahmed, A.J.M. Morshed,"Measurement of natural and artificial radionuclides of Stevia rebaudiana bertoni extract" Bangladesh J. Sci. Ind. Res.,44(4), pp. 467-472, 2009; DOI: 10.3329/bjsir.v44i4.4600
42. Ali awad, Md Abdus Salam, Bawadi Abdullah, Thermocatalytic decomposition of methane/methanol mixture for hydrogen production: effect of nickel loading on Alumina support, AIP Conf. Proc. 1891, https://doi.org/10.1063/1.5005363
43. Md Abdus Salam, Technology and innovation conclave 1.0, organized by the Department of Scientific and Industrial Research (DSIR), Asian and Pacific Centre for Transfer of technology (APCTT), United Nations Economic and Social Commission for ASIA and the pacific (ESCAP), 24-26, September 2024
44. Md Abdus Salam, Pollution free and sustainable fuel system for Bangladesh: A mission of BCSIR, International Conference on Environmental protection for sustainable development (ICEPSD 2022), 2-4 September, 2022
45. Md Abdus Salam, On-site hydrogen refueling station (HRS) & fuel cell vehicles as an ultimate technology for smart Bangladesh.08-10 March 2024
46. Md Abdus Salam The Fourth Industrial Revolution: Towards Energy 4.0 in Bangladesh, BCSIR Congress 2022, 1-3 December, 2022
47. Md Abdus Salam, Hydrogen production via Biomass gasification and its prospect in Bangladesh, 2nd International Conference on Innovation in Engineering and technology (ICIET 2019), 23-24, 2019

Book Chapters

48. Md. Abdus Salam, Kawsar Ahmed, Marufuzzaman, 'Hydrogen Energy Conversion and Management' Chapter-8: Techno-economic prospect of green hydrogen production.1st Edition, Elsevier, Book ISBN 9780443153297

49. Md. Abdus Salam, Md. Tauhidul Islam, Nasrin Papri, Sustainable Carbon Capture-Technologies and Applications, Chapter-9: Blue/Bio-Hydrogen and Carbon, Capture 1st Edition, Imprint CRC Press, Pages 21, e-Book ISBN9781003162780.

50. **Book-** Md Abdus Salam, Ali Awad' Structural Feature Based Computational Approach of Toxicity Prediction: Anions and Cationic effect of Ionic liquids.' 2017 Lambert publication, USA.

Process/Product developed

51. Kawsar Ahmed, Md Abdus Salam, Md Mostafa, Production of Commercial-grade Carbon black from Industrial Carbon Waste, BCSIR, 19.05.2024

Research grants (ongoing & completed research projects)

A. RESEARCH GRANT ON TEACHING AND LEARNING

Project title: Engineering students understanding of thermodynamics (ESUTH) – an innovative teaching and integrated research

Funding Organization : Centre for excellence in teaching & learning,UTP
Contribution : PI
Year of Funding : 2015-2016, Amount: RM 25,000

B. Research projects on science and engineering:

1. **Projects Title** : Synthesis and characterization of AB5 type materials for hydrogen storage.
   Funding Organization : BCSIR
   Contribution : PI
   Year of Funding : 2023-2024
2. **Projects Title** : Design and fabrication of metal hydride hydrogen storage tank
   Funding Organization : BCSIR
   Contribution : PI
   Year of Funding : 2022-2023
3. **Projects Title** : Preparation and characterization of metal hydride for hydrogen storage application
   Funding Organization : BCSIR
   Contribution : PI
   Year of Funding : 2021-2022
4. **Projects Title** : Preparation and characterization of metal hydride for hydrogen storage application
   Funding Organization : BCSIR
   Contribution : PI
   Year of Funding : 2021-2022
5. **Projects Title** : Establishment of Hydrogen Energy laboratory-project)
   Funding Organization : Ministry Of Science & Technology
   Contribution : Project Director
   Year of Funding : 2019-2022 Amount: BDT 54,0000000.00

6. **Projects Title** : Synthesis and characterization of low cost photocatalyst for hydrogen production
   Funding Organization : BCSIR
   Contribution : PI
   Year of Funding : 2018-2019
7. **Projects Title** **:** Hydrogen Production from sub-quality natural gas (SQNG)
   Funding Organization : BCSIR
   Contribution : PI
   Year of Funding : 2017-2018 Amount: BDT 200,000
8. **Projects Title** **:** A structure feature based toxicity prediction of Ionic liquids
   Funding Organization : UTP (STIRF), Malaysia.
   Contribution : PI
   Year of Funding : 2015-2016 Amount: RM 25,000
9. **Projects Title** **:** A novel study of hydrogen separation from gas mixture using vanadium based membrane.
   Funding Organization : FRGS, Malaysia
   Contribution : As Co-Investigator
   Year of Funding : 2015-2018, Amount: RM 20000
10. **Projects Title** **:** Ethylene production from Bioethanol dehydration Over Bimetallic Akline earth oxide-alumina catalyst
    Funding Organization : Y-UTP , Malaysia
    Contribution : As co-investigator
    Year of Funding : 2013-2016 Amount: RM 409,700
11. **Project Title** **:** A new study on catalytic mechanism of carbon nanofiber-supported catalyst in nitrogen hydrogenation reaction
    Funding Organization : Fundamental Research Grant Scheme (FRGS), Malaysia
    Amount : RM 96000
    Duration : 2014-2016
    Contribution : as co-researcher
12. **Project Title** **:** Understanding Reaction Mechanism for Hydrogen Production via Cracking of Hydrocarbons using the Density Functional Theory.
    Funding Organization : Fundamental Research Grant Scheme (FRGS), Malaysia.
    Amount : RM 146000
    Duration : 2015-2017
    Contribution : as co-researcher
13. **Project Title:** Studies on Transition Temperature of Superconducting Materials
    Funding Organization : Bangladesh Council of Scientific and Industrial Research (BCSIR)
    Amount : BDT. 500000
    Duration : June, 2007 – June, 2008
    Project leader : Md Abdus Salam
    Co-researchers : Bikiran Prasad Barua, Minhaz Uddin.
14. **Project Title:** Toxicity of Water Soluble Arsenicals (Computational study)

Funding Organization	: Bangladesh Council of Scientific and Industrial Research (BCSIR)
Amount	: BDT. 500000
Duration	: June, 2008 – June, 2009
Project leader	: Md Abdus Salam
Co-researchers	: Bikiran Prasad Barua, Kabir Ahmed

Training Attended/Received:

1. Training on Development project management & public procurement act & rules, organized by National academy for planning and development (NAPD), October 7-25, 2018.
2. Training on Project appraisal & formulation of DPP, 3 July-03 organized by National Academy for Planning and development (NAPD), August 2017
3. Training on Project Management Information System (PMIS) of IMED organized by Bangladesh Institute of Management, 19-20 February 2020
4. অডিট আপত্তির কারণ বিএস জবাব অডিট আপত্তির নিস্পত্তির প্রক্রিয়া, আয়োজনে ডাক, টেলিযোগাযোগ,বিজ্ঞান, তথ্য এবং প্রযুক্তি অডিট অধিদপ্তর, ২৫.০৫.২০২৫ইং।
5. Training Programme on "Innovation in Public Service" Access to information (a2i) Programme, Prime Minister's office, Bangladesh & BCSIR, 16-17 November 2017
6. Training On “On-site hydrogen production and dispensing system, Millennium Reign Energy USA, 2023.
7. Training on “MBR gas permeation Analyzer”, Hydrogen Energy Laboratory, BCSIR, 22 January, 2022.
8. Training on “IMI System; Hydrogen Storage Analyzer” Hydrogen Energy Laboratory, BCSIR, 20 January, 2022
9. Training on “Fabrication and Operation of Hydrogen Production Pilot Plant, January 2021”
10. Training on operation & control, measurement & analyses, maintenance of the Spectro-Oil Analyzer organized by AMTEK, 1-12 January, 2020
11. Training on PEM fuel Cell fabrication and diagnosis, Centre for Fuel Cell and Hydrogen Research, University of Birmingham, UK. 2019
12. Training on "Maintenance & operating system of Thermogravimetric Analysis (TG/DTA)" BCSIR, Dhaka. 29-31 October, 2017
13. Workshop on “Design and Delivering of Flipped Classroom” Universiti Teknologi PETRONAS, Malaysia, 18-19 May, 2016
14. Workshop on “Internship assessment certification training programme” Universiti Teknologi PETRONAS, Malaysia, 21-22 May, 2016
15. Training on “Problem Based Learning” Universiti Teknologi PETRONAS, Malaysia, 17-18 December, 2015
16. Training on “Writing Final exam Question and OBE” Universiti Teknologi PETRONAS, Malaysia, 28-29 October, 2015.
17. Training on “Active Learning, Part 2: Developing Learning Teams using Cooperative Learning” organized by Universiti Teknologi PETRONAS, Malaysia, 10-11 June, 2015
18. Training on “Active Learning, Part 1: Effective Implementation of Student Centered Learning Technique for OBE” organized by Universiti Teknologi PETRONAS, Malaysia, 10-11 March, 2015.

19. Workshop on “Effective Education Delivery” organized by Universiti Teknologi PETRONAS, Malaysia, 4-6 February, 2015.
20. Workshop on “Effective Education Delivery” organized by Universiti Teknologi PETRONAS, Malaysia, 4-6 February, 2015.
21. Program “ChemClass@UniSchool” organized by Universiti Teknologi Petronas, Malaysia, 3 September 2015
22. 2nd Global Summit on Process Safety, Centre for Chemical Process safety, UTP, 3-5 November,2015
23. Lecturer Series on “Oil and Gas management” organized by Total Professeur's Associes, November, 2013, University Teknologi PETRONAS, Malaysia
24. Short course on electron diffraction and electron energy loss spectroscopy for TEM, 2012; University Teknologi PETRONAS, Malaysia, 2012
25. Workshop on “The Art of writing publishable scientific manuscript and beyond”, Penang, Malaysia. 2012
26. Workshop on “The Art of writing publishable scientific manuscript and beyond”, Penang, Malaysia. 2012
27. Chemical Plant design training in PETRONAS Chemicals MTBE SDN BHD, Organized by UTP & MTBE SDN BHD, 1st May to 30th October, 2011
28. International workshop on “Indigenous capability of technological development in Medical electronics, Islamic University and Technology, Bangladesh.2008
29. তথ্য অধিকার আইন ২০০৯ ও বিধিমালা সংক্রান্ত প্রশিক্ষণ, আযোজনে বিসিএসআইআর, চট্টগ্রাম , ২২.০২.২০২৪ইং
30. নাগারক সেবায় উদ্ভাবন বিষয়ক প্রশিক্ষণ কর্মশালা আয়োজনে পরিকল্পনা ও উন্নয়ন বিভাগ,বিসিএসআইআর, ঢাকা ২৩.০১.২০১৯ইং

Invited Speech/Lecture (Delivered)

১ “Prospect of hydrogen and mix energy” (Bangladesh Infrastructure Innovation and development (BIID) Dialogue 2025, 8-10 May, Exponet & BIID

২ “Hydrogen Integration opportunities in existing gas pipeline in Bangladesh, organized by Bangladesh Petroleum Institute, 23 March 2025.

৩ “Prospects of Hydrogen as sustainable fuel for power Generation” Organized by North west Power Generation Company Limited (NWPGCL), 23 February, 2025.

৪ Key Note Speech on” Prospect of hydrogen energy, Challenges and Implementation strategies” organized by RPGCL, Petrobangla, 20 February, 2025

৫ Short Course on” "Application of AI in Sustainable Energy Transition for Thriving Towards a Smart Society." Organized by IUT, Gazipur, Bangladesh. 01 November, 2024.

৬ Invited Speech on Innovation and Startups opportunities in Energy storage and green hydrogen, Technology and Innovation Conclave 1.0, 24-26 September 2024, New Delhi, India

৭ Keynote speech “Role of Hydrogen in building smart energy system for the sustainable future of Bangladesh, organized by RPGCL, 10 December 2023

৮ Invited Lecture on Pollution free and sustainable fuel system for Bangladesh: A mission of BCSIR, International Conference on Environmental Protection for Sustainable Development (ICEPSD-2022), University of Dhaka, 02-04 September, 2022.

৯ Invited Lecture on “Prospect of Green and Sustainable Energy Technology for Bangladesh, University of Science & Technology Chittagong, 15 September 2022

১০ Invited Lecture on The fourth Industrial Revolution towards energy 4.0 in Bangladesh, “BCSIR Congress-2022”, BCSIR Dhaka, 01-03 December, 2022.

১১ Lecture on “Design and Implementation of Solar Power plant”, Bangladesh Power management Institute, Ministry of Power, Energy & mineral resources, Dhaka, 15 December, 2021

১২ Lecture on “A portfolio of solution to address the Global Decarburization Issues: A role Bangladesh can play; Bangladesh Energy & power research Council, Ministry of Power, Energy & mineral resources, Dhaka, 26 December, 2021

১৩ Invited lecture “Hydrogen economy in Bangladesh” organized by department of applied Chemistry and Chemical Engineering, University of Chittagong, 15.09.2019

১৪ Invited Lecture to International Conference on Innovation in Engineering and Technology (ICIET),Organized by University of Dhaka 23-24 December, 2019

১৫ Hydrogen Strategy roadmap for Bangladesh: Alignment with the global perspective, Climate Promise, National Consultation Workshop, UNDP, 29 October 2024

Language Proficiency

Bengali (Native language), English (Fluent), Arabic (Moderate), Bahasa Malaysia (Moderate)

References:

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BIOGRAPHY

Dr. Md. Abdus Salam is an Academic & Researcher of Bangladesh Council of Scientific and Industrial Research (BCSIR) and the founding director of Hydrogen Energy Laboratory, BCSIR, Bangladesh, currently serving as a Divisional Head of Metallurgy, Institute of mining, mineralogy and metallurgy (IMMM), BCSIR. Dr Salam leads and executes a good number of project grants and it's Finance & Administration (F&A). He is capable enough to complete the project task & deliverables, managing grant administration. Dr. Salam is a mission-oriented researcher, especially hydrogen economy and the way forward. He has extensive research experience in strengthening hydrogen energy (as a strategic renewable fuel) research and development. Dr. Salam has visited and received professional training from world-renowned hydrogen research laboratories or Centre such as; Birmingham Centre for Fuel Cell and Hydrogen Research UK, Graz University Center of Hydrogen Research, Austria, BIOENERGY 2020+ GmbH, and NOW, GmbH, NIP Germany, as well as Petronas Oil and Gas Industries of Malaysia. He has obtained PhD in Chemical Engineering from Universiti Teknologi PETRONAS, Malaysia. He was a postdoctoral research fellow and Chemical Engineering faculty of the Universiti Teknologi PETRONAS, Malaysia. Dr. Salam has to date published more than 75 ISI and Scopus cited and high-impact journals publications, conference proceedings, three books and two book chapters as first and corresponding author. His active involvement in research, invention and innovation on hydrogen economy research (Hydrogen Production via water electrolysis and biomass gasification, hydrogen storage at low and high pressure, & Hydrogen Fuel Cell uses for stationary power generation and FCEV vehicle) made him one of the active members of mission-oriented researchers in the world. Dr. Salam established a solid track record in the field of Hydrogen Economy and pioneer of the development of hydrogen energy research infrastructure (Laboratory) in Bangladesh. He is an Associate Member of the Institution of Chemical Engineers (IChemE) and an Affiliate Member of the Institution of Engineers, Malaysia (IEM). Dr. Salam has been leading the national programme of hydrogen energy, and his team is dedicated to implement the hydrogen economy in Bangladesh. He has successfully completed 15 (Fifteen) national and international research and development projects, along with an annual development project (Bangladesh GoB funded ADP/2019-2022) under the Ministry of Science & Technology, Bangladesh. He has contributed to 3 PhD's and 25 M.Sc theses as a supervisor, along with contributions as examiner, reviewer, and co-supervisor of many theses and final year projects. Dr. Salam received professional management training like Project management & formulation, Public Procurement Act & rules, Innovation in Public Service" Access to information (a2i) Programme. He has a regular participation to the activities of the Sustainable and Renewable Energy Development Authority (SREDA), Bangladesh Power Management Institutes (BPMI), Bangladesh Energy & Power Research Council (BEPRC), Bangladesh Power Management Institute (BPMI), Bangladesh Petroleum Institute (BPI), Power Cell, BPDB and RPGC, Petrobangla.