

Publications list:

PhD peer reviewed articles

1. **Khan EU**, Nordberg Å, Malmros P, Waste heat driven integrated membrane distillation for concentrating nutrients and process water recovery at a thermophilic biogas plant, *Sustainability* 2022, 14 (20), 13535.*

First author led the overall development of the article; research idea, technical analysis, mass and energy balance and system integration were presented and conducted by the first author. Second author acted as the main mentor and reviewer. Third author acted as reviewer.

2. **Khan EU**, Nordberg Å, Thermal integration of membrane distillation in an anaerobic digestion biogas plant - A techno-economic assessment. *Applied Energy*, 239 (2019) 1163–1174.*

First author led the overall development of the article; conducted field study including data collection; conducted extensive literature review; and conducted data analysis. System analysis and parametric studies were also conducted by the first author. The second author acted as mentor and reviewer.

3. **Khan EU**, Nordberg Å, Membrane distillation process for concentration of nutrients and water recovery from digestate reject water, *Separation and Purification Technology*, 206(2018), 90-98.*

First author conducted all experimental work and subsequent analyses. The second author acted as mentor and reviewer.

4. **Khan EU**, Martin AR, Review of biogas digester technology in rural Bangladesh. *Renewable and Sustainable Energy Reviews* 62(2016) 247–259.*

First author led the overall development of the article; conducted field study including data collection; conducted extensive literature review; and conducted data analysis. System analysis and parametric studies were also conducted by the first author. The second author acted as mentor and reviewer for the conceptual and methodological work.

5. **Khan EU**, Martin AR, Optimization of hybrid renewable energy polygeneration system with membrane distillation for rural households in Bangladesh. *Energy* 93 (2015) 1116-1127.*

The first author built the overall conceptual framework, conducted a literature review, and analyzed data and performed system simulations including economic analysis. The second author acted as mentor and reviewer for the article.

6. **Khan EU**, B Mainali, A. R Martin, S Silveira, 2014, Techno-Economic Analysis of Small Scale Biogas Based Polygeneration Systems: Bangladesh case study, *Sustainable Energy Technologies and Assessments*, 7(2014) 68-78.*

First author led the overall development of the article; research idea, technical analysis, mass and energy balance and system integration were presented and conducted by the first author.

Second author was involved with economic analysis. Third author acted as the main mentor and reviewer and fourth author also acted as reviewer.

7. **Khan EU** and Martin AR, 2014, Water purification of arsenic-contaminated drinking water via air gap membrane distillation (AGMD), *Periodica Polytechnica, Mechanical Engineering*, 58(2014), 47-53.*

First author conducted all experimental work and subsequent analyses. The second author acted as mentor and reviewer for the experimental work and results.

8. D. Woldemariam, A. Kullab, **Khan EU** and A. R Martin, Recovery of ethanol from scrubber-water by district heat-driven membrane distillation: Industrial-scale technoeconomic study, *Renewable Energy* xxx (2017) 1-11.*

First author led the overall development of the article; research idea, and system integration were presented and conducted by the first author. Second author was involved with economic and some technical analysis. Third author acted as the main mentor and reviewer and fourth author also acted as reviewer.

Conference papers (Peer reviewed)

9. **Khan EU**, Nordberg Å, Malmros P, THERMO-ECONOMIC ANALYSIS OF A THERMOPHILIC BIOGAS PLANT INTEGRATED WITH MEMBRANE DISTILLATION, ICAE2019, Västerås, Sweden, Aug 12-15, 2019. <https://doi.org/10.46855/energy-proceedings-2892>.*

The first author built the overall conceptual framework, conducted a literature review, and analyzed data and performed system simulations including economic analysis. The second author acted as mentor and reviewer and third author also acted as reviewer for the article.

10. **Khan EU**, Nordberg Å. Membrane distillation (MD) of digestate reject (process) water for performance optimization of a biogas plant in Sweden, 2nd International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability, Spain, 16 - 19 September 2018.

First author led the overall development of the article; conducted field study including data collection; conducted extensive literature review; and conducted data analysis. System analysis and parametric studies were also conducted by the first author. The second author acted as mentor and reviewer.

11. A. Weigert, H. Rosentreter, K. Weiss, T. Lutsch, **E. U. Khan**, A. Martin, U. Gampe, A. Lerch, Comparison of different desalination technologies to treat condensate of a steam-injected gas turbine process, Conference: 8th IWA Specialist Conference on Membrane Technology for Water and Wastewater Treatment, at: Singapore, September, 2017.

The first author built the overall conceptual framework. The second author acted as mentor and reviewer and third author also acted as reviewer for the article. 5th author acted as mentor and reviewer.

12. **Khan EU**, Martin AR & J. Bundschuh, 2016, Biogas energy polygeneration integrated with air gap membrane distillation (AGMD) as arsenic mitigation option in rural Bangladesh, 6th International Congress on Arsenic in the Environment (As 2016), Stockholm, Sweden.*

The first author built the overall conceptual framework, conducted a literature review, and analyzed data and performed system simulations including economic analysis. The second author acted as mentor and reviewer and third author also acted as reviewer for the article.

13. D. Woldemariam, A. Kullab, **Khan EU** and A. R Martin, District heating-driven membrane distillation in industrial-scale bioethanol production: Techno-economic study, 29th international conference on Efficiency, Cost, Optimisation, Simulation and Environmental Impact of Energy Systems (ECOS 2016), June 19 - 23 2016, Portorož, Slovenia.

First author led the overall development of the article, Second author was involved with some technical analysis. Third author acted as the main mentor and reviewer and fourth author also acted as reviewer.

14. **Khan EU**, Martin AR, 2014, Hybrid Renewable Energy with Membrane Distillation Polygeneration for Rural Households in Bangladesh: Pani Para Village Case Study, published to 3rd International Conference on Renewable Energy Research and Applications-ICRERA 2014, Milwaukee, Wisconsin, USA.*

The first author built the overall conceptual framework, conducted a literature review, and analyzed data and performed system simulations including economic analysis. The second author acted as mentor and reviewer for the article.

15. **Khan EU**, Martin A, 2014, Integrated Renewable Energy with Membrane Distillation Polygeneration for Rural Households in Bangladesh accepted to the 6th International Conference on Applied Energy-ICAE2014, Taipei, Taiwan.

The first author built the overall conceptual framework, conducted a literature review, and analyzed data and performed system simulations including economic analysis. The second author acted as mentor and reviewer for the article.

PhD Thesis 2017: Renewables based polygeneration for rural development in Bangladesh, Department of Energy Technology, KTH Royal Institute of Technology, Sweden, 2017.

Licentiate Thesis 2014: Feasibility analysis of biogas based polygeneration for rural development in Bangladesh, Department of Energy Technology, KTH Royal Institute of Technology, Sweden, 2014.

MSc Thesis 2007: Biogas driven stirling engine micropower generation and integrated membrane distillation process for arsenic removal from drinking water, Department of Energy Technology, KTH Royal Institute of Technology, Sweden, 2007.

Non-peer reviewed conference paper

16. Khan EU, Nordberg Å, Performance optimization of a biogas plant integrated with membrane distillation (MD) for nutrients and water recovery from reject water condensate, 28th EUBCE 2020, 6-9th July, Marseille, France.

First author led the overall development of the article; conducted field study including data collection; conducted extensive literature review; and conducted data analysis. System analysis and parametric studies were also conducted by the first author. The second author acted as mentor and reviewer.

17. **Khan EU**, Performance evaluation of an existing thermophilic biogas plant integrated with membrane distillation for digestate nutrients concentration and process water recycle: A techno-economic analysis, Nordic Biogas Conference 2019, 8-10 Oslo, Norway.
18. Khan EU, Waste heat driven membrane distillation for concentrated nutrients and fresh water recycle for sustainable farming: Swedish greenhouse production, Agricultural Research for Development Conference - 25-26 September 2019 in Uppsala, Sweden.
19. **Khan EU**, Martin A, 2014, Biogas from anaerobic co-digestion for energy off-grid rural households in Bangladesh, abstract accepted to World Bioenergy Conference 2014, Jönköping, Sweden.
20. Mainali B, Khan EU, Martin A., "Addressing the rural energy and drinking water needs by using Biogas in rural Bangladesh," in KTH Energy Dialogue 2012, 2012.

Reports

21. **Khan EU**, Ahrens Lutz, Treatment of per- and polyfluoroalkyl substances (PFAS) from landfill leachate using novel membrane distillation (MD) technology, Swedish Geotekniska Institute, Sweden, 2021.
22. **Khan EU**, P.A. Hansson, H. Jönsson, Å. Nordberg, Small-scale polygeneration integrated with membrane distillation for Swedish community, 2017, pub.epsilon.slu.se.
23. **Ershad Ullah Khan**, 2016, Status of household digester technology and biogas energy potential in rural Bangladesh, Report no. 02/2016, Heat and Power Technology, Department of Energy Technology, KTH Royal Institute of Technology.
24. Daniel Woldemariam, **Ershad Ullah Khan**, Alaa Kullab, and Andrew R Martin, 2016, DISTRICT HEAT-DRIVEN WATER PURIFICATION VIA MEMBRANE DISTILLATION, New possibilities for applications in various industrial processes, Energiforsk report, Fjärrsyn -2016:229.
25. Brijesh Mainali, Khan Ershad Ullah, Martin A and Silveira S, Biogas Based Polygeneration for Rural Development in Bangladesh, 2015, Final Project Report (SWE-2011-135), SIDA, Sweden.
26. **Ershad Ullah Khan**, Developed a cogeneration and polygeneration model for electricity and heat, Scarab development AB, Stockholm, 2010.