

**HORIZON
2020**

blo-mimetic and phyto-techNologies Designed for low-cost purficAtion and recycling of water

Ergebnisse

Projektinformationen

INDIA-H2O

ID Finanzhilfvereinbarung: 820906

[Projektwebsite](#) 

DOI

[10.3030/820906](https://doi.org/10.3030/820906) 

Projekt abgeschlossen

EK-Unterschriftsdatum

26 Oktober 2018

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1 Februar 2019

Enddatum

31 Juli 2024

Finanziert unter

SOCIETAL CHALLENGES - Climate action,
Environment, Resource Efficiency and Raw
Materials

Gesamtkosten

€ 3 797 087,61

EU-Beitrag

€ 2 551 348,00

Koordiniert durch

THE UNIVERSITY OF
BIRMINGHAM

 United Kingdom

Dieses Projekt findet Erwähnung in ...



Nachhaltige Lösungen für die Wasserbewirtschaftung in Indien

CORDIS bietet Links zu öffentlichen Ergebnissen und Veröffentlichungen von HORIZONT-Projekten.

Links zu Ergebnissen und Veröffentlichungen von RP7-Projekten sowie Links zu einigen Typen spezifischer Ergebnisse wie Datensätzen und Software werden dynamisch von [OpenAIRE](#)  abgerufen.

Leistungen

Documents, reports (19)

[Characterisation of Wastewater and Groundwater \(NEERI\)](#)

Full physio-chemical characterisation of typical site wastewater and saline groundwater (T2.1) Lead NEERI

[Policy Briefs: Groundwater Management and Purification Technology Adoption](#)

Policy briefs with recommendation on groundwater management and purification technology adoption (T5.7)

[INDIA-H2O Center of Excellence](#)

Centre of Excellence testing and piloting facilities commissioning (T6.5)

[Environmental Implications of INDIA-H2O Technologies](#)

Report on environmental implications of uptake of proposed technologies (T5.6) (NEERI)

[Real-time Management and Control System Specification](#)

Requirements specification of flow and water characteristics required for real-time management and control system for the integrated water recycling system (T2.4).

[Design and Standardisation of Natural Water Treatment Systems](#)

Guidelines for design & standardisation of natural treatment system for water security & Environmental protection (T2.6) CSIR-NEERI

[Optimum Wastewater Phyto-treatment Performance](#)

Definition of the optimum wastewater phyto-treatment performance achieving at least 50% reduction in BOD loading (T2.6) (NEERI)

[Groundwater Practices in Case-study Areas](#)

Report on existing groundwater practices and socio-economic situation in case-study areas (T5.1) (NEERI)

[BRO System Operation II](#)

BRO system operation > 6 months with no performance reduction due to membrane fouling (T1.5) delayed to Dec 22

[Technology Uptake: Opportunities and Constraints](#)

CSIR NEERI Report on mapping of opportunities and constraints for uptake of technology (T5.5)

[Case-study Social perspective Baseline](#)

Report on the social perspective baseline of the case-study villages and existing legislation regarding groundwater (T5.1, T5.3)

[Definition of Salicornia/Sarcocornia Plantation](#)

Definition of the area of Salicornia and/or Sarcocornia plantation needed per 100 m³ drinking water produced and identified local Salicornia and Sarcocornia with high biomass and salts accumulation (T2.3)

[Geo-hydrological Ecological Status of Microwatersheds](#)

Report on geo-hydrological ecological status of the microwatersheds (T5.2) (NEERI)

[Salicornia and Sarcocornia as Valuable Crop Plants](#)

Acknowledgement of Salicornia and Sarcocornia as valuable crop plants in Gujarat (T2.7)

[Results of Long-term Batch-RO Testing](#)

Long-term batch-RO testing results <15% flux decline (T1.4)

[Model of Industrial desalination FO/BRO system](#)

A model of the FO/BRO plant will be developed for an industrial desalination plant validating 10-fold energy/cost reduction per unit processed (T3.3)

[Decision Support Tool](#)

Decision support tool using Goal Programming for business case analysis (T6.4)

[BRO System Operation](#)

BRO system operation > 6 months with no performance reduction due to membrane fouling (T1.5)

[Design of Phyto-treatment System](#)

Phyto-treatment system design based on experimental studies (T2.2)

Open Research Data Pilot (1)

[Data Management Plan](#)

Plan for the management of INDIA-H2O data including metadata generation, data preservation, and analysis (T7.7) The purpose of the plan is to indicate how data is managed within the project, which also includes indicating which data is kept confidential. No confidential data is to be included in the plan.

Demonstrators, pilots, prototypes (2)

[Field Pilot of Solar BRO System](#)

Field pilot test of drinking water purification by solar BRO system producing 8m³/d with only solar energy input (T1.5)

[Industrial Case Study Testing and Pilots](#)

Completion of 20 industrial case study testing and pilot scale assessments (T6.8)

Websites, patent filings, videos etc. (1)

[INDIA-H2O Website and Social Media](#)

Launch of the INDIA-H2O website and social media accounts (T6.2)

Other (1)

[Pilot Bio/FO/BRO System](#)

Pilot Bio/FO/BRO system delivering 8m³/d of clean water, valuable plants and crops with no adverse environmental impacts (T2.6).

Veröffentlichungen

Peer reviewed articles (16)

[Effects of feed and draw solution temperature on the performance of Aquaporin HFFO.6 membrane in forward osmosis !\[\]\(bd1a142de767a21e5362c595f844a4ff_img.jpg\)](#)

Autoren: D. Dsilva Winfred Rufuss, Yawen Wu, P.A. Davies

Veröffentlicht in: Materials Today: Proceedings, Ausgabe 77, 2024, Seite(n) 295-299, ISSN 2214-7853

Herausgeber: Elsevier Ltd

DOI: 10.1016/j.matpr.2022.11.370

[Exergy analysis for enhanced performance of integrated batch reverse osmosis – Forward osmosis system for brackish water treatment !\[\]\(0b5e7e25e8775f7e7e80906ada4f0021_img.jpg\)](#)

Autoren: Dhaval Patel, Anurag Mudgal, Vivek Patel, Jatin Patel, Kiho Park, Philp Davies, Nirajan Dhakal

Veröffentlicht in: Desalination, Ausgabe 580, 2024, Seite(n) 117548, ISSN 0011-9164

Herausgeber: Elsevier BV

DOI: 10.1016/j.desal.2024.117548

[Brackish ground water and dairy wastewater treatment using electrodialysis system !\[\]\(0fb13ad0bfa3d86868cdd3883e5665b3_img.jpg\)](#)

Autoren: Dipak Ankoliya, Anurag Mudgal, Manish Kumar Sinha, Vivek Patel, Jatin Patel

Veröffentlicht in: IOP Conference Series: Materials Science and Engineering, Ausgabe 1146, 2022, Seite(n) 012006, ISSN 1757-8981

Herausgeber: IOP Conf. Series: Materials Science and Engineering

DOI: 10.1088/1757-899x/1146/1/012006

[Techno-economic analysis of integrated bipolar membrane electrodialysis and batch reverse osmosis for water and chemical recovery from dairy wastewater !\[\]\(4436e6b00b9d5e62c2a161129eb3e4d0_img.jpg\)](#)

Autoren: Dipak Ankoliya, Anurag Mudgal, Manish Kumar Sinha, Philip Davies, Kiho Park, Rubén Rodríguez Alegre, Vivek Patel, Jatin Patel

Veröffentlicht in: Journal of Cleaner Production, Ausgabe 420, 2023, Seite(n) 138264, ISSN 0959-6526

Herausgeber: Elsevier BV

DOI: 10.1016/j.jclepro.2023.138264

[A free-piston batch reverse osmosis \(RO\) system for brackish water desalination: Experimental study and model validation](#)

Autoren: Ebrahim Hosseinipour, Kiho Park, Liam Burlace, Tim Naughton, Philip A. Davies

Veröffentlicht in: Desalination, Ausgabe 527, 2022, Seite(n) 115524, ISSN 0011-9164

Herausgeber: Elsevier BV

DOI: 10.1016/j.desal.2021.115524

[Energy, exergy, economic and environment analysis of standalone forward osmosis \(FO\) system for domestic wastewater treatment](#)

Autoren: Dhaval Patel, Anurag Mudgal, Vivek Patel, Jatin Patel, Kiho Park, Philp Davies, Rubén Rodríguez Alegre

Veröffentlicht in: Desalination, Ausgabe 567, 2023, Seite(n) 116995, ISSN 0011-9164

Herausgeber: Elsevier BV

DOI: 10.1016/j.desal.2023.116995

[Design and optimization of electrodialysis process parameters for brackish water treatment](#)

Autoren: Dipak Ankoliya, Anurag Mudgal, Manish Kumar Sinha, Philip Davies, Edxon Licon, Rubén Rodríguez Alegre, Vivek Patel, Jatin Patel

Veröffentlicht in: Journal of Cleaner Production, Ausgabe 319, 2024, Seite(n) 128686, ISSN 0959-6526

Herausgeber: Elsevier BV

DOI: 10.1016/j.jclepro.2021.128686

[Design, modelling and optimisation of a batch reverse osmosis \(RO\) desalination system using a free piston for brackish water treatment](#)

Autoren: Kiho Park, Liam Burlace, Nirajan Dhakal, Anurag Mudgal, Neil A. Stewart, Philip A. Davies

Veröffentlicht in: Desalination, Ausgabe 494, 2020, Seite(n) 114625, ISSN 0011-9164

Herausgeber: Elsevier BV

DOI: 10.1016/j.desal.2020.114625

[Techno-economic analysis of a hybrid electrodialysis–batch reverse osmosis process for brackish water desalination](#)

Autoren: Dipak Ankoliya, Anurag Mudgal, Manish Kumar Sinha, Vivek Patel, Jatin Patel

Veröffentlicht in: AQUA — Water Infrastructure, Ecosystems and Society, Ausgabe 72, 2023, Seite(n) 593-607, ISSN 2709-8028

Herausgeber: Aqua

DOI: 10.2166/aqua.2023.088

[Effect of Salinity and Nitrogen Fertilization Levels on Growth Parameters of *Sarcocornia fruticosa*, *Salicornia brachiata*, and *Arthrocnemum macrostachyum*](#) 

Autoren: Tesfaye Asmare Sisay, Zhadyrassyn Nurbekova, Dinara Oshanova, Arvind Kumar Dubey, Kusum Khatri, Varsha Mudgal, Anurag Mudgal, Amir Neori, Muki Shpigel, Rajeev Kumar Srivastava, Luísa Margarida Batista Custódio, Dominic Standing, Moshe Sagi

Veröffentlicht in: Agronomy, Ausgabe 12, 2024, Seite(n) 1749, ISSN 2073-4395

Herausgeber: Agronomy

DOI: 10.3390/agronomy12081749

[Desalination, Water Re-use, and Halophyte Cultivation in Salinized Regions: A Highly Productive Groundwater Treatment System](#) 

Autoren: Kiho Park, Anurag Mudgal, Varsha Mudgal, Moshe Sagi, Dominic Standing, Philip A. Davies

Veröffentlicht in: Environmental Science & Technology, Ausgabe 57, 2023, Seite(n) 11863-11875, ISSN 0013-936X

Herausgeber: American Chemical Society

DOI: 10.1021/acs.est.3c02881

[Hybrid semi-batch/batch reverse osmosis \(HSBRO\) for use in zero liquid discharge \(ZLD\) applications](#) 

Autoren: Ebrahim Hosseinipour, Somayeh Karimi, Stéphan Barbe, Kiho Park, Philip A. Davies

Veröffentlicht in: Desalination, Ausgabe 544, 2024, Seite(n) 116126, ISSN 0011-9164

Herausgeber: Elsevier BV

DOI: 10.1016/j.desal.2022.116126

[Complete parametric investigation of a forward osmosis process using sodium chloride draw solution](#) 

Autoren: D. Dsilva Winfred Rufuss, Ebrahim Hosseinipour, S. Arulvel, P.A. Davies

Veröffentlicht in: Desalination, Ausgabe 547, 2022, Seite(n) 116218, ISSN 0011-9164

Herausgeber: Elsevier BV

DOI: 10.1016/j.desal.2022.116218

[A compact hybrid batch/semi-batch reverse osmosis \(HBSRO\) system for high-recovery, low-energy desalination](#) 

Autoren: Kiho Park, Philip A. Davies

Veröffentlicht in: Desalination, Ausgabe 504, 2021, Seite(n) 114976, ISSN 0011-9164

Herausgeber: Elsevier BV
DOI: 10.1016/j.desal.2021.114976

[Improving MFI-UF constant flux to more accurately predict particulate fouling in RO systems: Quantifying the effect of membrane surface porosity](#)

Autoren: Mohanad Abunada, Nirajan Dhakal, William Z. Andyar, Pamela Ajok, Herman Smit, Noredine Ghaffour, Jan C. Schippers, Maria D. Kennedy

Veröffentlicht in: Journal of Membrane Science, Ausgabe 660, 2022, Seite(n) 120854, ISSN 0376-7388

Herausgeber: Elsevier BV
DOI: 10.1016/j.memsci.2022.120854

[Effect of membrane properties on the performance of batch reverse osmosis \(RO\): The potential to minimize energy consumption](#)

Autoren: E. Hosseinipour, P.A. Davies

Veröffentlicht in: Desalination, Ausgabe 577, 2024, Seite(n) 117378, ISSN 0011-9164

Herausgeber: Elsevier BV
DOI: 10.1016/j.desal.2024.117378

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Patent (2)



DESALINATION SYSTEM AND METHOD

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Datum: 2019-05-01

Antragsteller: THE UNIVERSITY OF BIRMINGHAM

DESALINATION SYSTEM AND METHOD

Antrags-/Publikationsnummer: 20 21052880

Datum: 2021-11-05

Antragsteller: THE UNIVERSITY OF BIRMINGHAM

Datensätze

[Electrodialysis with bipolar membranes for reagents recovery from dairy wastewater](#) 

Autoren: Rodríguez Alegre, Rubén

Veröffentlicht in: Zenodo

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Permalink: <https://cordis.europa.eu/project/id/820906/results/de>

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