معهد ابتكـــار تقنيـــات
المياه والأبحاث المتقدمة
Water Technologies Innovation
Institute & Research Advancement

WTIIRA

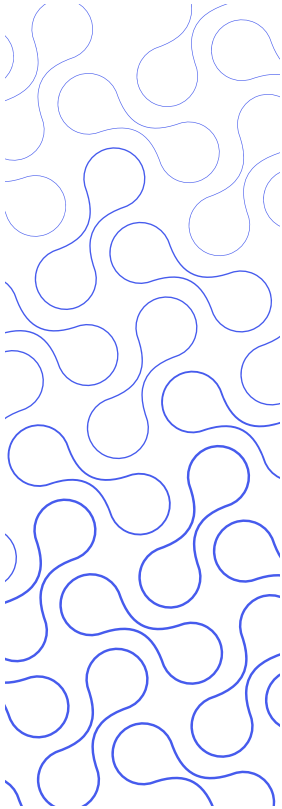
Desalination Research and Innovation Pulse

Quarterly Newsletter of WTIIRA, Q-2, 2023

Version 1.01

SWCC

Contents



Message from the Team

Dear Readers,

Welcome to the second issue of the Desalination Research and Innovation Pulse (DRIP), the official newsletter of SWCC-WTIIRA. We are very excited to launch this edition of the newsletter with a new identity of our institute as Water Technology Innovation Institute and Research Advancement (WTIIRA).
On July 26, the ceremony of introducing the new identity of our research institute was held at Fairmont Hotel, Riyadh. WTIIRA, the new name of our institute expresses our goals, vision and mission. This is an effort to create a sustainable environment for growth and prosperity of the Institute in line with the national priorities for research innovation and modern technologies, and to confirm our commitment at a coherent pace to strengthening research and innovation capabilities to achieve the long-term goals especially those carried by the Kingdom's Vision 2030.

We are sincerely thankful to our management for their encouragement and supervision, and all our colleagues who have shared their personal, collective and technical information/achievements, during the compilation of this newsletter issue.

Best Regards,
The WTIIRA Team

About WTIIRA

The Research and Development Institute at SWCC was initially established in 1987. Following its establishment, several key changes were made to better enhance the institute, the last change was made in July 2023 by restructuring and rebranding the institute into the Water Technologies Innovation Institute and Research Advancement (WTIIRA). The Institute is currently considered one of the largest water and sustainability research and innovation hubs in the region. It seeks to reach global leadership in water and green technologies.

Vision

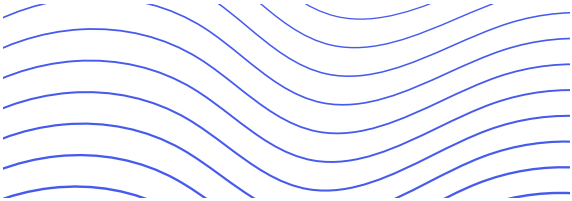
To be a global leader for research and innovation in water technologies and environmental solutions.

Mission

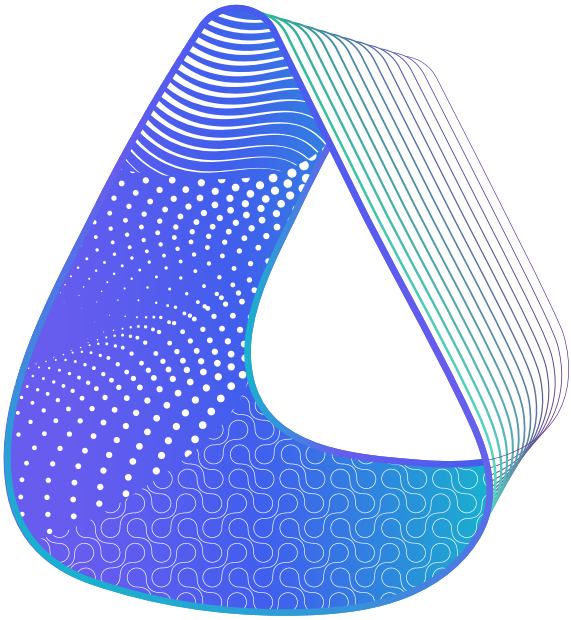
To lead the innovation in water and green technologies in such manners that ensure sustainability, high-efficiency, and continuum in the Kingdom and around the World.

To drive world-class research, technological development and innovation activities aiming to deliver advanced solutions to achieve the long-term water security and sustainability goals.

“To Preserve the Essence of Life”



A New Identity Released



WTIIRA is our new identity

Discover WTIIRA

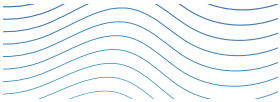
Meaning of the New Identity

The new name of the institute is Water Technologies Innovation Institute & Research Advancement (WTIIRA). The name expresses our goals, vision and mission. Through this change, we believe that "WTIIRA" will become a global model in preserving the sustainability of the environment and water and providing basic human needs in a sustainable manner.

Meaning of the New Logo

The new logo is inspired by the combination of elements that reflect the core values of the Institute, which include efficiency, clean and renewable energy, circular economy, and optimal uses. The logo symbolizes innovation and creativity, as it enhances our strength in research, development and innovation to solve the major challenges facing the Kingdom and the World.

More Details

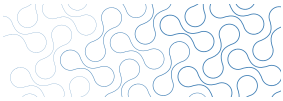


Optimal Uses

Waveforms symbolize optimization

Circular Economy

Differently-sized circles represent the circular economy



Clean & Renewable Energy

Hydrogen molecules symbolize renewable energy

Efficiency

Straight lines indicate efficiency

WTIIRA

More details

The Full Logo

01 The logo icon represents the institute's fifth value, innovation, and creativity

02 Combination of the elements symbolizes innovation and creativity

WTIIRA STATISTICS

In Numbers

178
Applied Research Projects

21
IP Granted and Filed

284
Conference Presentations

161
Puplished Scientific Papers

112
Evaluation Projects

404
Troubleshooting & Analysis Projects

Research Achievements

Research Achievements

Design and Construction of Haql Zero Liquid Discharge (ZLD) Plant for Brine Mining

WTIIRA
Dr. Ghulam Mustafa
Eng. Omar Alraqibah
Eng. Eslam Alwaznani
Dr. Seungwon Ihm

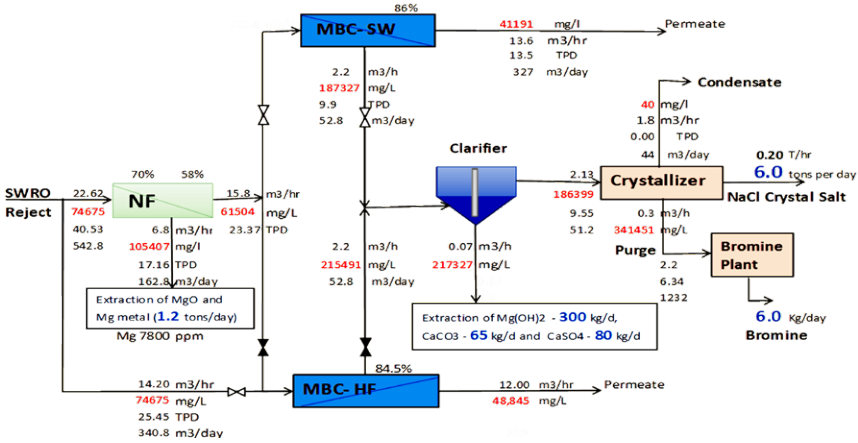
LCD
Eng. Abdullah Aljabri
and his team

Objectives

To demonstrate the innovative technology developed by WTIIRA for production of salt, bromine and magnesium metal from seawater brine.

Achievements

Process design of Haql ZLD demonstration plant and design of the NF unit and two membrane brine concentrators (MBC) have been successfully completed. Procurement is in progress for NF, MBC systems, magnesium unit, and crystallizer. Bromine unit is currently under construction.



Research Achievements

Megaton Demonstration Plant in Duba

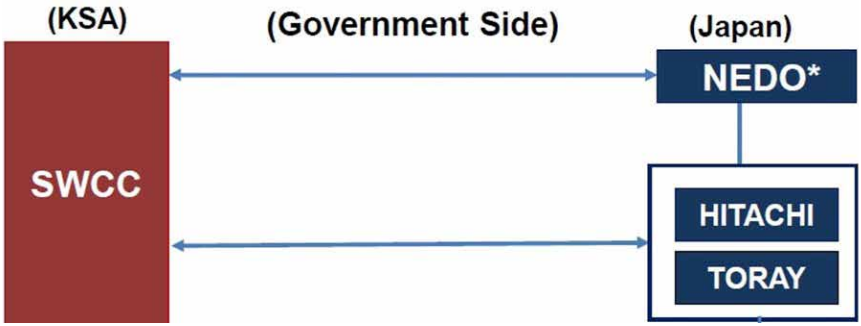
WTIIRA
Dr. Abdallatif Abdalrhman
Dr. Seungwon Ihm
Eng. Abdullah Albiladi

Objectives

The Megaton project is a high level collaboration project between the SWCC/WTIIRA and the Japanese government represented by the New Energy and Industrial Technology Development Organization (NEDO). The project aims to build a full demonstration plant with a capacity of 10,000 m^3/d based on a novel high recovery and energy saving design. The developed process configuration and equipment during this project are expected to improve the performance and economics of seawater reverse osmosis (SWRO) desalination processes.

Achievements

The expected outcome from this project is to: (a) design and build a high recovery SWRO system (55% recovery) equipped with advanced RO membrane, (b) verify new energy recovery configuration to reduce the energy consumption (10-15% reduction), (c) verify a new biofouling monitoring technology (mBFR). The demonstration plant construction activities have just been completed. Commissioning and testing are under progress now. The operating team has finally confirmed the smooth operation of 100% SWRO pumps with and without having the permeate-side energy recovery device (P-ERD) in operation, and the operation of brackish water reverse osmosis (BWRO) pumps. Pilot testing of the biofouling monitoring technology (mBFR) has been completed. The long-term performance evaluation is currently in progress.


(KSA)
(Government Side)
(Japan)
SWCC
NEDO*
HITACHI
TORAY

Research Achievements

Vaterite Type $CaCO_3$ Recovery Process by Using Cement Kiln Dust, CO_2, and SWRO Brine

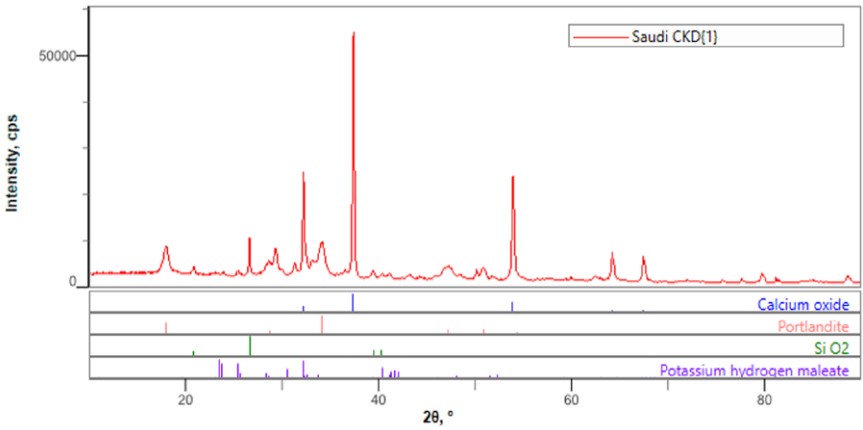
WTIIRA
Dr. Seungwon Ihm
Eng. Ammar Alnumani
Dr. Abdallatif Abdalrhman
Dr. Christopher Fellows

Objectives

This project aims to develop a novel process for $CaCO_3$ extraction as Vaterite type, by utilizing SWRO brine, Alkali dust of Cement plant, and captured CO_2.

Achievements

The fundamental study and lab experiments have been conducted successfully and the process concept for $CaCO_3$ extraction using SWRO brine, Alkali dust of Cement plant, and captured CO_2 has been proven. Currently, a pilot plant is under construction, and will begin operations in early 2024.



XRD (X-ray diffraction) analysis on the Saudi CKD (Cement Kiln Dust) sample no. 1

Demonstration Pilot for Vaterite-type CaC03 production under assembly in South Korea

Research Achievements

Hybrid PV+Wind Renewable Energy Supply to Haql Desalination Plant

WTIIRA
Eng. Youngwook Yoo
Eng. Abdulaziz AlJamhan
Dr. Abdulrahman Magdy
Eng. Faisal Abu Derman

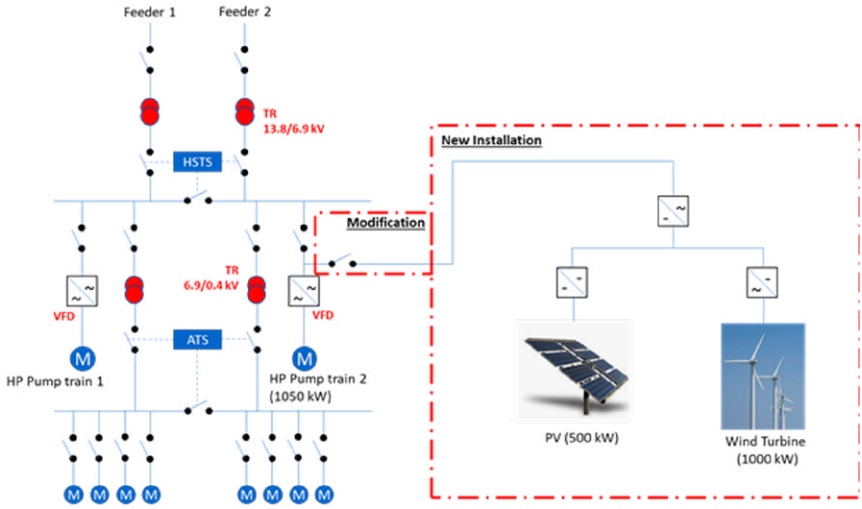
Objectives

This project aims to:

* Develop a hybrid 1000 kW wind and 500 kW PV power configuration to increase the renewable energy capacity factor.
* Increase the renewable energy penetration rate in HP pump operation.
* Achieve renewable energy feeding configuration to power existing SWRO plant, supplemented by grid power to avoid any loss in plant availability.
* Maximize renewable energy penetration rate without storage system.

Achievements

The preliminary calculations based on the direct normal irradiation for PV and mesoscale digital wind data, revealed that by synchronizing 500 kW PV with 1000 kW wind power the penetration rate can be improved significantly. It was found that between March and October (8 months) the renewable penetration rate can reach an average of 52%, and in August and September it can reach 64% in average. This average renewable penetration rate is approximately 34% higher compared to the case of wind turbine only. This project is currently at the bidding stage.


Feeder 1
Feeder 2
TR
13.8/6.9 kV
HSTS
Modification
TR
6.9/0.4 kV
VFD
VFD
ATS
HP Pump train 1
HP Pump train 2
(1050 kW)
New Installation
PV (500 kW)
Wind Turbine
(1000 kW)

Research Achievements

Testing of Different CSP Pilots

WTIIRA
Eng. Ahmed AlGhamdi
Eng. Amr Ahmed
Dr. Khalid Bamrdouf
Eng. Basil Al Rajhi

Objectives

* Selection of best solar collectors that can be coupled with thermal desalination.
* Conduct techno-economic study based on real data for solar thermal desalination.
* Facilitate integration of CSP solar energy with different desalination technologies.

Achievements

CSP units will be installed to evaluate these units under local weather conditions, that can lead to more understanding of coupling CSP with different type of desalination methods. Also these units will be coupled with different desalination technologies which is not coupled before with CSP to prove this concept to maximize feasibility.

Research Achievements

Protection of Metallic Systems By the Application of Thermoplastic Coating

WTIIRA
Eng. Fatma Alradhi
Dr. Nausha Asrar
Eng. Abdulrahman Alenazi
Eng. Ali Al-Sahari

Objectives

- To extend the lifespan of the metallic joints by providing better corrosion protection.
- Avoid metallic joints leakage problems.
- Reduce the maintenance and replacement costs.

Achievements

Severity of corrosion in SWCC Alkhafji plant conditions were evaluated. Sites for application of the thermoplastic coating (worst case scenario) have been identified. Installation of coated sample in AlKhafji RO plant conditions will be started soon. Monitoring of the performance of coating is scheduled after 6 to 12 months.

Research Achievements

Case Study - Excessive Corrosion Deposits in Brine Heater of Ras AlKhair Plant

WTIIRA
Eng. Fatma Alradhi
Dr. Nausha Asrar
Eng. Ali Al-Sahari
Eng. Abdulrahman Alenazi

Objectives

Root cause determination of corrosion deposit in the Brine Heater of Ras AlKhair Plant

Achievements

Large amount of corrosion deposits were found in the steam condensation section of the brine heater. Chemical analysis using SEM/EDS identified Hematite (Fe_2O_3) as the main constituent of the corrosion product. Hematite is a loose non-protective iron oxide. It seems that the chemistry of the boiler feed water (BFW) is not efficient to develop a protective magnetite (Fe_2O_4) layers on the internal surfaces of the HRSGH steel surfaces. Recommendations to control the problem was provided to the plant.

Spectrum 5

Element	Wt%	σ
Fe	66.6	0.1
O	25.3	C
C	6.0	0.1
Mn	0.9	0
Al	0.3	0
Si	0.2	0
Ti	0.2	0
Cr	0.1	0
Mg	0.1	0
Ca	0.1	0
Na	0.1	0
S	0.1	0

SEM picture and EDS analysis results

Research Achievements

SWCC - Saudi Green Initiatives: Carbon Sequestration Programs

WTIIRA
Dr. Mohammed Al Namazi
Dr. Mohamed Ershath
Ms. Layan Alkharbous
Mr. Bakheet Al Jadani
Mr. Mohanad Al Ghamdi

Objectives

SWCC-SGI aims at 1.4 million tons of carbon sequestration by mangroves.

Achievements

The feasibility study has been completed. The site has been selected to plant millions of mangrove saplings in a year-long period. The technical team has begun exploring the potential for collaboration between Saudi universities and other research institutions. The new research domain has been finalized and is related to agriculture, pharmacology, hydrology, aquaculture, and oncology.

Research Achievements

Hydrogen Recovery from Electro-chlorination System

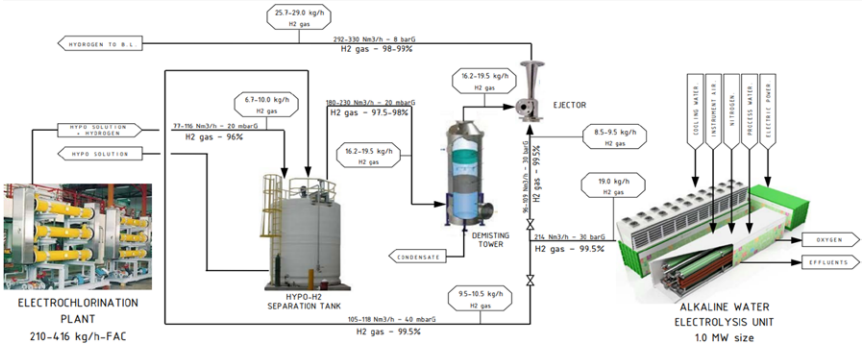
WTIIRA
Eng. Ahmed AlGhamdi
Eng. Amr Ahmed
Dr. Abdelrahman Magdi
Eng. Basil Al Rajhi
Dr. Abdallatif Abdalrhman

Objectives

* Exploit hydrogen that produced as by product from electro-chlorination system.
* Produce hydrogen in competitive cost that can lead to improving green hydrogen production economics.
* Prove new purification system which can lead to increase purity and quantity of hydrogen produced from electro-chlorination system.

Achievements

Work is in progress to prove the concept by building pilot unit to test and evaluate the process at a pilot level. Design of pilot unit is in process. After approval of the design, the pilot unit will be built.



Research Achievements

Development of Novel Antiscalants

WTIIRA
Dr. Ali Al-Hamzah,
Dr. Christopher Fellows
Dr. Fahad Alharthi

Objectives

This project aims to develop high efficiency antiscalants, patent these novel products, and then localize their production, in line with the 2030 vision of the Kingdom.

Achievements

WTIIRA is actively developing antiscalants targeting calcium carbonate, calcium sulfate and magnesium hydroxide which are the main scaling salts in the desalination process. This is guided by the 'edge-active' hypothesis and using advanced methods of reversible deactivation radical polymerization. In the next quarter we plan to take delivery of a dynamic scale loop system for assessing the performance of our novel antiscalants on the most cost-effective way.

Intellectual Property

Intellectual Property

Method and System for Extraction of Minerals Based on Divalent Cations From Brine

Patent number US 2023-0182077 A1

This patent describes a new process for separating desalination plant brine into commercially valuable components by a pathway that requires low levels of energy and limited quantities of additional chemicals. Using nanofiltration membranes, the process removes other components from the brine to generate a solution of magnesium chloride. This is a product in its own right, but is most important as a potential raw material for production of metallic magnesium. The ultimate goal of this for SWCC is to reduce the net cost of water production by adding value to the desalination brine, which is currently only a waste. If this stream can be economically used as a source of magnesium, as this patent suggests, providing brine and licensed technology to a partner could greatly increase SWCC's total revenue from the same amount of seawater. This will also reduce the dependence of the Kingdom on expensive imported products and enable new high-technology industries.

Intellectual Property

System and Method for Monovalent Ion Purification Using Multi-Pass Nanofiltration With Recirculation

Patent number US 2021-0147273 A1 WO/2023/111991

This patent is for a novel method to treat seawater brine through a nanofiltration membrane by one or more passes to produce a purified brine stream rich in sodium chloride and suitable for use directly by industry.

The mixed salt derived from seawater is unsuitable for most industrial applications and requires extensive purification. Nanofiltration membranes can selectively reject some of the components of seawater (such as calcium, magnesium, and sulfate) leaving mostly sodium and chloride. Because the salts rejected by nanofiltration lead to fouling in reverse osmosis. Their removal allows the purified brine to be concentrated to a higher degree by reverse osmosis, leading to a higher overall recovery.

In this process, seawater or desalination brine is passed through one or more nanofiltration steps in a new process, giving a permeate which is richer in sodium chloride and can be concentrated to a higher degree with Reverse Osmosis.

Published Papers

Published Papers

Bio-inspired Fabrication of Adsorptive Ultrafiltration Membrane for Water Purification: Simultaneous Removal of Natural Organic Matters, Lead Ion and Organic Dyes

WTIIRA has published a study on the use of a feasible method for manufacturing multifunctional cellulose-based nanocomposite membranes via bio-fabrication by Acetobacter xylinus for water purification. The resulting membranes (BC/PDA14h/CNCs) showed the maximum adsorption capacity for heavy metals and organic dyes and can simultaneously be used to treat multiple contaminants during the dynamic filtration process. The membrane also exhibits excellent antifouling performance and high flux recovery ratio. The multifunctional, high removal efficiency, and environmentally friendly features of the membrane make it a promising approach for membrane fabrication and water purification applications.

For more information, scan the QR below
https://www.sciencedirect.com/science/article/pii/S2213343723005377

Published Papers

Microbial Fabrication of Cellulose Nanofiber-based Ultrafiltration Membrane: A Sustainable Strategy for Membrane Manufacture

WTIIRA has published a study on the use of a sustainable approach to manufacturing cellulose-based membranes using bacterial cellulose (BC) via microbial fermentation and physical post-treatment. The resulting BC membrane (BCM) has a three-dimensional network structure with strong hydrophilicity and can be manipulated by adjusting fermentation and drying conditions for practical use. The study demonstrates that BCMs can be favorable alternatives to petrochemical-based membranes in pressure-driven membrane processes, and modification of BCMs by carboxymethyl cellulose can further enhance membrane hydrophilicity.

For more information, scan the QR below
https://link.springer.com/article/10.1007/s10570-023-05201-z

Published Papers

Dual Brine Concentration for The Beneficial Use of Two Concentrate Streams From Desalination Plant - Concept Proposal and Pilot Plant Demonstration

WTIIRA has published a study on the development of a novel dual brine concentration design using a nanofiltration system upstream of a reverse osmosis system and a membrane brine concentration system downstream to concentrate the RO brine to the desired point, 15 wt% (166,000 mg/L) and higher. The design can be used to generate two valuable brine streams; one highly concentrated and purified monovalent ion stream, and the other has a high concentration of divalent ions. A commercial-scale system based on this concept was designed to produce water and concentrated streams. With the proposed configuration, 65.2 % of the seawater will be recovered as fresh water, 19.3 % will be monovalent ion concentrate, and the remainder 15.5 % will be divalent ion concentrate.

For more information, scan the QR below
https://www.sciencedirect.com/science/article/pii/S0011916423004216

Published Papers

Non-metals for Desalination Industry

WTIIRA has published a study on the use of non-metallic materials for high-pressure pipelines of reverse osmosis plants. This innovative technique can replace application of expensive super duplex stainless steel with cheaper carbon steel pipes internally coated with polymer. The study demonstrates the success of this approach, reducing capital and operational costs, maintenance costs, and increasing local content. The Institute has many scientific studies that contribute to reducing costs, increasing efficiency, and local content.

For more information, scan the QR below
https://cdn2.me-qr.com/pdf/16692058.pdf

Knowledge Sharing

Knowledge Sharing

Case Study - Excessive Corrosion Deposits in Brine Heater of Ras AlKhair Plant

Presented by
Dr. Nausha Asrar

Abstract
Corrosion validates the universal law of entropy: everything trends toward a state of greater chaos and disorder. The flecks of rust on an iron bar or the green patina on a copper fixture are evidence of the insidious effects of corrosion. These examples may be regarded as insignificant, but taken to the extreme, the results of corrosion can lead to catastrophic failures. In view of the above, a good understanding of corrosion mechanism and physics of failure analysis, may help engineers and researchers in appropriate selection of the materials, improvements in the design and maintenance, carrying out good quality of failure analysis, and finding remedial measures to improve the service life of the machines. This presentation discussed few basic concepts of corrosion mechanism, field-base cases of corrosion related failures, different forms of corrosion and behavior of few corrosion resistant alloys (CRAs), commonly used in industries. Plausible causes of consistently increasing cost of corrosion over the years was also discussed.

For more information, scan the QR below
https://cdn2.me-qr.com/pdf/16843070.pdf

Knowledge Sharing

The Potential of Industrial Waste Heat Recovery for Desalination in Saudi Arabia

Presented by
Dr. Abdulrahman Magdy

Abstract
One of the objectives of the Kingdom's 2030 vision is to become a global logistic hub and grow non-oil exports. This can be achieved by accelerating investments in the major industrial sectors such as petrochemicals, steel, cement, ...etc. Expanding such essential industries will undoubtedly increase the demand for energy and water. Around 60% of the energy consumed in the industrial sector is wasted in the form of heat. This presentation addressed the possible ways of utilizing waste heat from industry for power generation and desalination in particular. It also highlighted the need for sustainable and decentralized desalination and its importance in providing clean water for the future generations in Saudi Arabia.

For more information, scan the QR below

https://cdn2.me-qr.com/pdf/16692072.pdf

Activities

Activities

SWCC Launched the New Identity of Its Research and Innovation Arm, WTIIRA

SWCC has announced the launch of a new identity for its research and innovation arm, the "Water Technologies Innovation Institute and Research Advancement (WTIIRA)", the step came to enhance the institute strategic directions in the water industry and sustainability solutions and to support its excellence in these fields. The new identity was launched during a ceremony attended by many leaders from SWCC, including the governor of SWCC His Excellency Eng. Abdullah Al-Abdulkarim, in addition to a number of external guests. During the event, the institute presented its research and innovative projects, and its efforts to utilize the desalination brine through extracting precious elements and salts from it and contribute to the water, environmental and economic sustainability. The deputy governor for research and execution of innovative projects explained how the new identity reflects the institute's commitment to providing advanced water solutions and techniques, enhancing research and innovative capabilities in the Kingdom, and achieving the goals of the Kingdom's 2030 vision.

For more information, scan the QR below

https://me-qr.com/l/wtiraidentity

Activities

WTIIRA's Initiative for Green Hydrogen Production and Sustainable Desalination in Saudi Arabia

WTIIRA has recently launched a new Green Hydrogen Initiative. This initiative came as a part of the Saudi Arabia's ambitious plans to be a global leader in hydrogen economy. It highlights Saudi Arabia's efforts to transition to clean energy, achieve carbon neutrality, and reduce environmental damage.

For more information, scan the QR below

https://www.swcc.gov.sa/ar/News/NewsDetails/1132

Activities

AMPP Collaboration With SWCC For Joint Research and Training Programs

WTIIRA welcomed the CEO of the Association for Materials Protection and Performance (AMPP), and the executive management of the Saudi Water Academy to discuss opportunities for cooperation and joint projects in research, innovation, and training. The discussion focused on the future vision of water industry such as quality goals, efficiency, environmental compliance, new technology development, and research & development priorities. Also discussed ways to enhance the research relationship and strengthen joint cooperation, including studying corrosion management and developing a model for desalination systems. Progress in application of IMPACT, an AMPP's diagnostic tool that asset owners use to measure where they are in their corrosion management processes and procedures, was also discussed. WTIIRA is using this tool for audit of Ras Al-Kahir plant. The visit concluded with an agreement to use the research and training facilities of WTIIRA to establish training courses and design a specialized training program, aiming to increase knowledge and establish science and innovation in desalination techniques.

For more information, scan the QR below

https://twitter.com/wtiira_ksa/status/1669031472106287104?s=48&t=p95lZegs15VJv80sj_qe2w

Activities

WTIIRA Developed A New Method to Improve The Quality of Desalinated Water and Solve The Bromate Formation Issue

WTIIRA announced the development of a new method to improve the quality of the produced and transferred water by controlling the formation of bromate. This method ensures the supply of high quality drinking water free of any harmful by-products. This great achievement in the field of desalination and water services came after several years of studies and trials, and is considered a new advancement in the field of desalination. The institute explained that the new method uses an advanced technology to prevent the formation of bromate in the desalinated and transported water. The institute pointed out that this new method is based on using innovative anti-oxidation elements that are able of preventing the reactions responsible for bromate formation .

For more information, scan the QR below

https://www.spa.gov.sa/w1926642

Activities

WTIIRA Presented at The Global Water Summit in Berlin

WTIIRA distinguished itself during the Global Water Summit in Berlin by showcasing its latest water technologies, discussing its critical role in growing this sector, and outlining its plans for the sustainable future of water supply. During the conference, the most significant inventions and efforts of the institution in the field of water were presented, as well as its role in shaping the future, boosting efficiency, and lowering water production cost. It was also emphasized that the latest technologies, creative ideas, and successful experiences in the desalination business should be used to maximize the utilization of the circular economy concept in the desalination and water industry.

For more information, scan the QR below

https://www.aleqt.com/2023/05/17/article_2549111.html

Activities

Saudi Accreditation for WTIIRA's Laboratories

WTIIRA has received the Saudi accreditation for examination laboratories in accordance with the international standard ISO/IEC 17025.This accreditation is the result of the institute's continuous efforts in the field of research and development, as well as to strengthen the institute's pioneering position in the field of water desalination and the innovation of modern technologies to improve the quality and effectiveness of water production and supply in the Kingdom.

The ISO/IEC 17025 standard is an international standard for monitoring the efficiency of examination and calibration laboratories, with the goal of improving the quality and increasing the confidence in results. This success represents SWCC's ongoing dedication towards improving the quality and enhancing the efficiency.

For more information, scan the QR below

https://me-qr.com/oCpvEWSw

Activities

WTIIRA Participated in The International Algae Conference & Exhibition in Dhahran

WTIIRA's team presented the research efforts and achievements in the field of algae cultivation and utilization, as well as the development of its own technology for using algae to reduce carbon emission.

During the conference, SWCC represented by WTIIRA, signed a memorandum of understanding with the National Fisheries Development Program (NFDP), with the goal of developing industrial applications such as carbon reduction techniques using algae, as well as promoting the transformational industries through the development of algae farming techniques and applications.

For more information, scan the QR below

https://me-qr.com/l/InternationalAlgaeConferenceExhibitio

Activities

WTIIRA Presented at the International Congress of AEDyR in Spain

WTIIRA continues to work on developing innovative brine mining technologies in order to increase the efficiency of the desalination sector and achieve greater resource sustainability. In this regard, the institute highlighted its most notable research and innovation achievements in the area of brine mining during its participation in the International Congress of the Spanish Organization for Water Desalination and Reuse (AEDyR).

The presentation highlighted the most recent findings about the extraction of high purity NaCl salts (99.6%) which can boost the efficiency of resources utilization and strengthen the concept of circular economy in the desalination industry.

For more information, scan the QR below

https://me-qr.com/l/InternationalCongressofAEDyR

Activities

Application of Non-Metallic Materials in Valves and Tubes

A team from WTIIRA and its counterpart from George Fischer (GF) International for Pipeline Systems discussed the possibility for joint collaboration to develop applications for valves and tubes that contain more advanced non-metallic materials capable of resisting failures. This can lead to lowering the production cost, and contribute to the water and environmental sustainability.

The two parties discussed the possibilities to benefit from both sides experience in material science to implement and enhance the use and application of non-metallic materials in a way that can make it last longer, resist corrosion and prevent damage to the environment.

For more information, scan the QR below

https://me-qr.com/l/GeorgeFisherInternational

Activities

Princess Noura Bint Abdulrahman University Students Visited WTIIRA

During their visit to WTIIRA, groups of students from Princess Noura University were able to see the research advancement in the area of desalination technologies, the institute role in establishing environmentally friendly approaches that reduce cost and boost productivity.

WTIIRA's invitation to the students came as part of the institute's ongoing efforts to build strategic partnerships, raise the level of research and innovative mobility, and support the growth of local talents. WTIIRA also aims to improve the collaboration and cognitive experience exchange between the industrial and academic sectors, in order to contribute to the Kingdom's 2030 vision goals.

For more information, scan the QR below

https://me-qr.com/l/PrincessNouraBintAbdulrahmanUniversitystudentsvisitedWTIIRA

Activities

WTIIRA at the European Desalination Society conference in Cyprus

WTIIRA participated in the European Desalination Society conference in Cyprus by presenting a study about the potential for the exploitation of the hydrogen from electro-chlorination system used in the desalination plants. The institute's participation aimed to create collaboration opportunities for research and innovation with the partners from EU.

For more information, scan the QR below

https://www.okaz.com.sa/news/local/2134369

Activities

WTIIRA at The 18th IWA Leading Edge Conference on Water and Wastewater Technologies

A team from WTIIRA attended the 18th IWA Leading Edge Conference on Water and Wastewater Technologies in South Korea. During the conference, the team discussed the possibilities for research and technical cooperation with Korean enterprises specializing in desalination and brine mining. A number of site visits were conducted after the conference to explore the different new technologies that are currently used in the Korean water treatment sector.

For more information, scan the QR below

https://iwa-network.org/events/let-2023/

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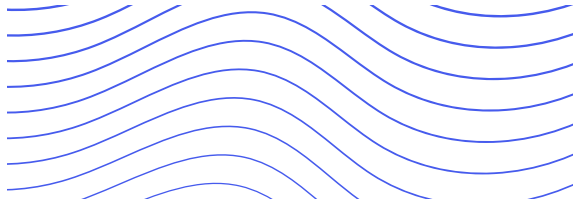

Thanks

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