

## REPORT

# REPORT

on

## Regional Training Course on

# Coastal Desalination Intake and Brine Disposal System- Planning, Design and Implementation

(Online)

**27 -29 October 2021**

**11:00 am- 13:30 (Tehran Time +3:30 GMT) Every day**

## INTRODUCTION

Regarding the importance of desalination plants in the region and considering that many large desalination plants, mostly coastal, have been constructed or are under construction in the region of the Persian Gulf, the Oman sea and even the Caspian Sea, and their environmental impacts, the Regional Training Course on Coastal Desalination Intake and Brine Disposal System- Planning, Design and Implementation was organized to be held from 27-29 October 2021.

This course was held online from 11:00 am to 13:30 each day for 3 days by UNESCO Category 2 Regional Education and Research Centre on Oceanography for West Asia (RCOWA) in cooperation with Babol Nooshirvani University of Technology, Ramsar Regional Centre – Central and West Asia, IORA Regional Centre for Science and Technology Transfer, Inter-Islamic Network on Oceanography (INOC), and IOC Regional Committee for the Central Indian Ocean (IOCINDIO).

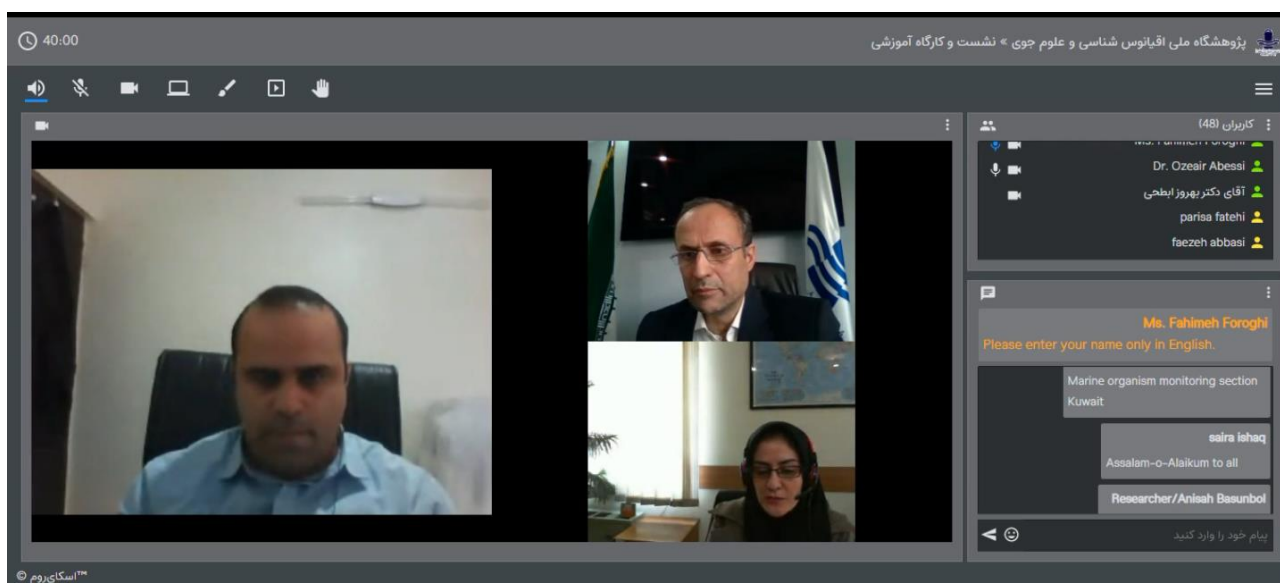
The course was presented by Dr. Ozeair Abessi, Assistant Professor of Babol Nooshirvani University of Technology, Babol, Iran.



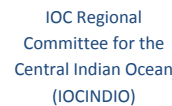
140 experts and students of the region registered. 75 users participated in the course. The participants were from Iran, Oman, Kuwait, Yemen, Pakistan, Japan, Iraq, Egypt, Somalia, Russia, Madagascar and Malaysia.

The course was opened officially by the Director of the Regional Education and Research Centre on Oceanography for West Asia (RCOWA), Prof. Behrooz Abtahi. Prof. Abtahi welcomed the participants and noted the importance of the Desalination plants for the regions and the oceanographic researches in this field.

In the course, some of the essential issues involved in the management and modeling of sea water deep intakes and brine discharge systems along the near field were discussed.



**Opening of the course** - From Left: Dr. Ozeair Abessi, Assistant Professor of Babol Nooshirvani University of Technology, Prof. Behrooz Abtahi, Director of RCOWA and Director of Iranian National Institute for Oceanography and Atmospheric Science (INIOAS), Ms. Fahimeh Foroughi, RCOWA Secretariate & Head of International Cooperation Office of INIOAS



## ORGANIZER

### Organizer:

Regional Education and Research Centre on Oceanography for West Asia (RCOWA)  
under the auspices of UNESCO

### Moral sponsors:

- Babol Nooshirvani University of Technology,
- Ramsar Regional Centre Central and West Asia,
- IORA Regional Centre for Science and Technology Transfer,
- Inter-Islamic Network on Oceanography (INOC), and
- IOC Regional Committee for the Central Indian Ocean (IOCINDIO)

## LECTURER

**Dr. Ozeair Abessi,**  
**Assistant Professor,**  
**Babol Noshirvani University of Technology, Babol, Iran**



**Dr. Ozeair Abessi**, Ph.D. is Assistant Professor of Water and Environmental Engineering at Babol Noshirvani University of Technology. Dr. Abessi's professional interests are in Environmental Fluid Mechanics and its application to the engineering design of marine outfalls for the disposal of wastewaters and desalination brine. During the last 15 years, he has been involved in some international research projects in USA, Canada, New Zealand, Brazil and Oman. Dr. Abessi has spent a sabbatical at UFPR, Brazil working with Dr. Tobias Bleninger on the fluid mechanics of inshore surface channel for brine discharges and also worked with Prof. Mark Davidson at University of Canterbury, New Zealand on the hydraulic of surface brine discharge in flowing waters. Dr. Abessi's last position was visiting research faculty at the Georgia Institute of Technology, USA, where he spent 3 years working with Prof. Philip Roberts on a project funded by United States Bureau of Reclamation (USBR) on the optimization of desalination brine diffuser. Dr. Abessi has lectured widely on outfall design and had an international talks and short courses at Sultan Qaboos University (SQU), Oman

and Ottawa University, Canada. He is presently a member of the IAHR/IWA joint Committee on Marine Outfall Systems. Dr. Abessi published several articles on the brine outfall design and contributed to IWA 2016 report on Global Trends & Challenges in Water Science, Research and Management that published every 10 year on the future of Water Science researches. Dr. Abessi wrote a chapter for Elsevier on Sustainable Desalination Handbook (2018) about Brine Disposal Management, Planning and Design and recently wrote Iran's Guideline for Environmental Studies of Coastal Desalination plants.

## LANGUAGE

English

## HEADLINES

- Environmental Impact of coastal desalination plants
- Sea water intakes and the design standards
- Brine discharge in costal desalination plants
- Discharge modeling and water quality standards
- Integral models and numerical modeling
- Turbulent flow and CFD simulation

## AGENDA

Time (Teheran Time, +4:30 GMT)		Outline
27 October- Day 1	11:00-11:10	Opening
	11:10- 12:00	<ul style="list-style-type: none"> <li>• <b>Environmental Impact of coastal desalination plants</b> <ul style="list-style-type: none"> <li>➤ Coastal desalination brine, Characteristics, Procedure and Environmental Impacts</li> <li>➤ Coatsal eco-sensitive areas, Siting regulations and Environmental Impact Assessment studies</li> </ul> </li> </ul>
	12:00-12:10	<b>Break</b>

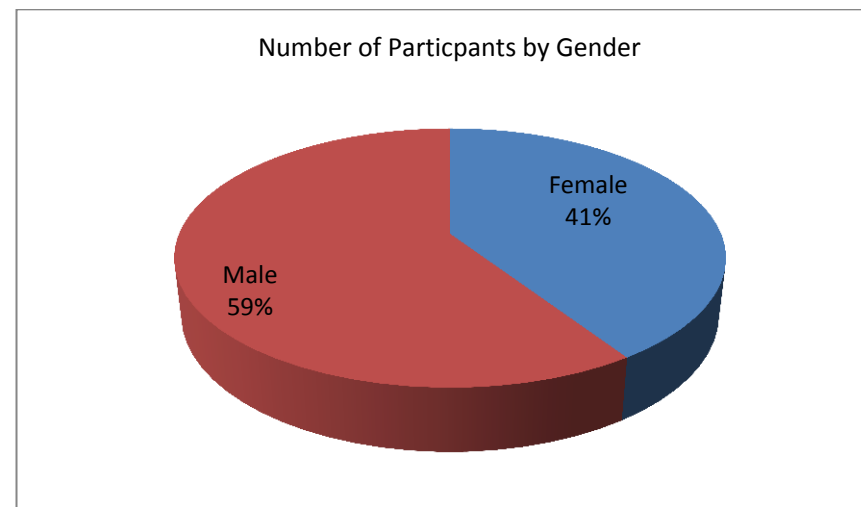
	12:10- 13:30	<ul style="list-style-type: none"> <li>• <b>Sea water intakes</b> <ul style="list-style-type: none"> <li>➤ An introduction to Open and Sub-surface intakes, Desalination most common sea water intake</li> <li>➤ Design standards, Guidelines and Modeling procedure</li> </ul> </li> </ul>
28 October – <b>Day 2</b>	11:00- 12:00	<ul style="list-style-type: none"> <li>• <b>Brine discharge in costal desalination plants</b> <ul style="list-style-type: none"> <li>➤ Marine outfall applications: capabilities and limitations</li> <li>➤ Brine characteristics, Standards and disposal methods</li> </ul> </li> </ul>
	12:00-12:10	<b>Break</b>
	12:10- 13:30	<ul style="list-style-type: none"> <li>• <b>Brine discharge modeling</b> <ul style="list-style-type: none"> <li>➤ Near field modeling, Physical Mixing process and Mixing Zone Analysis</li> <li>➤ Mixing theory and equations</li> </ul> </li> </ul>
29 October- <b>Day 3</b>	11:00- 12:00	<ul style="list-style-type: none"> <li>• <b>Integral models and numerical modeling</b> <ul style="list-style-type: none"> <li>➤ Modeling and simulation approaches, experimental results, Design Scheme and de facto standards</li> <li>➤ CORMIX Expert system for outfall design and discharge assessment,</li> </ul> </li> </ul>
	12:00-12:10	<b>Break</b>
	12:10- 13:30	<ul style="list-style-type: none"> <li>• <b>Turbulent flow and CFD simulation</b> <ul style="list-style-type: none"> <li>➤ Modeling of turbulent flow, RANS models.</li> <li>➤ Limitations and capabilities of current models</li> </ul> </li> </ul>
	13:30- 13:40	Closing



## PARTIICPANTS

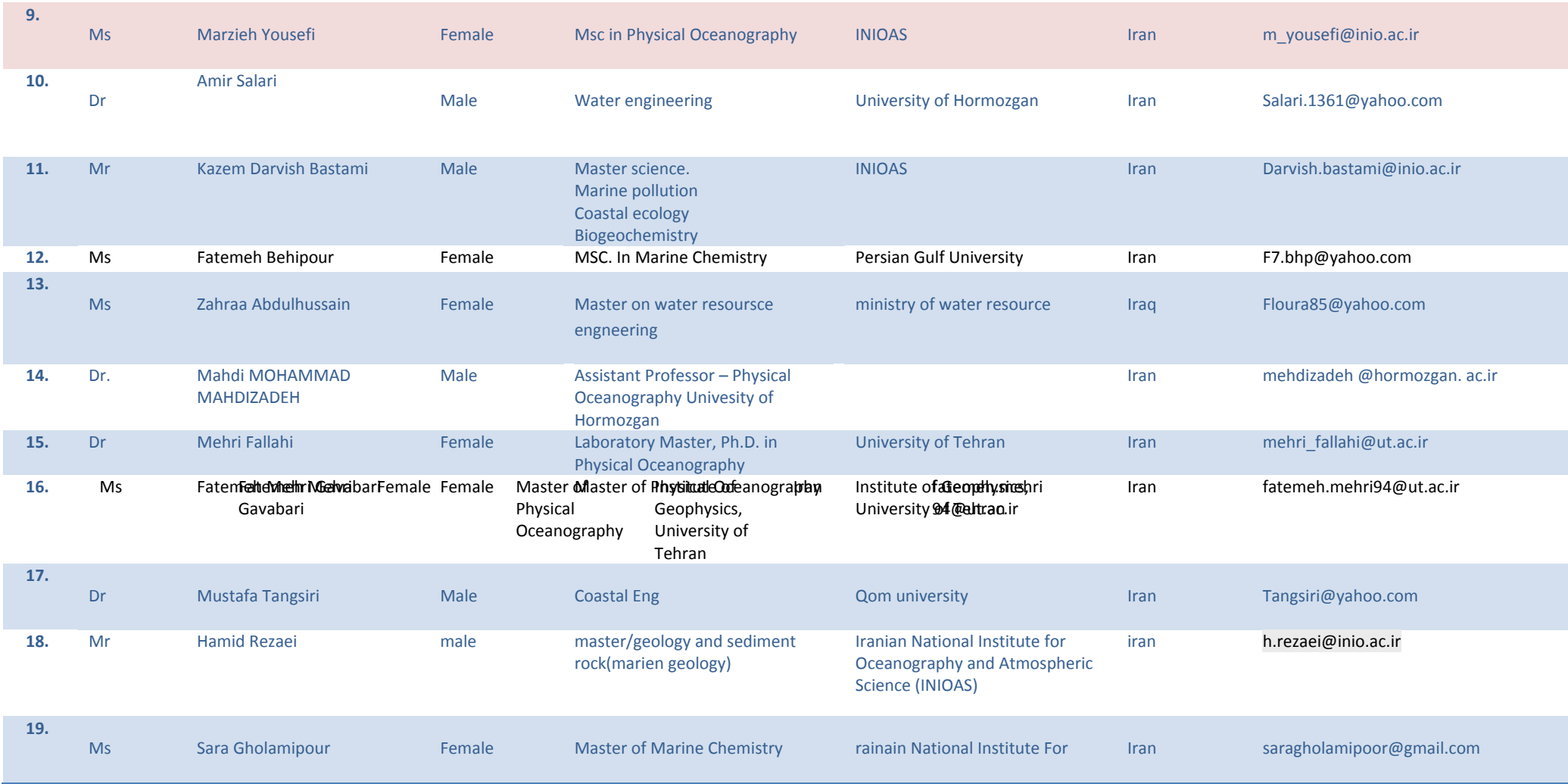
140 experts and students of the region registered and 75 users participated in the course.

The participants were from Iran, Oman, Kuwait, Yemen, Pakistan, Japan, Iraq, Egypt, Somalia, Russia, Madagascar and Malaysia.



### List of recived registrations.

	Title (Ms./Mr./ Prof. Dr.)	Full Name	Female/Male	Academic degree and Field of study	Institution/University	Country	Email
1.	Dr	Ahmed Abdelraheem Mohammed Elsayed Eladawy	Male	PhD Environemntal Engineering	Tokyo Institute of Technology	Japan	ahmed.eladawy@ejust.edu.eg
2.	Mr.	Jamal Radhawan Aid Alhinai	Male	Physical Oceanography	Civial Aviation Authority	Oman	<a href="mailto:j.alhinai@met.gov.om">j.alhinai@met.gov.om</a>
3.	Dr.	ALI BASSAL MAHMOOD	Male	PHD of Physicsal Oceanography	Institute of Marine Science/University of Szczecin.	Poland	ali.mahmood1970@yahoo.com
4.	Dr	Ali Mehdiinia	Male	Profssor of Chemistry, Environmental Chemistry	Iranian National Institute for oceanography and Atmospheric Science	Iran	mehdiniia@inio.ac.ir
5.	Dr.	Masoud Sadrinasab	Male	Physical Oceanography	Tehran Universty	Iran	masoud.sadri@ut.ac.ir
6.	MS	Somaye Abedi	Female	Master in analitycal chemistry	inioas	IRAN	sabedi48@yahoo.com
7.	Dr	Hossein Bagheri	Male	Marine geology	INIOAS	Iran	Baghery1@gmail.com
8.	Dr.	Gholamreza Mohammadpour	Male	Doctorate of Oceanography	INIOAS	Iran	Mohammadpour.g@inio.ac.ir





						Oceanography And Atmospheric Science	
20.	Mr.	Mohammad afarin	Male	Master of Geology - Sedimentology	National Institute of Oceanography and Atmospheric Sciences	Iran	Afarin.m@inio.ac.ir
21.	Ms	Nikta Mehdipour	Female	PhD Student in Fisheries - Aquatic Production and Exploitation	Golestan/Gorgan University of Agricultural Sciences and Natural Resources	Iran	mehdipournikta@gmail.com
22.	Dr	Mohamed Ibrahim Abdelmoneim Ibrahim	Male	PhD Marine Chemistry	- National Institute of Oceanography and Fisheries. -Organic Chemistry Hiroshima University, Japan	Egypt	ibrahimmohamed2030@gmail.com
23.	Dr	Ahmed Rabie Elgendy	Male	Researcher in Marine Geology	National Institute of Oceanography and Fisheries	Egypt	ah_algendy@yahoo.com
24.	Mr	Davoud Jahedi Vaighan	male	Masters Analytical Chemistry	Iranian National Institute for Oceanography and Atmospheric Science	Iran	Davoudjahedi36@gmail.com
25.	Dr	Salman Malakpour Kolbadinezhad	M	PhD	Assistant Prof in the Iranian Fisheries Sciences Research Institute (IFSRI), Cold-Water Fishes Research Center (CFRC), Tonekabon	Iran	s.malakpour@gmail.com
26.	Mr	Jalil Sabkara	Male	B.Sc.	National Inland Water Aquaculture Institute	Iran	jsabkara@yahoo.com

27.	Ms	Sohila khodabandeh	F	B.Sc., Chemistry	Azad	Iran	sohilakhodabandeh@yahoo.com
28.	Dr.	Islam Radwan	Male	PhD, Environmental Engineering	National Institute of Oceanography and Fisheries	Egypt	chemsolm@gmail.com
29.	Ms	Sepideh Khatib Haghighi	Female	Master of science Microbiology	Inland Waters Aquaculture Research Center ,Iranian Fisheries Science Research Institute (IFSRI)	Iran	sepidehkhatib@ yahoo.com
30.	Dr.	Mustafa Sami Faddagh Ziyadi	male	doctorate... Assist. Prof.... Academic scientist	*Marine Science Centre... University of Basrah	iraq	mustafa.faddagh@uobasrah.edu.iq
31.	Miss	Nilofar Saki	Female	MA	Khorramshahr University of Marine Sciences and Technology	Iran	Nilofar_saki_67@yahoo.com
32.	Dr.	Razyeh Lak	Female	Ph.D. Marine Sedimentology, Lake brine	Research Institute for Earth Sciences, Geological Survey of Iran	Iran	Lak_ir@yahoo.com
33.	Ms.	Leyla AbdollahBeglou	Female	M.Sc. student of Environmental Geology	Kharazmi University (Tehran)	Iran	leylabeglou@gmail.com
34.	Mr	Kamran Koohestani	Male	M.Sc. in Offshore Structures	Saman Ab Sarzamin Consulting Engineers Co.	Iran	kamrankoohestani@gmail.com
35.	Ms.	Amal Abdirahman Omar	Female	Bachelor degree of Marine Science	city university	Somalia	Amalabdi1225@gmail.com
36.	Mr.	Abdiraz ak Hassan Abdullah i	Male	Bachelor degree of Marine Science	City University of Mogadishu	Somalia	abdirasakh haasa914@gmail.com

37.	Mr.	Ruhollah Abdi	Male	PhD Student in Civil Engineering- Environmental Engineering- Amirkabir University of Technology	Department of Environment – Waste Management Office	I.R.Iran	ruholla.abdi@gmail.com
38.	Mr.	Ruhollah Abdi	Male	PhD Student in Civil Engineering- Environmental Engineering- Amirkabir University of Technology	Department of Environment – Waste Management Office	I.R.Iran	ruholla.abdi@gmail.com
39.	Mr	Abdi aziz Abdullahi omar	male	Bachelor's Student	Somalia national university	Somalia	abdiazizabdulahiomar@gmail.com
40.	Ms	Somayeh Farhangbaftani	female	Ph.D STUDENT	KMSU/KHO RRAMSHAH R MARINE SCIENCE AND TECHNOLOG Y	IRAN	Baran.farhang@gmail.com
41.	Dr.	Garudachari Bhadrachari	male	PhD in Chemistry, Sear Water Disalination- Assistant Research Scientist	National Institute of Technology, karnataka, IndiaWorking at: Water Research Center, Kuwait Institute for Scientific Research	Kuwait	<a href="mailto:garuda.achar@gmail.com">garuda.achar@gmail.com</a> , <a href="mailto:bgarudachari@kisir.edu.kw">bgarudachari@kisir.edu.kw</a>
42.	Dr.	Mansour Ahmed	male	PhD in Chemical engineering	Swansea University, UK- Working at: KuwaitInstitute for Science Research	Kuwait	mahmed@kisir.edu.kw
43.	Dr.	Ghada Al Nuwaibit	Female	PhD in Chemical engineeringand analytical sciences	University of Manchester- Working at: KuwaitInstitute for Science Research	Kuwait	gnwibit@kisir.edu.kw
44.	Mr.	Ali Al Odwani	male	BSc in Mechanical Engineering	University of Arizona, USA- Working at: KuwaitInstitute for Science Research	Kuwait	aodwani@kisir.edu.kw

45.	Ms.	Maha Atallah Salman	Female	MSc in Chemical Engineering	Kuwait University- Working at: KuwaitInstitute for Science Research	Kuwait	matallah@kisir.edu.kw
46.	Mr.	Mohammad Al Tabtabaei	Male	MSc in Mechanical Engineering	University of Leeds, UK- Working at: KuwaitInstitute for Science Research	Kuwait	mtabtaba@kisir.edu.kw
47.	Dr.	Hassan K. Abdulrahim	Male	PhD in disaliniation	Cairo University	Kuwait	habdulrahim@kisir.edu.kw
48.	Mr	Mohamed Mohamud Salah	Male	Marine Seincce and Fisheries	City unversity	Somalia	mmsalah440@gmail.com
49.	* sivat kumar	*Abdullahi Abdisalam Sabrie	male	doing bachelor	city university	Somalia	<a href="mailto:suldankaweyn@gmail.com">suldankaweyn@gmail.com</a>
50.	*Mr.	*waleed Qassim Assad Alshaubi	Male	MSc - Animal Physiology.	Aden Univers	Yemen	wlydalshyby4@gmail.com
51.	Miss	Kholood Salem Abdullah Baquhaizel	Female	Bachelor's degree in Chemical Engineering	Hadhramout University	Yemen	khsbaqu@gmail.com
52.	Mr.	Ahmed Saeed Suliman Abdulla	Male	Researcher in the environment of Socotra	Socotra Environmental Protection Office	Yemen - Socotra Island	soc.niase@gmail.com
53.	Ms.	Nooshin Teymourpour	Female	MA at Diplomacy	Ministry of Foreign Affairs	Iran	nooshin.mfa@hotmail.com
54.	Dr	Abdulraqeb Al-Okaishi	Male	Doctor in Forest Phytology	Environmental Protection Authority	Yemen	soco7748@gmail.com
55.	Ms	Anisah R. A. Basunbol	Female	Researcher Bacar Master Environmental Science,(Drinking watet)	EPA-Yemen	Yemen	anbasunbul@gmail.com
56.	Ms	Maryam malekpouri	Female	Managmet Environment	Hormozgan environmental	Iran	Maryam.malekpoor@gmail.com

department							
57.	Mr	Amir abbas Ahmadi	MALE	Msc	IRAN Department of enviroment	IRAN	Amashhadi56@yahoo.com
58.	Ms.	Khadije Meshgin	Female	MSc. Geography	Department Of Environment	Iran	K_meshgin@yahoo.com
59.	Dr	Kamran nasirahmadi	Male	Gorgan University of Agricultural Sciences and Natural Resources	Environmental Science and Engineering	Iran	Nasirahmadi.k@gmail.com
60.	Mr	Seyyede maryam hosseini	female	Department of Marine Biology	Tehran University of Research Sciences	iran	Maryam37_ho@yahoo.com
61.	Prof.	Mohammad Nakhaei	Male	PhD Hydrogeology	Kharazmi University	Iran	nakhaei@khu.ac.ir
62.	Ms	Raziyeh Mirzajani	Female	Master's Natural Resources	Department of Environment-International Affairs and Conventions Center	Iran	Razie.mirzajani65@yahoo.com
63.	Dr.	Maryam Ehsanpour	Female	Marine biology- PhD	Hormozgan environmental department	Iran	M_ehsanpour80@yahoo.com
64.	Ms	Leyla bagri	female	MA climatology	Department of Invironment	Iran	leylabagri@yahoo.com
65.	Ms	Fahimeh heydari	female	Master of Agricultural Biotechnology	Ferdowsi university/ Department of Environment	Iran	fahimehheidarigharehsoo@gmail.com

66.	Mr.	Salman najfi babadi	Male	Master of Marine Environment	University of hormozgan	IRAN	salnjf@gmail.com
67.	Ms	marina Faisal Ahmed abdu	Female	Bachelor of Environments science BSE	Faculty of Marina science and environments	Yemen	marinabox11@gmail.com
68.	MS	Golshan Ghasemi	Female	Master of Natural Resources Engineering - Fisheries - Aquaculture	Environmental Protection Organization - fars	Iran	Farswetland.doe@yahoo.com
69.	mr	abdoolahmansouri	male	Masters	Tabriz Azad University	iran	Abdolah.20m@gmail.com
70.	Ms	Mohammed Abdullah Saad Hasan	Male	Master degree in Marine Sciences*	Astrakhan University of fishery	Russia	Mes_msaad@yahoo.com*
71.	Dr	Alireza Reyshahri	male	PhD in aquaculture	Khorramshahr University of Marine Scienc and Technology	iran	reyshahry@gmail.com
72.	MS	Robabeh Karimi	Female	Master of Environmental Engineering - Water and Wastewater	Environmental Protection Organization	Iran	Gh_amir57@yahoo.com
73.	Mr.	Ali Ghamary Zamharir	Male	MSC of Sea and Coastal Environmental Engineering	University of Tehran	Iran	<a href="mailto:ali.ghamary@ut.ac.ir">ali.ghamary@ut.ac.ir</a> <a href="mailto:aliust2012@gmail.com">aliust2012@gmail.com</a>

74.	Dr.	Zahra Lotfi	Female	Ph.D. of Analytical Chemistry	General Department of Environment- Semnan Province	Iran	Zlotfi89@yahoo.com
75.	Dr.	Seyyed shafi Mousavi	Male	Ph.D & Climatology Natural Geography	Department of Environment / Tarbiat Modasres University	Iran	Shafi.moosavi@gmail.com
76.	Mr.	Arash Haghshenas	Male	PhD Candidate in Environmental pollution	National Shrimp Research Institue	Iran	a.haghshenas@areeo.ac.ir
77.	Mr	Atabak Nikfar	Male	Bachelor of Public Administration/ Natural resources	environmental officer	Iran	atabaknikfar@gmail.com
78.	Mr	Afshin Rezapour	Male	master of science	Environment al officer	Iran	afshinrezapour2020@gmail.com
79.	Mr	javad amarloo	Male	Master of enviornmental pullotion	DOE	IRAN	javadamarlo@gmail.com
80.	Ms	Hamideh Rezaei	Female	Master of Geography and Urban Planning	DOE	IRAN	hamidehrezaei774@gmail.com
81.	Ms.Abbasi	Faezeh abbasi rostami	female	Master of science in fisheries discipline	University of tehran	iran	faezehabbasi@ut.ac.ir
82.	Mr	Mohamad Nosrati	Male	Bachelor	Environmental Protection	iran	ako.nosrati@gmail.com
83.	Mr.	Salman najfi babadi	Male	Master of Marine Environment	University of hormozgan	I.R.IRAN	salnjf@gmail.com

84.	Mr	Ali abouei mehrizi	male	Master of coastal engineering	DOE	iran	Ali.abouei87@yahoo.com
85.	Dr.	Maryam Salimizadeh	Female	Water Soil pollution -Chemistry	DOE Environment	IRAN	Maryam.salimizadeh@gmail.com
86.	Mr	Mohamad Barani Pourmoghadam	Male	MS Student of Oceanography Phsics	Institute of Geophysics, University of Tehran	IRAN	Mohamad.barani.pm@ut.ac.ir
87.	Ms	VAOSOLOMALALA Yvette Maria	Female	Advanced degree in chemical engineering/water and environment	National Centre For Environmental Research (CNRE)	Madagascar	vaosolomalala@gmail.com
88.	Ms	RABENIRINA Harilanto Miarantsoa	Female	Master II in Chemistry / Water and Environmental Engineering	National Centre For Environmental Research (CNRE)	Madagascar	miari_lanto@yahoo.fr
89.	Dr	Islam javedankherad	Male	pollution	DOE: Department Of Environment	IRAN	ijavedan@gmail.com
90.	Ms.	Parisa fatehi	female	Senior of water resource management engineering	Environmental protection organization	iran	Parisa.pfti@gmail.com
91.	Ms.	Firooze Biria	Female	Master of biotechnology	The Head Office of the Tehran Province Environmental	Iran	firoozebiria88@gmail.com
92.	Dr.	Zahra Lotfi	Female	Ph.D. of Analytical Chemistry	General Department of Environment- Semnan Province	Iran	Zlotfi89@yahoo.com



93.	Mr.	salman	najfi babadi	Master of Marine Environment	University of hormozgan	I.R.IRAN	salnjf@gmail.com
94.	Mr	Ali abouei mehrizi	male	Master of coastal engineering	DOE	iran	Ali.abouei87@yahoo.com
95.	Mr	Seyed Mohammad Mehdi Hashemi	Male	Bachelor of Environmental Engineering	Shahid Khiabani Higher Education Center of Zahedan	I.R.Iran	mahdy.smmh@yahoo.com
96.	Ms	Saira Ishaq	Female	M Phill Biological Oceanography	National Institute of Oceanography of Pakistan	Islamic Republic of Pakistan	<a href="mailto:ishaqsaira@hotmail.com">ishaqsaira@hotmail.com</a> , sairaishaqst@gmail.com
97.	Dr	Sanobar Kakhkashan	Female	PhD Environmental Science	National Institute of Oceanography of Pakistan	Islamic Republic of Pakistan	sanoberchem@yahoo.com
98.	Ms	Hamideh Rezaei	Female	Master of Geography and Urban Planning	DOE	IRAN	hamidehrezaei774@gmail.com
99.	Mr	Hosein Harati	Male	master of range management	DOE	IRAN	Harati.hossein@yahoo.com
100.	Ms	Mona mohammadi	Female	*Bachlor of enviornment	DOE	IRAN	m.mohamadi6939@yahoo.com
101.	Ms	Zahra. shahriari	Female	Bachlor of plant biology	DOE	IRAN	Z.shariari@yahoo.com

102.		Ahmad reza Kalamati	Male	دکتری منابع طبیعی / بیابانزدایی	DOE	IRAN	<a href="mailto:Kalamati_ar@yahoo.com">Kalamati_ar@yahoo.com</a>
103.		سید جواد عمارلو	Male	کارشناسی ارشد آلودگی محیط زیست	DOE	IRAN	<a href="mailto:javadamarlo@gmail.com">javadamarlo@gmail.com</a>
104.		حمید رضا جاوید	Male	کارشناسی ارشد زمین شناسی زیست محیطی	DOE	IRAN	<a href="mailto:javidhamid@gmail.com">javidhamid@gmail.com</a>
105.		فاطمه رضایی پیرزمان	Female	کارشناسی ارشد آلودگی دریا	DOE	IRAN	<a href="mailto:Pirzaman_fr@yahoo.com">Pirzaman_fr@yahoo.com</a>
106.		احمد وحدانی	Male	کارشناسی ارشد آلودگی محیط زیست	DOE	IRAN	<a href="mailto:Vahdaniahmad949@yahoo.com">Vahdaniahmad949@yahoo.com</a>
107.		رضا شکاریان	Male	کارشناسی ارشد آبخیزداری	DOE	IRAN	<a href="mailto:javidhamid@gmail.com">javidhamid@gmail.com</a>
108.	Ms	Somayeh Khooshmas	Female	Master of Water Engineering	Urmia University	IRAN	<a href="mailto:S_khoshamad@yahoo.com">S_khoshamad@yahoo.com</a>
109.	Dr	Omid	Bonabi	Master of Drainage Irrigation	Urmia University	IRAN	<a href="mailto:Bonabi_om@yahoo.com">Bonabi_om@yahoo.com</a>
110.	Mr	Behzad	Shirpanjeh	Bachelor of rangeland management	Comprehensive applied science of Urmia	IRAN	<a href="mailto:Behzadshirpanjeh@gimal.com">Behzadshirpanjeh@gimal.com</a>
111.	Mr	Maysam Ghasemi	Male	M.Sc. in Environmental management	Hormozgan Provincial Office of Department of Environment, Bandar Abbas	Iran	<a href="mailto:Maysamghasemi26@gmail.com">Maysamghasemi26@gmail.com</a>
112.	Ms	Fahimeh Goudarzi	Female	MSc in Marine Biology	Department Of Environment -	Iran	<a href="mailto:Fg1360@gmail.com">Fg1360@gmail.com</a>

Hormozgan Province

113.	Ms.	Tayebeh Shahi	Female	M.Sc. in Environmental Science ,Habitat & Bioiversity	Hormozgan Provincial Office of Department of Environment, Bandar Abbas	Iran	Shahi.tayebe@yahoo.com
114.	Dr.	Seyedeh Laili Mohebbi-Nozar	Femail	Doctoral degree in Marine Toxicology & Pollution	USM	Malaysia	lmohebbi@yahoo.com
115.	Dr.	Mohammad Seddiq Mortazavi	Male	Doctoral degree in Chemistry	Persian Gulf and Oman Sea Ecological Research Institute	Iran	mseddiq1@yahoo.com
116.	Mr	روح اله احمدی پاکوه	Male	کارشناسی ارشد محیط زیست	DOE	Iran	Ruholah.ahmadi@gmail.com
117.	Ms	ندا پاکزی نژاد	Female	کارشناسی ارشد محیط زیست	DOE	Iran	Tina.pazoki@gmail.com
118.	Mr.	*Yusuf Hassan Mohamed	Male	Studying Marine Science in Bachelor's degree	Somali National University (SNU)	Somalia	yuusufxassan39@gmail.com
119.	mr	abdirashid mohamed ali	male	studying marine science in bachelor,s degree	somali national university	somalia	<a href="mailto:abdirashid7679@gmail.com">abdirashid7679@gmail.com</a>
120.	Mr.	*Ahmed Abdi Mohamed	Male	*Studying Marine Science in Bachelor's degree	Somali National University (SNU)	Somalia	ahmedgadaken@gmail.com

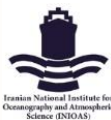
121.	Ms	Masoomah takhti	Female	environmental engineering	Islamic Azad University of Bandar Abbas	Iran	Masomeh.takhti@doe.ir
122.	Dr.	Sohrab Mazloomi	Male	PhD – Environment Pollution	DOE Marine Environment Deputy	Iran	Sohrab.mazloomi@gmail.com
123.	Mr	Ali Saber	Male	Msc	DOE	Iran	Alisaber.doe@gmail.com
124.	Dr	Mahmood Sinaei	Male	PHD, Marine biology	Islamic azad university, chabahr branch	Iran	oceanography.sina@gmail.com
125.	Dr	Abdulraqeb Al-Okaishi	Male	Doctor in Forest Phytology	Environmental Protection Authority	Yemen	soco7748@gmail.com
126.	Ms.	mohammed awadh alghurabi	Male	marine biology	Hadhramaut university	Yemen	mohammedalghurabi.ma@gmail.com
127.	Miss	Kholood Salem Abdullah Baquhaizel	Female	Bachelor's degree in Chemical Engineering	Hadhramout University	Yemen	khsbaqu@gmail.com
128.	Dr	Afsaneh Asgharzadeh	Female	Environment (Biodiversity)	Department of Environment	Iran	Afsaneh_asgharzadeh@yahoo.com
129.	* Mr	* Omar Ismail Mahmud	Male	* Bachelor degree of Marine Science	* City University of Mogadishu	* Somalia	omarosmaan09@gmail.com

130.	Ms	Urooj Aijaz	Female	Ph.D Scholar ( Blue Economy)	*Bahria University Karachi	*Pakistan	UroojAijaz.bukc@bahria.edu.pk
131.	Dr	SEYED HAMZEH MIRKHALILI	MALE	Doctor of Civil and Environmental Engineering	INIOAS	Iran	Mirkhalili.phd@gmail.com
132.	Mr	Dalal M Alsaraie	Male		ROPME	Kuwait	d.alsaraie@epa.org.kw
133.	Mrs	Zahraa Ali Al-Hashemi	Female		ROPME	Kuwait	z.a.alhashemi@epa.org.kw
134.	Mrs	Bibi A-saleh	Female		ROPME	Kuwait	b.alsaleh@epa.org.kw
135.	Mrs	Sarah Ali Almutairi	Female		ROPME	Kuwait	s.almutairi@epa.org.kw
136.	Mr	Ramin Shadi	Male		INIOAS	Iran	raminshadi@yahoo.com
137.	Mr	<b>RANDRIANANTENAINA Jean Prosper</b>	Male	DEA in oceanography at the Halieutic Institute of Marine Sciences (IHSM) Tulear/Madagascar , option: fishing and aquaculture	CFIM /Membre CNGIZC	Madagascar	<a href="mailto:rjtosper@gmail.com">rjtosper@gmail.com</a>
138.	Mr	<b>BAKO Marcel</b>	Male	Master of geography - University of Toamasina/Madagascar	CFIM/Membre CNGIZC	Madagascar	<a href="mailto:marcel.bako3101@gmail.com">marcel.bako3101@gmail.com</a>
139.	Mr	<b>RAKOTONIARIVO Rodin</b>	Male	DEA in geography, University of Antananarivo /Madagascar	SAGE (Service d'Appui à la Gestion de l'Environnement)/ Membre CNGIZC	Madagascar	<a href="mailto:rodin.sage@outlook.com">rodin.sage@outlook.com</a> <a href="mailto:rakotosage@gmail.com">rakotosage@gmail.com</a>

140.

Mr.	Hery Razafimamonjiraibe	Male	Master 2 in Applied Economics, Specialization in Economics and Management of the Environment and Environmental Impacts (Montesquieu Bordeaux IV University)	International NGO "Blue Ventures"	Madagascar	*herylova@blueventures.org
-----	-------------------------	------	--	--------------------------------------	------------	----------------------------

















IOC Regional  
Committee for the  
Central Indian Ocean  
(IOCINDIO)



## POSTER



# REGIONAL TRAINING COURSE ON: COASTAL DESALINATION INTAKE AND BRINE DISPOSAL SYSTEM- PLANNING DESIGN AND IMPLEMENTATION



- Environmental Impact of coastal desalination plants
- Sea water intakes and the design standards
- Brine discharge in costal desalination plants
- Discharge modeling and water quality standards
- Integral models and numerical modeling
- Turbulent flow and CFD simulation

**Dr. Ozeair Abessi,**  
Assistant Professor,  
Babol Noshirvani University of  
Technology, Babol, Iran

Tehran time  
**11:00 AM-13:30 PM**  
**27-29 OCTOBER 2021**  
**ONLINE - EVERY DAY**

\* Registration Deadline: 16 October 2021  
\*The link of the training course will be sent to the email of the eligible participants on 21 October.

Email address: [inioas@inio.ac.ir](mailto:inioas@inio.ac.ir)