International Workshop on

WATER PURIFICATION TECHNOLOGIES, ARSENIC REMOVAL FROM GROUNDWATER AND INTEGRATED WATER MANAGEMENT

(HYBRID MODE)

28-30 JUNE 2022

JOINTLY ORGANISED BY

CENTRE FOR SCIENCE & TECHNOLOGY OF THE NON-ALIGNED AND OTHER DEVELOPING COUNTRIES (NAM S&T CENTRE)
NEW DELHI, INDIA

CSIR-CENTRAL SALT AND MARINE CHEMICALS RESEARCH INSTITUTE (CSIR-CSMCRI)
BHAVNAGAR, INDIA

PARTIALLY SUPPORTED BY

Group of 77 (G-77) under Perez-Guerrero Trust Fund for Economic and Technical Cooperation for South-South Cooperation (PGTF)

ANNOUNCEMENT

OVERVIEW

The Centre for Science and Technology of the Non-aligned and Other Developing Countries (**NAM S&T Centre**) in association with the CSIR-Central Salt and Marine Chemicals Research Institute (**CSIR-CSMCRI**), Bhavnagar announces the organisation of an International Workshop on "**Water Purification Technologies, Arsenic Removal from Groundwater and Integrated Water Management"** to be held during **28-30 June, 2022.** CSMCRI will host the Workshop at Bhavnagar, Gujarat, India ***in Hybrid Mode***.

The Workshop is being organised by the Centre as one of the activities under the collaborative project titled **"*Reducing Arsenic Exposure from Food and Water in Developing Countries – A Road Map for Technological Solutions for the Future*"** partially supported by the Group of 77 (G-77) under its Perez-Guerrero Trust Fund for Economic and Technical Cooperation for South-South Cooperation (PGTF). Implementation of the project will be monitored by the UN Office for South-South Cooperation (UNOSSC), New York, USA.

BACKGROUND

The ***Sustainable Development Goal (SDG) – 6*** aims to achieve universal and equitable access to safe and affordable drinking water for all by 2030 and improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and pollutants. The Goal also calls for implementation of integrated water resources management at all levels, including through trans-boundary cooperation and expand international cooperation and capacity-building support to developing countries in water and sanitation-related programs and activities.

In this connection, it is important to note that the use of water contaminated with Arsenic for drinking, food preparations and irrigation of food crops poses the greatest threat to public health. The risk of Arsenic contamination in ground water continues to increase in many parts of the world, especially in the developing countries. Its sources and effects are multiple and its diffusion in natural resources including food and groundwater requires a multipronged assessment and appropriate policy initiatives for its mitigation.

Chronic Arsenic exposure is associated with many human health risks, including skin lesions and cancers of the liver, lung, bladder and skin. It is also associated with many non-cancer health conditions, such as cardiovascular diseases, adverse reproductive outcomes, neurological disorders and impaired cognitive development in children. According to one estimate, nearly 100 million rural people are affected by exposure to Arsenic in food chain and drinking water in Asia. The areas that have the worst documented contamination of groundwater by Arsenic are in South Asia, and the toxin poses a severe problem in Bangladesh, India and Nepal. The risk of Arsenic contamination in ground water continues to increase in many other developing countries. Due to the lack of awareness about the problem, the silent presence of higher Arsenic content in ground water is left un-noticed which creates a latent magnification of the

problem in the African as well as in many other developing countries. However, the sources and effects of Arsenic contamination are multiple and diffused in nature and require a detailed assessment and formulation of required policies.

So far, very few efforts have been made on the removal of Arsenic from ground waters in many developing countries. While a number of technologies for Arsenic removal have been developed in different parts of the world, we need to consider variations in sources and characteristics of Arsenic polluted ground water to find an appropriate cost effective technological solution for the same. In addition, differences in the socio-economic and literacy conditions of people also need to be considered. Based on the assessment, efforts should be made for improving the effectiveness of Arsenic removal, making the technology user friendly, overcoming maintenance problems, reducing the cost of the system, and resolving the toxic sludge management issues.

THE PROJECT

In order to address the above issues, the NAM S&T Centre submitted a project proposal entitled **"Reducing Arsenic Exposure from Food and Water in Developing Countries – A Roadmap for Technological Solutions for the Future"** for support under Perez-Guerrero Trust Fund (PGTF) of G-77 - which aims to cope with the serious consequences of Arsenic contamination of ground water in developing countries and provide a roadmap for low cost technological solutions for the removal of Arsenic from the groundwater in order to minimize the exposure of people to this toxic element through food and water. Based on the evaluation by a Committee of Experts, the project was subsequently approved by G-77.

The objectives of the Project are:

- To create awareness among the policy makers in the developing countries about the danger of Arsenic exposure to the population.
- Capacity building through human resource development and transfer of technologies, e.g. Subterranean Arsenic Removal (SAR) technology and other relevant technologies for remediation of Arsenic contaminated ground water.
- Promoting a mechanism of exchange of scientific information and technical cooperation among the developing countries with regard to low cost Arsenic removal technologies from groundwater.
- Documentation and dissemination of the current status of Arsenic contamination of groundwater in the developing countries, prevailing remediation methods and practices, and a set of inter-governmental policy recommendations on various technological options for Arsenic removal from groundwater.

As a part of the Project, the Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) will organize an **International Workshop** on "**Water Purification Technologies, Arsenic Removal from Groundwater and Integrated Water Management"** jointly with the CSIR-Central Salt and Marine Chemicals Research Institute (CSIR-CSMCRI), Bhavnagar, India with participation of officials from developing countries working on drinking water supply, management and water treatment;

scientists and researchers working on Arsenic remediation of groundwater and technology developers from various industries/institutions to discuss the status of Arsenic contamination problem and remedial measures.
Purpose of the Workshop is to facilitate exchange of knowledge & expertise and generate sufficient information and materials through the status papers and scientific articles presented by the participants from various countries which will be used for preparing a State-of-the-Art Report that will be one of the deliverables of this G-77 sponsored Project.

TOPICS TO BE COVERED

Broadly, the Workshop will cover the following topics:

(1) Status of Clean Water Supply in the Developing World towards Achieving SDG 6
(2) Water Purification Technologies Currently being Used
(3) Arsenic Contamination and Removal of Arsenic from Groundwater
(4) Arsenic Exposure on Food and Water in the Developing World
(5) Health Issues due to Arsenic Contamination
(6) Any other relevant issues

PARTICIPATING COUNTRIES

Thirteen Member Countries of the NAM S&T Centre, viz. Bhutan, Egypt, India, Iran, Malaysia, Myanmar, Nepal, Nigeria, Palestine, South Africa, Sri Lanka, Togo and Zambia have already confirmed their participation in this collaborative project. Other Member Countries of the NAM S&T Centre and any other developing countries are also welcome to nominate representatives to participate in the Workshop.

PROGRAMME OF THE WORKSHOP

The International Workshop will be held during **28-30 June, 2022**. The session wise programme would be sent to the participants in due course.

RESOURCE PERSONS

Resource persons for the workshop will comprise eminent experts from India and other developing countries.

ABOUT THE ORGANISERS

NAM S&T Centre, New Delhi

The Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre; www.namstct.org) is an inter-governmental organization with a membership of 47 countries spread over Asia, Africa, Middle East and Latin America. The Centre was set up in 1989 in New Delhi, India in pursuance of recommendations of various NAM Summit Meetings for the promotion of South-South Cooperation in Science and Technology. The Centre undertakes a variety of programmes, including organization of workshops, symposiums,

meetings & training courses and implementation of collaborative projects and offers short-term research fellowships to the scientists and technologists from the developing countries in association with various Centres of Excellence. The Centre also brings out technical books and other scientific publications in different subjects. These activities provide opportunity for Scientist-to-Scientist contact and interactions; familiarizing participants on the latest developments and techniques in the subject areas; identification of the requirements of training and expert assistance; locating technologies for transfer between the members and other developing countries, dissemination of S&T information etc. The Centre also encourages academic-research-industry interactions in the developing countries through its "NAM S&T-Industry Network".

CSIR-CSMCRI, Bhavnagar

CSIR-CSMCRI, Bhavnagar-364002, Gujarat, India is a pioneer research institute under the umbrella of the Council of Scientific & Industrial Research (CSIR), New Delhi, and working to meet the demand for clean water by water purification and desalination. Membrane and resin based water purification processes are the alternatives to conventional processes and have acquired a significant position by replacing many of the conventional unit operation processes. The membrane processes like, reverse osmosis (RO), nanofiltration (NF), ultrafiltration (UF), hollow fibres, microfiltration, electro-dialysis (ED) and ion selective resins are being used to remove a wide range of components, ranging from suspended solids to pathogens, small organic compounds and dissolved ions from contaminated water. In this area, the institute has developed several technologies for water purification/desalination and has commercialized these technologies. Recently CSIR-CSMCRI has designed and developed an innovative Desalination and Water Purification Mobile Unit most suitable for mitigating acute drinking water problems during natural calamities. Self-sustainable plant mounted on a Van consists thin film composite reverse osmosis membrane technology unit (for seawater/brackish water desalination) and ultrafiltration membrane technology unit (for water purification/disinfection) with high recovery and flux. These technologies are integrated and deployed in this mobile plant that delivers WHO standard water from any water source that was available at the site during several natural calamities.

PARTICIPANTS

The workshop has been primarily designed for the Country Coordinators designated for this project by the Focal Points of the NAM S&T Centre in its Member Countries or their representatives nominated by these countries; and suitable Experts/Water Technology Professionals nominated by any other countries to participate in the Workshop.

While a few selected Indian participants will be invited to attend the Workshop at CSIR-CSMCRI Bhavnagar physically, all the participants from other countries and other participants from India will attend the Workshop virtually.

A **pre-condition** for participation in the Workshop is that the participants must present preferably a **Country Status Report** or a scientific article during the Workshop.

The country status reports and other study material presented during the workshop will be compiled along with articles received from other experts and will be brought out in the form of a **"Consolidated State-of-the-Art Report"**.

IMPORTANT DATES

Date of the Program	**28-30 June 2022**
Submission of Application Starts	**9 May 2022**
Last Date for Submission of Application	**14 June 2022**
Confirmation to Selected Applicants	**20 June 2022**
Communication of Virtual Platform Details (Link)	**22 June 2022**

English will be the official language of the Program.

SUBMISSION OF NOMINATIONS

Applications for participation are required to be submitted in the prescribed form (as given below) to the NAM S&T Centre as early as possible but latest before **14 June 2022**. The form should be completed in all respects and sent along with other documents as e-mail attachments to the Director General, NAM S&T Centre at namstcentre@gmail.com.

The following documents must be submitted as e-mail attachments:

a) Filled in Nomination Form (Blank form **enclosed**)

b) Opinion (a short paragraph; **in MS-Word format**) how you qualify to participate in the Workshop

c) A short CV **(maximum two pages**;**in MS-Word format**) [Format **Enclosed**]

d) An **Extended Abstract** (in MS-Word only) of the Paper that would be presented at the Workshop – **Preferably Country Status Report** or a Scientific Article.

***Note*:** The documents at (ii), (iii) and (iv) above must be in **MS-Word format** only; PDF or image files will not be accepted. Hard copies of the Application Form and the above attachments are NOT REQUIRED to be submitted.

PRESENTATION OF COUNTRY STATUS REPORT

As indicated above, each participant will be required to present a country status report relevant to the G-77/PGTF Project during the Workshop. Scientists/researchers may also present a scientific article on "Technologies for Arsenic Removal from Groundwater".

CONFERENCE SECRETARIAT

CONTACT DETAILS

NAM S&T CENTRE

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CSIR-CSMCRI

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CENTRE FOR SCIENCE AND TECHNOLOGY OF THE NON-ALIGNED AND OTHER DEVELOPING COUNTRIES
(NAM S&T CENTRE)

International Workshop
On
Water Purification Technologies, Arsenic Removal from Groundwater and Integrated Water Management

CSIR-CSMCRI, Bhavnagar-364002, Gujarat, India

(In Hybrid Mode)

28-30 June 2022

APPLICATION FORM

PHOTO

PLEASE TYPE OR USE BLOCK CAPITALS (NO COLUMN SHOULD BE LEFT BLANK)

SECTION –A (*To be filled in by the Nominee*)

1. First Name (Prof. /Dr. /Mr. /Mrs. /Ms.): .....
   Middle Name: …….. Last Name: ..……
2. Father's / Spouse Name: ....…….....
3. Designation (Position held): ..…….....
4. Nationality: .....
5. Date of Birth: ……..….....
   Place of Birth (City) ……. (Country)……..……..
6. Name of the Parent Institution (Employer): .....
7. Full Address (Office):
   .....…….....
   .....
   Phone: .....….....Fax: .....

E-mail: .....

Full Address (Home): .....
.....Phone:
.....…..... Mobile: ..... Fax:
.....…. E-mail: .....

8. Educational Qualifications:
   Highest Degree: ..... Year of Award: ..... University: .....

   Field of Study.....

9. Brief Biodata (CV):
   …….
   (Maximum two pages in MS Word only; to be attached on a separate sheet as per the attached format)

10. A Write-up (in MS-Word format only) on what qualifies you to attend the Workshop
11. An Extended Abstract (in MS-Word only) of the Paper that would be presented at the Workshop

Date: ..... Signature: .....

SECTION –B: ENDORSEMENT BY THE NOMINATING AUTHORITY

(The Applicant in a member country of the NAM S&T Centre must get the Nomination Form endorsed by the Focal Point of the Centre in his/her country if he/she wishes to take advantages extended to the official nominee of the country. For the list of member countries and names/ addresses of the Focal Points please visit the Centre's official website; www.namstct.org.)

Signature: .....….....

Name (in full): .....

Designation: .....….....

Date: .....….....…….....

SEAL

Enclosures:

1) A Brief CV (maximum two pages, as per **attached** format; in MS Word only)
2) An Opinion (in MS-Word format only) on what qualifies you to attend the Workshop
3) An Extended Abstract (in MS-Word only) of the Paper that would be presented at the Workshop

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CURRICULUM VITAE

1. Personal Details:

PHOTO

Name: (Prof./Dr./Mr./Mrs./Ms.)

Designation: Position Title

Present Employer: Full Address (Office)

City/State/Province:

Country:

Nationality:

Date of Birth: dd/mm/yyyy

Proficiency in English Language:

Permanent Address: Full Address (Home)

Gender:

Contact: Mobile:

Telephone Office: Fax:

E-mail: Alternative e-mail:

2. Academic Qualifications: In chronological order

Qualification Awarded Degree/Diploma/Certificate	Major Subject	University/ Institution	Year (From-To)

3. Professional Experience: In chronological order

Organisation/ Institution	Position Title	Year (From-To)	Nature of duties

Total number of years of relevant experience –

4. Research Experience: In chronological order

Research Title	Duration	Status

5. Administrative Experience: Not more than 100 words

6. Experience with respect to the title of the Workshop:

7. Details of Awards/Recognitions (if any):

8. Any other information: Not more than 50 words

9. Recent Publications: Only five recent publications to be mentioned

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