





# Collaborative Activities for Research, Faculty Exchange, and Student Exchange / Internship during the year.

## A. Report: Development and Distribution of Advanced Water Testing Kits for Collaborative Research (Within India)

#### 1. Introduction

Dr. Sarang Dhote, Assistant Professor in the Department of Chemistry, developed an Advanced Water Testing Kit during the 2022-23 academic session. This report details the distribution of the kits to 10 educational institutes affiliated with RTM Nagpur University, SGB Amravati University, and Gondwana University for collaborative research activities.

### 2. Objectives

Distribute the Advanced Water Testing Kits to participating institutions.

Train faculty and students on using the kits for field-based water analysis.

Facilitate collaborative research among participating institutions.

Encourage UG and PG students to participate in water quality testing activities.

Collect and analyze water quality data from various locations.

#### 3. Activities

Kit Development: Dr. Dhote designed and developed the Advanced Water Testing Kit, equipped for on-site analysis of various water quality parameters.

Distribution: The kits were distributed to 10 educational institutes, including:

- RTM Nagpur University
- SGB Amravati University
- Gondwana University

#### a. Training

Dr. Dhote provided demonstrations and training workshops at each institute, familiarizing faculty and students with the kit's operation and data analysis procedures.

#### b. Data Collection

UG and PG students used the kits to conduct field-based water analysis at various locations. The collected data was automatically uploaded to Google Maps for easy visualization and analysis.

Nagpur, India

#### 4. Outcomes

- Successful distribution of Advanced Water Testing Kits to 10 educational institutes.
- Training provided to faculty and students on kit operation and data analysis.
- Collaborative research initiated among participating institutions.
- Increased participation of UG and PG students in water quality testing activities.
- Collection of valuable water quality data from various locations, accessible through Google Maps.
- Continuous monitoring of water samples (January + April + July + October + December)

#### **Future Scope**

- Continuation of collaborative research using the collected data.
- Expansion of the program to include more institutes and students.
- Development of additional water testing kits for specific parameters.
- Publication of research findings in relevant journals.

### Conclusion

The distribution of Advanced Water Testing Kits and the associated training workshops have successfully initiated collaborative research activities among educational institutes in Nagpur, Amravati, and Gadchiroli. This program has fostered student participation in water quality testing and data collection, potentially leading to valuable insights into local water resources and environmental







health. Continued collaboration and expansion of the program hold promise for significant contributions to water quality monitoring and management in the region.





## B. Report: JAL - Joint Asian African Lab for Water Analysis App (Outside India)

Developed by: Dr. Sarang Dhote, Assistant Professor, Department of Chemistry **App Description:** 

- a. Five Elements an Android application for fast calculation of observed water analysis data.
- b. Enables automatic upload of data to Google Maps.

#### **Distribution:**

- Sokoto State University, Nigeria
- National University of Science and Technology, Zimbabwe
- Open University of Tanzania
- Easter University, Sri Lanka
- Delta State University, Nigeria
- Makerere University, Uganda
- Various Educational Institutes in India

#### **Impact:**

- Facilitated rapid water analysis by undergraduate and postgraduate students.
- Achieved automatic data upload to Google Maps.
- Gained recognition as the JAL project.
- Continuous monitoring of water samples (January + April + July + October + December)







#### **International Collaboration:**

International Quiz Competition held on March 22nd, World Water Day.

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Overall, the JAL project demonstrates a successful application of technology in collaborative water analysis research and education.

Official Website of JAL - <a href="https://sites.google.com/view/jalsarang/home">https://sites.google.com/view/jalsarang/home</a>

#### LETTER OF CONFIRMATION FOR THE COLLABORATION

Dear Professor Sangar

It is with great pleasure that I acknowledge receipt of your letter of invitation for collaboration and sincerely thank you for your confidence in us.

I hereby give my approval for intensive collaboration for the field water analyses within the framework of the G-Mapping project.

For your information, I have the necessary knowledge and understanding in the field of chemistry, membrane processes and analysis of various environmental factors, which are the subject of my research work.

I confirm that, we will perfectly collaborate together with my research team at the Centre de Recherche en Hydrobiologie/Uvira-RDC, which will allow an excellent integration into the international network in the field of water resources.

Thank you and accept, dear Professor, the expression of my distinguished sentiments and frank collaboration.

Vercus Lumami Kapepula

Research Associate at the Department of Hydrology

Center de Recherche en Hydrobiologie

Uvira, South Kivu, D.R.C.

lumamikapepula@gmail.com

WhatsApp +32 487 89 43 74







#### DEPARTMENT OF Chemistry

19/08/2022

Dr. Sarang S. Dhote Assistant Professor Department of Chemistry Shri Shivaji Science College, Nagpur Maharashtra, India

Re: Acceptance letter for Collaboration work for On-field water analysis with the G mapping Project.

I am happy to inform you that given an opportunity to work with you and your Chemistry department at Shri Shivaji Science College, Nagpur India we are ready to work together. Collaboration is encouraged by my University and I hope we shall be able to get publishable data.

In your next communication, I expect to hear from you on how I am going to finance the activities of in you next commitment on, I expect to near hom you on now a migoring to mance me activities or the project since my University normally uses a budget framework for one year of which we did not include such an activity.

Looking forward to working with you and grow our careers together.

Sincerely,

appliebruf

Dr. Edward Mubiru Lecturer Email: edward.nmbiru@mak.sc.ug Tel: +256772445482





Website - http://sscnagpur.ac.in





#### APPLIED CHEMISTRY DEPARTMENT

Dr. Sarang S. Dhote Assistant Professor Department of Chemistry Shri Shivaji Science College, Nagpur Maharashtra, India.

24 MARCH 2023

Dear Sir

#### REF: ACCEPTANCE TO COLLABORATE WITH YOU ON THE ON-FIELD WATER ANALYSIS WITH THE G MAPPING PROJECT

I would like to express my acceptance to collaborate with you on the On-Field Water Analysis with the G-mapping Project.

We have been doing a lot of water based projects and we shall benefit from the G-mapping that is been offered by this collaboration. We have a desire to be able to use G-mapping for our results presentation with a particular focus on the water quality parameters which are problematic.

Looking forward to a fruitful collaboration.

Regards

Byalala HLOVU YALALA

CHAIRMAN OF APPLIED CHEMISTRY DEPARTMENT

NUST Council Members: Prof L. Majele Sibando (Chair), Prof N. Ruthumbu, Mr C. Chirume, Ms. S. Mguni-Maisiri, Eng I. Kamutera, Dr Eng F. erranga, Mr LD. Kuneme, Mrs. P.R. Mureyeax, Mr C. Matandwa, Dr E. Sibanda, Prof McE. Diodio (Vice-Chancellor), Mr R. Dube, Prof P. Nyamugu Dr T. Nicube, Mr M. Lughdhick, Mr M. Sighdhick, Mr M.



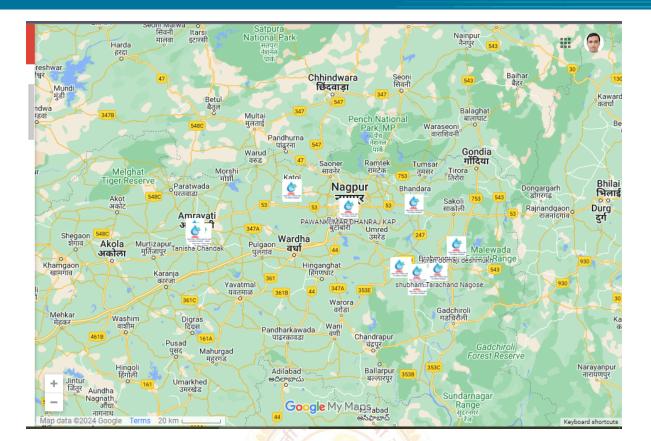


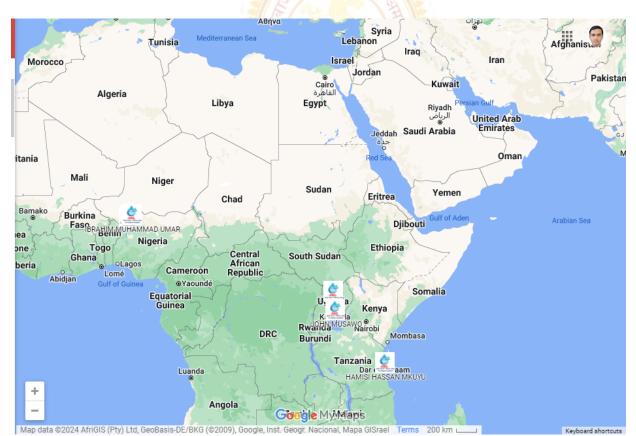




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## List of Global Students Who Participated in JAL Project.

Timestamp	Name of student	Name of Institute	Country
11/11/2022 20:52:11	ACHAYE INNOCENT	GULU UNIVERSITY	UGANDA
11/30/2022 14:55:19	JOHN MUSAWO	MAKERERE UNIVERSITY	UGANDA
1/30/2023 19:23:45	HAMISI HASSAN MKUYU	THE OPEN UNIVERSITY OF TANZANIA	TANZANIA
	ABDUEL PETER MBWAMBO	OPEN UNIVERSITY OF TANZANIA	TANZANIA
	IRENE WILFRED SAMSON	OPEN UNIVERSITY OF TANZANIA	TANZANIA
	ABDUEL PETER MBWAMBO	OPEN UNIVERSITY OF TANZANIA	TANZANIA
	KHADIJA MOHAMED OMARY	OPEN UNIVERSITY OF TANZANIA	TANZANIA
2/22/2023 11:25:23	Gaurav Govindrao Charde	RTM Nagpur University	India
	Bhumika Ashok Walke	Nabira mahavidyalaya katol	india
2/25/2023 11:51:51	Bhumika Ashok Walke	Nabira mahavidyalaya katol	india
2/25/2023 12:25:07	chetana kishor gaidhane	Nabira mahavidyalaya katol	india
2/25/2023 12:27:23	chetana kishor gaidhane	Nabira mahavidyalaya katol	india
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2/25/2023 13:34:39	Hitaxi sunil naxine	Nabira mahavidyalaya katol	india
2/25/2023 14:09:28	Disha Wasudeo Bandre	Nabira mahavidyalaya katol	india
2/25/2023 14:11:22	Disha Wasudeo Bandre	Nabira mahavidyalaya katol	india
2/25/2023 14:12:01	Disha Wasudeo Bandre	Nabira mahavidyalaya katol	india
	Sakshi kishor bidkar	Nabira mahavidyalaya katol	india
2/25/2023 14:49:11	Sakshi kishor bidkar	Nabira mahavidyalaya katol	india
2/25/2023 16:16:13	Sujata Yadavrao Kharalkar	Nabira Mahavidyalaya Katol	India
2/25/2023 16:48:37	Bhavana Purushottam Dhopre	Nabira Mahavidyalaya Katol	India
3/3/2023 9:49:53	Tanisha Chandak		India
3/3/2023 17:04:41	Jai Ambe garden city	NA	India
3/3/2023 17:52:44	Jai Ambe Garden City	NA	India
3/6/2023 10:23:31	Tanisha Chandak		India





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2/0/2022			
	Tanisha Chandak		India
3/6/2023 11:33:55	Tanisha Chandak		India
3/6/2023 11:34:00	Tanisha Chandak		India
3/6/2023 11:34:24	Tanisha Chandak		India
3/6/2023 11:57:47	TANISHA CHANDAK		INDIA
3/6/2023			
3/6/2023			INDIA
12:23:52	TANISHA CHANDAK		INDIA
	TANISHA CHANDAK		INDIA
3/6/2023 18:08:32	TANISHA CHANDAK		INDIA
	PAWANKUMAR DHANRAJ KAPGATE	RTM NAGPUR UNIVERSITY	INDIA
3/25/2023 14:06:07	garima chadokar	Shri shivaji science college	india
3/25/2023 14:06:14	TEJAS SHAH	GONDWANA UNIVERSITY	INDIA
3/25/2023 14:06:14	Angadh Ishwar Bharade	RMG Art's	INDIA
3/25/2023 14:06:15	AKSHAY BHATKULKAR	SHRI. SHIVAJI SCIENCE COLLEGE NAGPUR	INDIA
3/25/2023 14:06:32	MEGHANA BHOYAR	GONDWANA UNIVERSITY	INDIA
3/25/2023 14:08:22	TEJAS SHAH	GONDWANA UNIVERSITY	INDIA
3/25/2023 20:56:35	shubham Tarachand Nagose	N. H. College	India
4/20/2023 13:24:42	kiran domaji deshmukh	RTMNU /s. s. j. college arjuni/mor	India
4/20/2023 13:24:55	kiran domaji deshmukh	RTMNU /s. s. j. college arjuni/mor	India
4/20/2023		NATIONAL UNIVERSITY OF SCIENCE	
	BEATRICE MADANGA	AND TECHNOLOGY	ZIMBABWE
	Gayatri Shivshankar Hatzade	RTMNU	India
5/3/2023 12:59:25	Dr. Aparna Yadav	J M Patel College, Bhandara	India
5/3/2023 13:30:21	GIRDHARILAL B TIWARI	J M PATEL COLLEGE, BHANDARA	INDIA
5/3/2023 13:50:04	Dr. Aparna Yadav	J M PATEL COLLEGE, BHANDARA	INDIA
5/3/2023 13:53:18	Dr. Aparna Yadav	J M PATEL COLLEGE, BHANDARA	INDIA
5/29/2023	ANGADH ISHWAR BHARADE	RMG College of arts and sciences nagbhid	INDIA
	ANGADH ISHWAR BHARADE	RMG ART'S AND SCIENCE COLLEGE NAGBHID	INDIA



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7/26/2023 19:16:14	KHADIJA MOHAMED OMARY	open university of Tanzania	Tanzania
7/26/2023 19:16:16	REUBEN DANIEL DOTTO	THE OPEN UNIVERSITY OF TANZANIA	TANZANIA
	DORIS PHILBERT BARTHOLOMEO	OPEN UNIVERSITY OF TANZANIA	TANZANIA
	DORIS PHILBERT BARTHOLOMEO	OPEN UNIVERSITY OF TANZANIA	TANZANIA
7/26/2023 20:00:48	IRENE WILFRED SAMSON	DAR ES SALAAM	Tanzania
7/26/2023 20:01:09	IRENE WILFRED SAMSON	DAR ES SALAAM	Tanzania
7/26/2023 20:03:40	IRENE WILFRED SAMSON	DAR ES SALAAM	Tanzania
	ANGADH ISHWAR BHARADE	RMG NAGBHID	INDIA
	ANGADH ISHWAR BHARADE	RMG NAGBHID	INDIA
8/2/2023 12:44:34	KAJAL SHAKAR SAHARE	R. M. G COLLEGE NAGBHID	INDIA
	GAYATRI ANKUSH NAGOSE	RASHTRAPITA MAHATMA GANDHI	INDIA



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Website - http://sscnagpur.ac.in

8/2/2023			IN IDIA
	PRANAY GUNWANT DHOK MANISHA PANDIT	R.M.G COLLEGE	INDIA
	MESHRAM	R.M.G COLLEGE NAGBHIR	INDIA
		RASHTRAPITA MAHATMA GANDHI ARTS	INDIA
	PRIYANKA SANTOSH KASHYAP	RASHTRAPITA MAHATMA GANDHI COLLEGE	INDIA
8/2/2023 12:44:49		RASHTRAPITA MAHATMA GANDHI ARTS AND SCIENCE	INDIA
	HIMANSHU RAJESH JADHAO	RASHTRAPITA MAHATMA GANDHI ARTS	INDIA
8/2/2023 12:44:55	RATNADIP HIRALAL ALONE	R.M.G.COLLEGE	INDIA
8/2/2023 12:44:59	PRANAY GUNWANT DHOK	R.M.G COLLEGE	INDIA
	KARAN SANTOSH KARMENGE	R.M.G COLLEGE	INDIA
8/2/2023 12:45:03	PRANAY GUNWANT DHOK	R.M.G COLLEGE	INDIA
	SANJANA AMRUT CHAUDHARI	R.M.G. COLLEGE NAGBHID	INDIA
	NIKHIL DEVANATH BAWANKAR	RASHTRAPITA MAHATMA GHANDHI COLLEGE NAGBHIR	INDIA
	ANGADH ISHWAR BHARADE	RMG NAGBHID	INDIA
	NIKHIL DEVANATH BAWANKAR	RASHTRAPITA MAHATMA GHANDHI COLLEGE NAGBHIR	INDIA
	KRRISH NARENDRA POHEKAR	RASHTRAPITA MAHTMA GANDHI COLLAGE OF ART AND SCIENCE	INDIA
	KRRISH NARENDRA POHEKAR	RASHTRAPITA MAHTMA GANDHI COLLAGE OF ART AND SCIENCE	INDIA
	CHAKRADHAR MADHUKAR WANJARI	RASHTRAPITA MAHATMA GANDHI	INDIA
	PRIYANKA SANTOSH KASHYAP	RASHTRAPITA MAHATMA GANDHI COLLEGE	INDIA
12:49:32	SHREYASH SURENDRA MOHURLE	RASHTRAPITA MAHATMA GANDHI COLLEGE NAGBHIR	INDIA
12:51:32	HIMANSHU RAJESH JADHAO	RASHTRAPITA MAHATMA GANDHI ARTS	INDIA
12:51:58	SHREYASH SURENDRA MOHURLE	RASHTRAPITA MAHATMA GANDHI COLLEGE NAGBHIR	INDIA
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18:18:05	CHANDRABHAN PRABHAKAR MUNGHATE	RASHTRAPITA MAHATMA GANDHI COLLEGE NAGBHIR	INDIA
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8/2/2023 18:26:09	TEJAS PANDURANG RADKE	R.M.G	INDIA





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	CHANDRABHAN PRABHAKAR MUNGHATE	RASHTRAPITA MAHATMA GANDHI COLLEGE NAGBHIR	INDIA
8/2/2023	CHANDRABHAN PRABHAKAR MUNGHATE	RASHTRAPITA MAHATMA GANDHI COLLEGE NAGBHIR	INDIA
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	ANGADH ISHWAR BHARADE	RMG COLLEGE NAGBHID	INDIA
10/5/2023 18:13:42	IBRAHIM MUHAMMAD UMAR	SOKOTO STATE UNIVERSITY	NIGERIA
10/7/2023 17:21:59	SUFIYANU ABDULLAHI	SOKOTO STATE UNIVERSITY	NIGERIA
10/9/2023 18:34:14	SAFIYA ABUBAKAR AHMAD	SOKOTO STATE UNIVERSITY	NIGERIA
10/10/2023 16:25:04	MARYAM AMINU IBRAHIM	SOKOTO STATE UNIVERSITY	NIGERIA
11/9/2023 18:02:31	hussein maneno	open university of tanzania	tanzania
	ABDUEL PETER MBWAMBO	OPEN UNIVERSITY OF TANZANIA	Tanzania
11/9/2023 18:02:42	hussein maneno	open university of tanzania	tanzania
11/9/2023 18:03:24	Doris Philbert Batholomeo	Open university of Tanzania	Tanzania
11/9/2023 18:03:26	REUBEN DANIEL DOTTO	THE OPEN UNIVERSITY OF TANZANIA	TANZANIA
	ABDUEL PETER MBWAMBO	OPEN UNIVERSITY OF TANZANIA	Tanzania
11/9/2023 18:03:54	Doris Philbert Batholomeo	Open university of Tanzania	Tanzania
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12/19/2023 17:03:34	REUBEN DANIEL DOTTO	THE OPEN UNIVERSITY OF TANZANIA	TANZANIA





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12/19/2023			
	IRENE WILFRED SAMSON	Open University of Tanzania	Tanzania
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12/19/2023			
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	REUBEN DANIEL DOTTO	TANZANIA	TANZANIA
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17:07:08	Khadija Mohamed Omary	the Open University of Tanzania	Tanzania
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Shri Shivaji Science College, Nagpur, India







Total Number of Students who received a Certificate for Completion of One year project = 48 Link for Certificates -

https://drive.google.com/file/d/1eLScJDSI64\_HEG1mbdNVTh4RSBGi\_\_Fu/view?usp=drive\_link

### Specimen Copy of Certificate



