

Appendix 4.2

**[IoT System for Water Reuse in Developing Cities]
[Knowledge transfer meeting and workshop I]
Report/Minutes Form**

I. Organizer:

Name:	Assoc. Prof. Ir. Dr. Leo Choe Peng
Position:	Associate Professor
Institution:	Universiti Sains Malaysia

II. Program:

1. Closed project meeting

Date: 29/8

Venue: Universiti Sains Malaysia

2. Open workshop

Date: 30/8/2022

Venue: 30/8 Iconic Hotel, 71, Jln Icon City, Bukit Tengah, 14000 Bukit Mertajam, Pulau Pinang

Program Agenda:

29/8/2022 (USM)	Activities	Participant
8.30-10.30am	Report and discussion on progress Part I	Huan-Bang Li Matsumura Takeshi Leo Choe Peng Yu Kok Hwa Ho Ngo Anh Dao
10.30-11.00am	Tea Break	
11.00-1.00pm	Report and discussion on progress Part II	Huan-Bang Li Matsumura Takeshi Leo Choe Peng Yu Kok Hwa Ho Ngo Anh Dao
1.00-2.00pm	Lunch	
2.00 – 4.00pm	Visit to the D2D system and water reuse system	Huan-Bang Li Matsumura Takeshi Leo Choe Peng Yu Kok Hwa Ho Ngo Anh Dao
4.00-4.30 pm	Tea Break	

4.30 – 5.30pm	Visit to School of Mechanical Engineering	Huan-Bang Li Matsumura Takeshi Leo Choe Peng Yu Kok Hwa Ho Ngo Anh Dao
30/8/2022 (Iconic Hotel)	Activities	Speaker
8.30-9.00 am	Welcome remarks	Project Leader
9.00-9.30 am	Opening remarks	The Dean of the School of Chemical Engineering
9.30-10.00 am	Introduction to NICT	NICT
10.00 -10.30 am	Tea Break	
10.30 -11.30 am	Membranes for water reuse	Assoc. Prof. Dr. Poh Phaik Eong (Monash University)
11.30 am -12.30 pm	D2D Technology	Prof. Dr. Huan-Bang Li (NICT)
12.30 pm – 1.00 pm	Networking Session	Participants to exchange name cards and network.
1.00 -2.00 pm	Lunch	
2.00-3.00 pm	The transformative powers of Big Data and the Internet of Things (IoT).	Mr. Chan Zhen Yu, WyseTime Technologies Sdn. Bhd.
3.00-4.00 pm	IR4.0 for water recovery	Assoc. Prof. Dr. Mohamad Hanif Md Saad (Institute of IR4.0, UKM)
4.00-5.00 pm	Dielectrophoresis for water quality monitoring (Virtual)	Dr. Muhamad Ramdzan Buyong (Institute of Microengineering and Nanoelectronics)
5.00-5.10 pm	Closing remarks	Project Leader
5.10 – 5.30 pm	Networking and tea break	Participants to exchange name cards and network.

III. Participants:

No.	Name	Organization
1	Assoc. Prof. Ir. Dr. Leo Choe Peng	USM
2	Dr. Yu Kok Hwa	USM
3	Ir. Dr. Yen Kin Sam	USM
4	Dr. Ho Ngo Anh Dao	TDTU (Ton Duc Thang University)
5	Dr. Huan-Bang Li	NICT
6	Mr. Kurihara Tsugihiko	d3comm
7	Dr. Matsumura Takeshi	NICT

8	Assoc. Prof. Dr. Poh Phaik Eong	Monash University
9	Mr. Chan Zhen Yu	WyseTime Technologies Sdn. Bhd.
10	Prof. Ts. Dr. ChM. Ahmad Zuha iri Abdullah	USM
11	En. Said Saidin	USM
12	En. Yusof Ismail	USM
13	En. Mohd Rasydan Omar	USM
14	Ms. Noor Hasliza Wan Chik	USM
15	Ms. Sofiah Mat Rasit	USM
16	Ms. Yap Jia Xin	USM
17	Ms. Hong Chia Huey	USM
18	Ms. Yap Jia Er	UniMAP
19	Mr. Fu Jialin	USM
20	Ms. Farrah Amiera Mohd Khair uddin	USM
21	Dr. Ahmad Zhafran Bin Ahmad Mazlan	USM
22	Dr. Abdul Haadi Bin Abdul Ma nap	USM
23	Ir. Ts. Dr. Chang Chun Kiat	USM/The Institution of Engineers, Malaysia (Penang Branch)
24	Dr. Goh Hui Weng	River Engineering and Urban Draina ge Research Centre, USM
25	Dr. Lim Gin Keat	USM
26	Mr. Khairul Firdaus Bin Mohd T alib	USM
27	Assoc. Prof. Dr. Mohamad Hani f Md Saad	UKM
28	Assoc. Prof. Dr. Ong Hui Lin	UniMAP
29	Assoc. Prof. Ts. Dr. Sam Sung T ing	UniMAP
30	Dr. Mohd Hanif Mohd Pisal	UniMAP
31	Ms. Noorhidayah Ishak	USM
32	Mr. Lim Wei Jiun	USM
33	Mr. Koe Chee Meng	USM
34	Dr. Mohammad Shahadat	USM
35	Dr. Mohd Ridhwan Bin Adam	USM
36	Assoc. Prof. Dr. Vel Murugan V adivelu	USM

IV. Summary of the activities corresponding to the objectives

Summary of Meeting

The main objective of this meeting and workshop is to transfer knowledge on water

reuse and related IoT systems to the team members. During the Closed Project Meeting on Aug 29, the team members presented their recent progress and they manage to brainstorm improvement in the project activities. The future works proposed are:

- Installation of solar panel for the newly identified location of antenna.
- Add filter on top of membrane module to prevent severe fouling.
- Conduct trials of data transfer from sensor and microcontroller board.
- Draft journal paper based on data collected at TDTU.

Instead of discussing on the report for ASEAN IVO Forum 2022. The team members spent their time to learn the D2D system and water reuse system physically. The team members even spend some time in School of Mechanical Engineering to understand their innovations for future collaboration.

Summary of Workshop

During the Open Workshop on Aug 30, more researchers related to water research are gathered to meet the invited speakers. After opening remarks by the dean of School of Chemical Engineering, Assoc. Prof. Dr. Poh covered the methods to recover water and her pilot plants to reuse water. Dr. Li explain on D2D systems developed in his past projects. Dr Matsumura later introduced on NICT and recent projects. After lunch, Mr. Chan introduced basic concepts in IoT as well. Assoc. Prof. Dr. Mohd Hanif and Dr. Muhamad Ramdzan shared their past experience in water related projects incorporated with IoT and sensing technology, respectively. The participants took the opportunity to ask questions and build networks. The team members gained more ideas to use the sensors and microcontroller boards and D2D devices in the future projects such as rainwater, vertical agriculture, and etc.. The team members also gained more understanding of participants' works for future collaborate. In general, the expenditure was under the budget as the speakers, Assoc. Prof. Dr. Hanif and Dr. Ramdzan did not requested to stay at hotel. Assoc. Prof. Dr. Poh only stayed at 1 night instead of 2 nights. However, the travel cost of Assoc. Prof. Dr. Hanif increased to suit his request of making a day trip.

V. Others

Photos meeting at USM:



Photos of workshop:



Dean of SCE USM



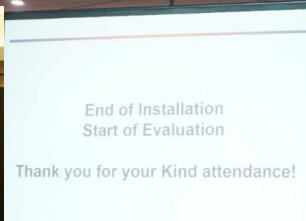
Dr. Matsumura
(Speaker)



Dr. Poh (Speaker)



Mr. Chan (Speaker)



Dr. Li (Speaker)



Dr. Hanif (Speaker)



Dr. Ramdzan (Speaker)

Participant feedbacks

8/31/20 22 10:17:3 3	DR ONG HUI LIN	Associate Professor	hlong@unimap.ed u.my	The workshop is well organised, which inviting the experts from Malaysia and Japan to share their achievements and knowledge. All participants are very active during the networking sessions. Bravo to the organising team!
8/31/20 22 10:25:1 5	Assoc. Prof. Dr. Sam Sung Ting	Lecturer	stsam@unimap.ed u.my	Well done organizing committee .
8/31/20 22 10:45:3 5	Dr. Vel Muruga n Vadivelu	Associate Professor	chvel@usm.my	
8/31/20 22 11:04:5 5	Ir Dr Yen Kin Sam	Lecturer	meyks@usm.my	
8/31/20 22 11:06:0 1	Dr. Lim Gin Keat	Senior Lecturer	limgk@usm.my	Well organised!
8/31/20 22 11:32:3 0	Jialin Fu	PhD student	fujialin9@gmail.co m	Very good.
8/31/20 22 13:41:3 1	Khairul Firdaus Bin Mohd Talib	Student	firdaustalib1997@ gmail.com	Insightful and great workshop for knowledge sharing
8/31/20 22 15:47:3 8	Chan Zhen Yu	Mr.	zhenyu707@hotm ail.com	
8/31/20 22 18:38:5 6	Mr Lim Wei Jiun	Postgrad uate	darrenlimwj96@h otmail.com	
8/31/20 22 23:31:4 8	MS. YAP JIA ER	UNDERG RADUAT E STUDEN T	s201240474@stud entmail.unimap.e du.my	Thank you very much for the opportunity to participate this workshop. I have a good experience and enjoyed the workshop especially the topic IoT.



**ICT Virtual Organization of ASEAN Institutes and NICT
(ASEAN IVO)**

9/1/2022 9:48:04	Dr. Poh Phaik Eong	Associate Professor	poh.phaik.eong@ monash.edu	It was a good opportunity to network with individuals working in similar fields and to understand more about the field of IOT.
9/1/2022 11:26:46	DR MOHD RIDHWAN ADAM	LECTURER	mohd.ridhwan@us m.my	It was a good initiative program for networking and new insight into the wastewater treatment process. Well done, organizer team!
9/1/2022 11:31:10	Hong Chia Huey	Master student	chhong868@gmail .com	
9/1/2022 13:52:54	Dr. Ho Ngo Anh Dao	Head of Department of Environmental Engineering and Technology, Ton Duc Thang University, Vietnam	hongoanhdao@tdt u.edu.vn	This knowledge transfer workshop is an interesting meeting and also a good chance for all participants to meet physically and share their work. I makes more useful connection with many lecturers, researchers in the field of environmental and chemical engineering for water treatment and electromechanical field also. I also update more knowledge about IoT techniques and its practical application.
9/2/2022 11:31:21	MS. YAP JIA XIN	PhD Student	jxyap@hotmail.co m	
9/2/2022 16:20:10	Ts. Dr. MOHD HANIF BIN MOHD PISAL	Senior Lecturer	hanifpibal@unima p.edu.my	Thank you for the program. I'm proud to be able to attend & understand the concepts presented