



International Research  
Network for Engineering  
Science and Technology

# **ICPPAI-FEB-2019**

**IRNEST International Conference on Polymers  
and Plastics, Artificial Intelligence. Robotics, Smart  
Materials, Engineering & Information Technology**

**Shanghai, China**

**Date: February 23-24, 2019**

**[www.irnest.org](http://www.irnest.org)**

# ***CONFERENCE BOOK OF ABSTRACT PROCEEDINGS***

## ***IRNEST-2019***

International Research Network for Engineering Science and Technology



# TABLE OF CONTENTS

SCIENTIFIC COMMITTEE	vii
SCIENTIFIC COMMITTEE	viii
ORGANIZING COMMITTEE	ix
CONFERENCE TRACKS	x
CONFERENCE CHAIR MESSAGE	xi
Participants Registered As Listener/ Observer	xiv
Conference Day 02 (February 24, 2019)	xv
<i>TRACK A</i>	1
<i>ENGINEERING, TECHNOLOGY &amp; APPLIED SCIENCES</i>	1
Effect Of TioCoating And UV Irradiation On Oil Decomposition/Removal On The Surface Of The Optical Fiber Sensor	2
Vibration Pattern Measurement Using A Hetero-Core Optical Fiber Sensor For Defect Diagnosis	3
Aging Effect Of Pd Based Hetero-Core Optical Hydrogen Sensor By The Storage In Different Gases Atmosphere	4
Body Motion Monitoring In Nursing Using Tape-Shaped Sensors With A Hetero-Core Optical Fiber Sensor	5
Smiling Face Detection Using Tape Shaped Sensors Based On Hetero-Core Fiber Optics	6
<i>TRACK B</i>	1
<i>BUSINESS, ECONOMICS &amp; MANAGEMENT STUDIES</i>	1
RBM: An Antidote to Program Management	2
A Stakeholder Engagement Strategy for Public Private Partnership Urban Infrastructure Provision in Nigeria	4
<i>UP COMING EVENTS</i>	5

# **Book of Abstracts Proceedings**

**IRNEST International Conference on Polymers and Plastics, Artificial Intelligence, Robotics, Smart Materials, Engineering & Information Technology (ICPPAI-FEB-2019)**

Shanghai, China  
February 23-24, 2019  
ISBN: 978-623-6577-80-5

Email: [Info@irnest.org](mailto:Info@irnest.org)  
URL: [www.irnest.org](http://www.irnest.org)



All rights reserved. Without the consent of the publisher in written, no individual or entity is allowed to reproduce, store or transmit any part of this publication through any means or in any possible form. For obtaining written permission of the copyright holder for reproducing any part of the publication, applications need to be submitted to the publisher.

Proceedings of the IRNEST International Conference on Polymers and Plastics, Artificial Intelligence, Robotics, Smart Materials, Engineering & Information Technology (ICPPAI)

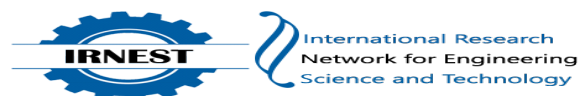
### **Disclaimer**

Authors have ensured sincerely that all the information given in this book is accurate, true, comprehensive, and correct right from the time it has been brought in writing. However, the publishers, the editors, and the authors are not to be held responsible for any kind of omission or error that might appear later on, or for any injury, damage, loss, or financial concerns that might arise as consequences of using the book. The views of the contributors stated might serve a different perspective than that of the IRNEST.

***IRNEST International Conference on Polymers and  
Plastics, Artificial Intelligence. Robotics, Smart Materials,  
Engineering & Information Technology  
(ICPPAI-FEB-2019)***

**Venue: VESH COFFEE No. 1100 Ding Xi Road (Near Zhao Hua Road)  
Changning District 1100101**

**Conference Theme:** Providing Platform for enhancement of research  
and developmental activities through networking.



## SCIENTIFIC COMMITTEE

**Qihu QIAN**

Member of Chinese Academy of Engineering

**Shunquan QIN**

Senior Engineer, China Railway Major Bridge Reconnaissance and Design Institute Co. Ltd./Member of Chinese Academy of Engineering

**Hongwei Ding**

Shanghai Jiao Tong University, China

**Xiangyu Duan**

Soochow University, China

**Junhui Li**

Soochow University, Suzhou, China

**Dr. Kolla Bhanu Prakash**

Department of Computer Science Engineering, K L Deemed to be University, Green Fields, Vaddeswaram, Guntur District, A.P., INDIA.

**Dr. S M Sohel Murshed**

University of Lisbon , Portugal

**Jianhua Tao**

Institute of Automation, Chinese Academy of Sciences, China



## SCIENTIFIC COMMITTEE

**Deyi Xiong**

Soochow University, China

**Prof. NASSER TOWHIDI**

University of Tehran, Iran

**Professor Hu Xiao**

Nanyang Technological University, Singapore

**Prof. Amnart Suksri**

Khonkaen University, Thailand



## ORGANIZING COMMITTEE

**PROF. LIN GAO**

Conference Chair

**Email:** lin\_gao@irnest.org

**DR. XINKUI WANG**

Conference Supervisor

**Email:** xinkui@irnest.org

**DR. ZHONGKUN ZHANG**

Conference Cordinator

**Email:** Zhongkun@irnest.org

**PROF. YANG YUEXIN**

Conference Cordinator

**Email:** Yang@irnest.org

**LORI SCHMIDT**

Conference Cordinator

**Email:** Lorschmidt@irnest.org

## CONFERENCE TRACKS

- Computer and Software Engineering
- Mechanical & Metallurgical Engineering
- Electrical & Electronics Engineering
- Civil Engineering
- Bio-Technology & Food Technology
- Chemistry & Chemical Engineering
- Physical, Applied and Life Sciences
- Interdisciplinary

## CONFERENCE CHAIR MESSAGE

### **Prof. Lin GAO**

“International Conference of International Research Network for Engineering Science and Technology (IRNEST)” is a platform that thrives to support the worldwide scholarly community to analyze the role played by the multidisciplinary innovations for the betterment of human societies. It also encourages academicians, practitioners, scientists, and scholars from various disciplines to come together and share their ideas about how they can make all the disciplines interact in an innovative way and to sort out the way to minimize the effect of challenges faced by the society. All the research work presented in this conference is truly exceptional, promising, and effective. These researches are designed to target the challenges that are faced by various sub-domains of the social sciences and applied sciences.

I would like to thank our honorable scientific and review committee for giving their precious time to the review process covering the papers presented in this conference. I am also highly obliged to the participants for being a part of our efforts to promote knowledge sharing and learning. We as scholars make an integral part of the leading educated class of the society that is responsible for benefitting the society with their knowledge. Let’s get over all sorts of discrimination and take a look at the wider picture. Let’s work together for the welfare of humanity for making the world a harmonious place to live and making it flourish in every aspect. Stay blessed.

Thank you.

Prof. Lin GAO

Conference Chair

Email: [lin\\_gao@irnest.org](mailto:lin_gao@irnest.org)



# CONFERENCE AGENDA

DATE: February 23-24, 2019

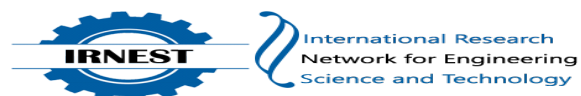
LOCATION: VESH COFFEE No. 1100 Ding Xi Road (Near Zhao Hua Road)hangning District  
1100101

EVENT TITLE: IRNEST International Conference on Polymers and Plastics, Artificial Intelligence  
Robotics Smart Materials, Engineering & Information Technology (ICPPAI-FEB-2019)

## Start Time

09:00 am - 09:10 am: Registration & Kit Distribution  
09:10 am - 09:20 am: Introduction of Participants  
09:20 am - 09:30 am: Inauguration and Opening address  
09:30 am - 09:40 am: Grand Networking Session

**Tea/Coffee Break (09:40 am -10:00 am)**



# CONFERENCE AGENDA

DATE: February 23-24, 2019

LOCATION: VESH COFFEE No. 1100 Ding Xi Road (Near Zhao Hua Road)hangning District  
1100101

EVENT TITLE: IRNEST International Conference on Polymers and Plastics, Artificial Intelligence  
Robotics Smart Materials, Engineering & Information Technology (ICPPAI-FEB-2019)

Session: 01  
10:00 am - 12:00 pm: Presentation Session  
Track A: Engineering, Technology & Applied Sciences

Presenter Name	Manuscript Title	Paper ID
Junichi IDA	Effect Of TioCoating And UV Irradiation On Oil Decomposition/Removal On The Surface Of The Optical Fiber Sensor	ICPPAI-FEB19-102
KUMI KOGUCHI	Effect Of TioCoating And UV Irradiation On Oil Decomposition/Removal On The Surface Of The Optical Fiber Sensor	ICPPAI-FEB19-102C
Hiroshi YAMAZAKI	Effect Of TioCoating And UV Irradiation On Oil Decomposition/Removal On The Surface Of The Optical Fiber Sensor	ICPPAI-FEB19-102C2
Miyuki KADOKURA	Vibration Pattern Measurement Using A Hetero-Core Optical Fiber Sensor For Defect Diagnosis	ICPPAI-FEB19-103
Masahiro Mikami	Aging Effect Of Pd Based Hetero-Core Optical Hydrogen Sensor By The Storage In Different Gases Atmosphere	ICPPAI-FEB19-105
Hiroyuki Yoshimi	Body Motion Monitoring In Nursing Using Tape-Shaped Sensors With A Hetero-Core Optical Fiber Sensor	ICPPAI-FEB19-106
Yumi Hosokawa	Smiling Face Detection Using Tape Shaped Sensors Based On Hetero-Core Fiber Optics	ICPPAI-FEB19-107
<b>Track B: Business, Economics &amp; Management Studies</b>		
Bongs Lainjo	RBM: An Antidote to Program Management	RABSS-FEB-101
Bello Nagogo Usman	A Stakeholder Engagement Strategy for Public Private Partnership Urban Infrastructure Provision in Nigeria	RABSS-FEB-102

**Lunch Break & Closing Ceremony (12:00 pm - 01:00 pm)**

## CONFERENCE AGENDA

DATE: February 23-24, 2019

LOCATION: VESH COFFEE No. 1100 Ding Xi Road (Near Zhao Hua Road)hangning District  
1100101

EVENT TITLE: IRNEST International Conference on Polymers and Plastics, Artificial Intelligence  
Robotics Smart Materials, Engineering & Information Technology (ICPPAI-FEB-2019)

### Participants Registered As Listener/ Observer

The following Scholars/ practitioners who don't have any paper presentation, however they will attending the conference as delegates & observers.

**Official ID:** SHM-429-102A

Sara Ali Abdulrahim

Xian Jiaotong University, China

## CONFERENCE AGENDA

DATE: February 23-24, 2019

LOCATION: VESH COFFEE No. 1100 Ding Xi Road (Near Zhao Hua Road)hangning District  
1100101

EVENT TITLE: IRNEST International Conference on Polymers and Plastics, Artificial Intelligence  
Robotics Smart Materials, Engineering & Information Technology (ICPPAI-FEB-2019)

### Conference Day 02 (February 24, 2019)

Second day of conference will be specified for touristy. Relevant expenses are borne  
by Individual him/herself.



*IRNEST International Conference on Polymers and Plastics, Artificial Intelligence, Robotics,  
Smart Materials, Engineering & Information Technology (ICPPAI)*  
Shanghai, China  
ISBN: 978-623-6577-80-5

***TRACK A***

***ENGINEERING, TECHNOLOGY & APPLIED SCIENCES***





## Effect Of TioCoating And UV Irradiation On Oil Decomposition/Removal On The Surface Of The Optical Fiber Sensor

<sup>1\*</sup>Kumi KOGUCHI, <sup>2</sup>Michiko NISHIYAMA, <sup>3</sup>Hiroshi YAMAZAKI, <sup>4</sup>Kazuhiro  
WATANABE, <sup>5</sup>Junichi IDA

<sup>1,2,3,4,5</sup>Department of Environmental Engineering, Graduate School of  
Engineering-University of Soka Hachiouji city, Japan

Corresponding Email: e17m5710@soka-u.jp

---

**Keywords:** Hetero-core optical fiber, Oil decomposition, Photocatalyst, TiO

A problem in our previous hetero-core optical fiber sensor for oil detection is that after oil sensing, it is very difficult to remove oil from the sensor surface by washing with water. Therefore, in this study, we developed an optical fiber oil detection sensor based on a hetero-core fiber structure coated with TiO<sub>2</sub> nanoparticle layer on the surface, and tried to improve its oil removal performance using its photocatalytic activity. In the experiment, three coating methods of TiO<sub>2</sub> layer formation such as the sol-gel, the dip-coating and the sputtering method were tried, and their oil decomposition/removal performance was examined under UV irradiation. In the case of the sol-gel method, calcination process is needed after TiO<sub>2</sub> coating to transform amorphous phase to crystalline, and this resulted in the decrease of mechanical strength of the optical fiber. The TiO<sub>2</sub> coated optical fiber sensor prepared by the sputtering method showed very weak photocatalytic activity for oil decomposition/removal. On the other hand, the TiO<sub>2</sub> coated optical fiber sensor prepared by the dip-coating method exhibited improved oil removal performance under UV irradiation with maintaining its mechanical strength. These results indicated that the dip-coating method was suitable to prepare oil detection optical fiber sensor with TiO<sub>2</sub> coating.



## **Vibration Pattern Measurement Using A Hetero-Core Optical Fiber Sensor For Defect Diagnosis**

<sup>1\*</sup>Miyuki KADOKURA, <sup>2</sup>Hiroshi YAMAZAKI, <sup>3</sup>Michiko NISHIYAMA, <sup>4</sup>Taketoshi  
IYOTA, <sup>5</sup>Kazuhiro WATANABE

<sup>1,2,3,4,5</sup>Information Engineering System-SOKA University 1-236, Tangi, Hachioji,  
Tokyo 192-8577 Japan

Corresponding Email: e17m5208@soka-u.jp

---

**Keywords:** Optical Fiber Sensor, Hetero-Core Fiber, Vibration Monitoring

Defect diagnosis techniques based on vibration patterns on machines have been developed so far for structural health monitoring. The performances of defect diagnosis greatly depend on the precision of sensors utilized to measure vibration so that, especially in practical usages, it is indispensable for the sensors not only to be accurate but also robust to such environmental changes as temperature, humidity, electromagnetic interferences, and so on. In this study, a novel vibration sensor has been proposed based on hetero-core fiber optics for overcoming such environmental conditions. The hetero-core fiber optic sensor picks up the change of bending curvature at a sensor portion which consists of two single-mode(SM) optical fibers with different core diameters. The vibration sensor is fabricated by mounting a hetero-core optical fiber segment in an arch shape, which produces vibration to the curvature of the sensor portion by given input acceleration. A series of experiments was conducted in order to confirm responses of the sensor when several patterns of vibration was given with assuming the knocking of ratchet on a gear as follows: a part of the tooth was worn out fully or to some extent and the rotation speed of the gear was changed higher and lower. Through the experiments it was successfully demonstrated that the differences between a normal knocking pattern and other abnormal patterns apparently appeared in the response of the proposed sensor, and the abnormal conditions could be identified by the temporal changes in RMS values of measured data.



## **Aging Effect Of Pd Based Hetero-Core Optical Hydrogen Sensor By The Storage In Different Gases Atmosphere**

<sup>1\*</sup>Masahiro Mikami, <sup>2</sup>Michiko Nishiyama, <sup>3</sup>Shoichi Kubodera, <sup>4</sup>Kazuhiro Watanabe

<sup>1,2,3,4</sup>Department of Information Systems Science, Faculty of Engineering-SOKA

University, Tokyo, Japan

Corresponding Email: e1452135@soka-u.jp

---

**Keywords:** Optical Fiber, Palladium Nanoparticles, Hydrogen, Durability

In recent years, hydrogen has attracted much attention as a clean renewable and abundant energy source. However, it has an explosion risk when the concentration in air exceeds more than the explosion limit of 4%. Therefore, reliable hydrogen sensors are needed for rapid and accurate hydrogen leakage detection. In potentially explosive environments, optical fiber sensors are preferable to be used since they have no electrical contact in the sensor portion and transmission line. Most hydrogen sensors based on the optical fiber have employed palladium (Pd) thin film because of the selective absorption of hydrogen. We have proposed hetero-core structured optical fibers, which consisted of a single mode fiber inserted into a multimode transmission ber, as a hydrogen sensor with Pd materials. The hetero-core optical hydrogen sensor could detect the change in dielectric function of Pd based on the optical loss change in the near-infrared region. Our previous works attempted to use Pd nano-particles (PdNP) because the PdNP could be a useful candidate to achieve a trade-off between the response time and sensitivity, with the life time of operation to be more improved for practical application level. This study has shown the storage effect of PdNP sensors on the life time by means of evaluating the response time and sensitivity of the PdNP sensors for 4 % hydrogen gas every two weeks. The sensors were stored in moist or dry and room-temperature or low-temperature air with resulting in an aging effect of the proposed Pd based hydrogen hetero-core optical fiber sensor. It has been found that dry and low-temperature air environments less than 20 % and 0 deg. shows to suppress the deterioration of PdNP.

## **Body Motion Monitoring In Nursing Using Tape-Shaped Sensors With A Hetero-Core Optical Fiber Sensor**

<sup>1\*</sup>Hiroyuki Yoshimi, <sup>2</sup>Yuya Koyama, <sup>3</sup>Michiko Nishiyama, <sup>4</sup>Emi Yanagisawa, <sup>5</sup>Mariko Hayashi, <sup>6</sup>Kazuhiro Watanabe

<sup>1,2,3,4,5,6</sup>Department of Science and Engineering for Sustainable Innovation, Faculty of Science and Engineering-Soka University 1-236, Tangimachi Hachioji-shi, Tokyo, Japan

Corresponding Email: e1559225@soka-u.jp

---

**Keywords:** Hetero-Core Fiber Sensor, Body Mechanics, Body Motion Measurement, Nursing Motion

Shortage of nurses have been faced as a social problem along with the declining birthrate and aging population in Japan. One of the major reasons for nurses to quit their jobs is occupational injury lower back pain, which is caused by moving bedridden patients. In order to prevent lower back pain, the nurses need to perform proper care motions based on body mechanics. Body motion monitoring techniques could help them to learn the proper body motions. A hetero-core optical fiber sensor has several features of being lightweight, flexible, and thin. The sensor detects bending on the sensor portion by measuring the transmitted light intensity change. Our previous works showed that body motions for running and golf swings could be monitored with hetero-core optical fiber sensors. In this study, one of the basic motions in nursing, which is a transfer care motion, was monitored with tape-shaped sensors embedding the hetero-core optical fiber sensor in medical tapes. The sensors were attached to both side of shoulders, upper arms, lower legs, and soles of the feet. The sensor directly detected a minute deformation of the skin surface. A student, who belongs to department of nursing, performed three kinds of care motions including a correct motion and erroneous motions. The result showed that the tape-shaped sensors were able to distinguish between the proper care and erroneous motions. The proposed techniques will be applied for training tools for beginner or non-expert caregiver to learn the proper care motion.



## **Smiling Face Detection Using Tape Shaped Sensors Based On Hetero-Core Fiber Optics**

<sup>1\*</sup>Yumi Hosokawa, <sup>2</sup>Yuya Koyama, <sup>3</sup>Michiko Nishiyama, <sup>4</sup>Kazuhiro Watanabe  
<sup>1,2,3,4</sup>Department of Science and Engineering for Sustainable Innovation, Faculty of  
Science and Engineering-Soka University 1-236, Tangimachi Hachioji-shi, Tokyo,  
Japan

Corresponding Email: e1559130@soka-u.jp

---

**Keywords:** Face Detection, Facial Expression, Duchenne Smile, Tape Sensor, Hetero-Core Fiber Optics

Facial expression plays an important role in social communication. Smile brings us some benefits such as a facilitation of interpersonal communication, a construction of good human relations, and positive effects on the mind and body. Especially a voluntary smile, which is known as Duchenne Smile, makes its action attractive because it presents a positive feeling to others. Therefore, it is desired to be used in improvement of the customer service and quality of life. In this paper, we propose an unconstrained facial expression detecting method based on a fiber optics sensor from minute deformation of the skin surface for a training system of making the natural and voluntary smile. We used the hetero-core fiber optics sensor embedded in a medical film tape, which was able to be attached to the skin without constraint. The hetero-core optical fiber sensor, which has several features of such as lightweight, flexibility, and thinness, can detect bending on the hetero-core portion through the transmitted light intensity change. In our previous works, body motions were monitored in real time with the tape shaped sensor using the hetero-core fiber optics. Responses of the tape shaped sensor were interrogated for a single subject (female, 22 years old) with watching a comedy show on a PC. In order to detect expression change for her smile, the three tape shaped sensors were attached to the face close to eyes, cheeks, and mouth.



*IRNEST International Conference on Polymers and Plastics, Artificial Intelligence, Robotics,  
Smart Materials, Engineering & Information Technology (ICPPAI)*  
Shanghai, China  
ISBN: 978-623-6577-80-5

***TRACK B***

***BUSINESS, ECONOMICS & MANAGEMENT STUDIES***



## **RBM: An Antidote to Program Management**

\*Bongs Lainjo

Cybermatic International Montreal, Canada

Corresponding Email: bsuiru@bell.net

---

**Keywords:** Result-Based Management, Theory Of Change, United Nation Organization, Logical Framework, Project Cycle Management, Risks And Assumptions, Inclusive, Participatory, Environment.

Results-based Management (RBM) is an important concept in the strategic system approach. It is systematic coalesce of efforts consciously made to achieve a desired result. It is a management approach purely shaped by the results. This study seeks to explore RBM in strategic system approach through the analysis of a life case study. This section discusses the results-based management logical framework and the theory of change. The logical framework of RBM evidently resides on the structured, logical model, which identifies the expected outputs and consequently the inputs as well as activities required to accomplish the outcomes. The logical framework is structured around five items: assess, think, plan, do and review. The philosophical assumptions underlying this study are based on critical realism. This study seeks to establish the mechanisms applied in results-based management and the structures that are required via a life case study of the United Nations Organizations. In critical realism ontology, three aspects are considered, the real, the actual and the empirical. To understand the application of RBM in the case study, this study combines all the three aspects of an insightful analysis. The study draws important lessons in the implementation of results-based management model stemming from the introduction of changes in the RBM framework and the incentives for motivating the management to adopt results-based management. The study notes the existence of RBM on policy papers, but there is the minimal impetus to implement it practically despite its potential benefits in achieving the organizational performance. In occasional cases where the framework is implemented, there exists an inadequate degree of inclusivity, participatory and enabling environment. The life case study focused on the United Nation Organization and the modalities for the implementation of RBM. As a critical step in the evolution of logical framework approaches, RBM attempts to respond to some issues of the Project Cycle Management (PCM) and Logical Framework Approach (LFA) methods. People often ask what the difference is between PCM or LFA and Results Based Management. In a sense, RBM is PCM done right. It provides more tools and directives on what



*IRNEST International Conference on Polymers and Plastics, Artificial Intelligence, Robotics,  
Smart Materials, Engineering & Information Technology (ICPPAI)*

Shanghai, China

ISBN: 978-623-6577-80-5

should be done to ensure that project design is performed in a participatory way, and to make sure that one takes into consideration any assumptions and risks. In conclusion, this work has explored the concept of results-based management as a management approach that targets at the improving results in a three-thronged model constituted of Short-, medium-, and long-term types of results, outputs, outcomes, and impacts. The concept is particularly prevalent in the public and not-for-profit organizations. The study has focused on getting insight on the results-based approach in program management and its application in a selected case study. The study explored the application of RBM in the United Nations Organizations such as UNESCO, UNDP among others with a focus on the global, regional and country-based implementation of RBM.





## **A Stakeholder Engagement Strategy for Public Private Partnership Urban Infrastructure Provision in Nigeria**

<sup>1\*</sup>Bello Nagogo Usman, <sup>2</sup>Chika Udejaja, <sup>3</sup>Peter Mc Dermott, <sup>4</sup>Claudia Trillo

<sup>1,2,3,4</sup>University Of Salford, UK

Corresponding Email: beye98@aumc.ac.kr

---

**Keywords:** Urbanisation, Stakeholder, Public Private Partnership, Infrastructure, Nigeria

The global population is increasingly becoming urban. By the year 2050, Nigeria will be among the top three countries that will account for this trend of migration behind china and India. The trend of urbanisation comes with various challenges and benefits. However, Nigeria has been unable to tap into the benefits of urbanisation due to existing poor infrastructure and inability to meet the increase in demand for new ones due to scarcity of resources. Globally, the concept of Public Private Partnership (PPP) has been adopted to galvanise resources to bridge infrastructure deficit and improve efficiency of service provision of existing stock. However, the concept as adopted by Nigeria has not yielded fruitful results due to various problems chiefly among them include: political will, technical knowhow, lack of clear coordination between the government and the concessionaire and the negligence of community/public engagement in Urban Infrastructure (UI) PPP processes. However, various studies have indicated the absence of a structured Stakeholder Engagement process (SE) as a critical success factor that has led to the failure and slow growth of PPP in Nigeria, none has addressed the issue of proposing a strategy for SE in UI provision. This thesis intends to bridge this gap by proposing SE strategy for PPP UI provision in Nigeria.

## ***UP COMING EVENTS***

You can find the details regarding our upcoming events by following below:

<http://irnest.org/upcoming-conferences/>



International Research  
Network for Engineering  
Science and Technology

# VISION

**IRNEST is a dedicated platform to promote and encourage the latest advancements in Science, Engineering Technology & Applied Sciences for the benefit of human development through highly significant research contributions, conferences, and other professional, educational and mentoring activities.**

**[www.irnest.org](http://www.irnest.org)**