3rd International Scientific Conference of Engineering Sciences and Advances Technologies (IICESAT), College of Material Engineering, University of Babylon, Iraq in 4-5 June, 2021.

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IICESAT Conference Proceeding 3rd edition, Involved Our Peer Reviewed Papers that reviewed and presented through the 3rd International Scientific Conference of Engineering Sciences and Advances Technologies (IICESAT) which held in College of Material Engineering, University of Babylon, Babylon, Iraq in 4-5 June, 2021. IICESAT Aims to bring together all aspects and research works in scientific platform to discussed the latest and new trends in topics covered under broad areas such as (but not limited to) various aspects of engineering fields.

IICESAT Conference got very significant interesting from authors comes from several countries, in which we receive participation from more than 19 countries which are: French, UK, Ukraine, Russia, Nepal, India, Vietnam, Thailand, Taiwan, Indonesia, Algeria, Morocco, Surya, Poland, Philippines, Uzbekistan and Many other Countries where the authors are successfully presented their works and attend our conference sessions who managed by our scientific and organizing committee Members, and answered all the questions that directed to them by session chairs and attendances. We successfully held this conference within 2-Days (4 and 5 June 2021), where on the first day we successfully listened to the keynote speakers' presentations then the session started from 12:00 PM in Iraq Standard Time till 03:30 PM, and for evening sessions started from 5:00 PM till 8:00 PM. We would like to express our thanks and appreciation to all our session chairs for their hard work and attend our (27) sessions through two days and more than 8 hours per day to deliver the presented works in a successful manner.

IICESAT conference hosted 27 plenary sessions, 12 Session in first day and 13 sessions in 2nd day, where on the first day (4 June 2021) the Inauguration program started from (10:00 AM) till (12:00 PM). Then Sessions Started directly by dividing the authors into their certain session who managed by 12 Chairs, for each session (1 chair from scientific committee,, 1 from Organizing committee board and 1 from Conference Editors chairs board). We are glad to express our gratitude for all of the participants, keynote speakers, organizing committee members, Scientific Committee members, and other Guest...
Chairs and Patrons for their support and achievement, and we extend our thankful to all our reviewers (228+), for their times and valuable notes. We extend our thanks to our international committee members for the gaudiness of their participants and promote this conference in their regions, and successfully attend very attractive presents. Also, we thank our authors for their effective contribution in our conference and participated with us in the 3rd Edition of conference proceeding.

**IICESAT** conference also hosted the sessions of 3rd International Conference on Civil and Environmental Engineering Technologies (ICCEET 2021), ICCEET is organized and hosted by University of Kufa, Faculty of Engineering in Al-Najaf city, Iraq.

**Venue of the Conference**

The conference has been organized virtually by SICC in University of Babylon, College of Materials Engineering, University of Babylon, in 4-5 June 2021. IICESAT organizers aims through their scientific departments, and preparing a generation of students armed with knowledge and looking forward to building their country according to the new scientific developments. The university endeavors towards making use of them in an appropriate cultural means as well as building good and new scientific establishments for the sake of developing the present through scientific research.

**The Reason(s) why IICESAT Conference Held Virtually**

Due Covid-19 Pandemic Situation in many countries around the world and the incredible increases cases through this Pandemic is very dangerous, and per day the number of cases in our peoples that infected by Covid-19 in the world and in Iraq, and due to the World Health Organization and Ministry of Health Recommendations, the conference organizers decided to conduct and held this conference Virtually to keep the life of participants and also due the challenges of lock down. Conduct IICESAT virtually bring huge number of participants that non expected due many peoples are unable to attend conference physically, they able to attend our online Conference due to the friendly uses of Virtual Software without spending money for flight tickets or other matters to attend that type of conferences. However, we feel those peoples by attend our conference achieved our goal by inviting very attractive authors and participants who are interest to attending this conference, they will not able to attend it if it's held in non-virtually. However, The organizing committee have achieved these tasks and all sessions organized and managed successfully through Zoom Conference Meeting, where the team attend physically to use the University of Babylon infrastructure to achieve this conference Successfully.

**Technology, Technical Difficulties and Drawbacks of Conference Virtually**

IICESAT Conference Consider the ZOOM Meeting Software as the main software to conduct the both days of this conference, as the Main Software for delivering the Session discussions and Meeting information to all participants in Iraq and other countries. The main advantages of this Technology is to reduce the time and space when someone would like to attend any scientific event and also discard the limitations and borders for the Scholars and authors who would like to attend this event from far-away countries, in which provide a platform that able to manage and control large number of participants is the main challenge of choosing the best software, we find Zoom meeting is the best software that fulfill our requirements and provide amazing virtual platform to manage our authors and participants through our conference sessions.

The main technical difficulty in virtual software is the internet connection, due to covid-19 band, many peoples sitting at homes and many jobs transformed from physical to virtual mode, However, internet connection and ISP infrastructure may affected due to the large number of traffic devices that joined to the networks recently, and due many ISP companies do not have good infrastructure to provide stable connection through online events. Hence, we conducted our sessions at the university of Baghdad
by consuming the Internet infrastructure there and we held IICESAT conference in very successful manner without any challenges or interruptions through the conference sessions. With Blessing of God, we held the 2nd day of this conference successfully without any issue and we are looking to conduct this conference for both days in future in physical manner after the world remedy from Covid-19 pandemic.

The Main Technical Difficulties of Virtual Meetings can be summarizing as follow:

In IICESAT conference, we used ZOOM software to podcast the events of the first day, we didn’t face any issue in that and we receive many positive feedbacks to host this conference in physically for both days. The 2nd day of IICESAT conference hosted Virtually, and for Virtual Techniques and software can be used to achieve these kinds of events and conferences in virtual mode, many software’s at the current time, offered by many companies either in free or paid own services also available through the internet. The main challenge to use online technique is to find the good software that able to manage large number of attendees with varied number of traffic data, we feel that the internet connections is the main source for any challenge in any online event. However, if the internet connection became slow, where many users are forced to exit and rejoin many times through the session. So many software's can used to achieve high quality meeting, need some certain limitations, like number of users, to keep the bandwidth little good, however not all interested peoples can attend meeting, difficulty of join and attend the meeting rooms, view and share the content, etc. it was the main challenges in any online event.

Drawbacks of virtual conference, we do not feel the virtual conference have much drawbacks than physical conferences, in which many peoples can avoid many fees payment for travels and hosting, registration fees, as well as flight tickets in which virtual conferences gives free offer for all the above issues. Another thing is, some famous Scholars, and international professors can easily join and attend online Events without fees in which they can attend and spoke by sitting at their homes. The main drawback we feel that if some authors would like to visit the conference venue for direct discussion and made good collaboration, so virtual meeting can also achieve this task easily, at the current time where all world suffer from Covid-19 pandemic.

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Conference Tracks
## TRACK3

**Electrical and Computer Engineering**
- Electrical and Communication Engineering
- Control and Computer Engineering
- Electrical Power, and Electrical Machine Engineering
- Control and Robotic Systems Engineering
- Remote Sensing and GIS Engineering

## TRACK4

**Chemical and Bio-Chemical Engineering**
- Bio-mechanics and Bio-materials
- Petroleum and Oil Reservoirs
- Drilling Wells Technology
- Polymers and Complex Fluids
- Thermodynamics, and Heat Engineering

## TRACK5

**Civil and Construction Engineering**
- Constructability and Fabrication Techniques
- Construction Materials, Properties and Behavior
- Structural Performance (Static & Dynamic)
- Structural Materials, Analysis and Design
- Hydraulic and Geo-technical Technologies

## TRACK6

**Geotechnical and Surveying Engineering**
- Geo-technical earthquake engineering
- Plasticity and constitutive Models
- Tunneling and underground structures
- Modeling and GIS Engineering
- Environmental and Data-Model Integration
## Invited Speakers

| Time            | Speaker Name                          | Speaker T.          |
|-----------------|---------------------------------------|---------------------|
| 10:30 Am - 11:15 Am | **Professor Dr. Colin J. Lambert**   | Speaker 1           |
|                 | Lancaster University, UK              |                     |
| 11:15 Am - 11:45 Am | **Professor Dr. Paul J. Low**         | Speaker 2           |
|                 | University of Western Australia, Australia |                     |
| Time       | Speaker Name                                      | Organizing Institutions |
|------------|--------------------------------------------------|-------------------------|
| 11:45 AM - 12:15 PM | The Development of Green Internet of Things | Prof. Dr. Zdzislaw Polkowski  
WSG University, Bydgoszcz, Poland |

**The Development of Green Internet of Things**

**Prof. Dr. Zdzislaw Polkowski**  
WSG University, Bydgoszcz, Poland

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**Organizing Institutions**
Special Thanks to Conference Partners:

- DIJLAH GOLDON JEWEL Company, Iraq, for their Supports and Sponsorship.

Conference Flyer
Conference Proceeding of 1st Day (4 June 2021)
Quantum-interference-enhanced thermoelectricity in single-molecule junctions.
Colin Lambert,
Physics, Lancaster University

Coldest place in the universe
\(\sim 10^{-8}\mu K\)
(deep space \(\approx 2.7K\))

Lancaster University
Conference Sessions (Day 2: 5 June 2021)

Wishing to Participate with our Next Conference