2nd International Conference on Physics and Applied Sciences (ICPAS), College of Education, Mustansiriyah University, Baghdad, Iraq in 26-27 MAY, 2021.

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ICPAS Conference Proceeding 2nd edition, Involved Our Peer Reviewed Papers that reviewed and presented through the 2nd International Conference on Physics and Applied Sciences (ICPAS) which held in College of Education, Mustansiriyah University, Baghdad, Iraq in 26-27 MAY, 2021. ICPAS 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) Nuclear, plasma and theoretical physics, Materials physics, materials analysis and characterization, Optics, Quantum Optics and Lasers, Mathematical Physics, Applied Physics, Statistical physics and Nonlinear systems, Communications, Vacuum science, technology and applications. The conference is co-sponsored by Journal of Physics: Conference Series, ISSN: 1742-6588, 1742-6596.

ICPAS Conference got very significant interesting from authors comes from several countries, in which we receive participation from more than 17 countries which are: UK, USA, Ukraine, Russia, South Africa, Nepal, India, Algeria, Morocco, Surya, Indonesia, 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 (26 and 27 May 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 04:30 PM. We would like to express our thanks and appreciation to all our session chairs for their hard work and attend our (10) sessions through two days and more than 8 hours per day to deliver the presented works in a successful manner.

ICPAS conference hosted 4 plenary sessions per day after the inauguration Program where on the first day (26th May 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 4 Chairs (2
From Scientific Committee board, 1 from Organizing committee board and 1 from Conference Editors chairs board). Papers which have been presented in our conference will process to publish in the *Journal of Physics: Conference Series* under the Double-Blind peer-reviewed process. We 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 (154+), 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 2nd Edition of conference proceeding.

**Venue of the Conference**

The conference was held in the Main Conference Hall at College of Education, Mustansiriyah University. The conference held in attendance, and the conference attended by 200+ participants and visitors. The main Keynote Speakers who come from 5 countries, 5 of them attend their Sessions and presented their seminars in Virtual mode through Zoom Meeting Software, and 1 Keynotes speaker present his work in attendance manner. The inauguration program also involved introductory and welcome speech by the president of Mustansiriyah University, Dean of College of Education, Chair of Scientific Committee, Chair of Organizing Committee, and our keynote Speaker who attend the session in attendance. Session started physically with more than 100 Authors Presented their works in 4 Session achieved physically in the Rooms and Laboratories of Mustansiriyah University, where the Dean of College of Education and the administrative staff achieved all the requirements to make the successful of our conference. SICC and Dijla Staff members doing all their efforts to podcast the conference Proceeding of the first day (in attendance) and 2nd day (Virtual) over the ZOOM to our international committees. some authors presented their works in our sessions Physically, and oversea authors presented their works virtually in the 2nd day, where each one assigned 10 Minutes at all to present the work, and 5 minutes for discussion and QA. ICPAS organizers aim through this conference to explore various knowledge and New Ideas and share with others all their novel contributions for better development in research works.

**The Reason(s) why ICPAS Conference Held Virtually in the 2nd Day:**

ICPAS Conference, the first conference in 2021 Held the first day in attendance by attending 200+ participants come from various states and places from Iraq. ICPAS hosted in first day more than 100 Authors who attend the conference proceeding and presents their works after divided them into 4 sessions and assign 10-15 minutes to each one to present his work. The 2nd Day and Due Covid-19 Pandemic Situation in many countries around the world and due the incredible increase of positive cases through this Pandemic per day, where the number of cases in our peoples that infected by Covid-19 in the world and in Iraq Increased daily, and due to the World Health Organization and Ministry of Health Recommendations, the conference organizers held the 2nd day of this conference virtually due to many authors who participates from several countries and far away states they not able to attend our conference, and to keep the life of our participants. Conduct ICPAS 2nd day virtually bring huge number of participants that non expected due many peoples are unable to attend conference physically, but they are able to attend our online Conference due to the friendly uses of Virtual Software without spending money for flight tickets to attend online 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 achieved these tasks and all sessions has been organized and managed successfully through Zoom Conference Meeting, where the team attend physically to use the College of Education at Mustansiriyah University infrastructure to achieve this conference Successfully.
Technology, Technical Difficulties and Drawbacks of Conference Virtually.

ICPAS Conference Consider the ZOOM Meeting Software as the main software to conduct the 2nd day 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 affect 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 ICPAS 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 ICPAS conference, where the first day of this conference hosted physical (in attendance), and 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 ICPAS 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 ro-oms, 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.
Conference Committees

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| Prof. Hamid Al-Tamimi     | President of Mustansiriyah University              |
| Prof. Dr. Isam Asal Hasan | Dean of the College of Education                   |
| A. Prof. DR. Ali Taher Mohi| Head of Physics Dept. at College of Education      |

Conference Editors

| Name                      | Position                                           |
|---------------------------|----------------------------------------------------|
| A. Prof. Ahmed J. Obaid   | Faculty of Computer Science and Mathematics, University of Kufa, Iraq. |
| Prof. Dr. Salah Albermany | Faculty of Computer Science and Mathematics, University of Kufa, Iraq. |
| A. Prof. DR. Souvik Pal   | Head of CSE Dept., Global Institute of Management and Technology, India |
| Prof. Dr. Sandeep Kautish | LBEF Campus Kathmandu Nepal (In collaboration with Asia Pacific university Malaysia) |
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Conference Tracks

**Physics and Applied Physics**

**Track 1**
- Nuclear, Plasma and Theoretical Physics
- Particle Physics and Field Theory
- Atomic and Molecular Physics
- Atmospheric and Space Physics
- Fusion Physics, and Renewable Energy

**Computational and Quantum Systems**

**Track 2**
- Quantum Information and Quantum Mechanics
- Quantum gases, liquids and solids
- Optics, quantum optics and lasers
- Nanomaterials science and low-D systems
- Superconductivity, and Electromagnetism

**Mathematics and Information Theory**

**Track 3**
- Mathematical Modeling and Optimization
- Mathematical physics
- Instrumentation and measurement
- Probability, Statistics, Topology
- Differential equations and Discrete mathematics

**Information Technology and Networking**

**Track 4**
- Image and Signal Processing
- Cryptography and Security Systems
- Wireless Communication and Networking
- Optical, Semiconductors, and Fiber Communications
- Neural Networks, Materials analysis and characterization
## Invited Speakers

| Time             | Session Title               | Speaker Name                                      | Speaker T.          |
|------------------|------------------------------|---------------------------------------------------|---------------------|
| 10:30 Am -10:45 Am | Physics and origin of life  | **Prof. Dr. Amjad Al Sawad**<br>Space Research Laboratory/ Turku/Finland<br>SOHO/ERNE Project a co-operative project between NASA and ESA<br>Ministry of Science and Technology/Director for Research and Development, Iraq | Speaker 1           |
| Time           | Session Title                                                                 | Speaker Name                        | Speaker T.         |
|---------------|------------------------------------------------------------------------------|-------------------------------------|--------------------|
| 10:45 Am - 11:00 Am | The Impact of the Ethics on the Digital Projects in crisis periods          | **Prof. Dr. Adriana Schiopoiu**  
University of Craiova, Romania | **Speaker 2**                  |
| 11:00 Am - 11:15 Am   | Maturity Models for Healthcare Information Systems versus Telemedicine       | **Prof. Dr. Alvaro Rocha**  
University of Lisbon, Portugal | **Speaker 3**                  |
| Time         | Session Title                          | Speaker Name                      | Speaker T.     |
|--------------|----------------------------------------|-----------------------------------|----------------|
| 11:15 Am - 11:30 Am | The Development of Green Internet of Things | **Prof. Dr. Zdzislaw Polkowski** WSG University, Bydgoszcz, Poland | Speaker 4      |
| 11:30 Am - 11:45 Am | Extracting and Summarization of Situational Information from Online Social Media during Disasters or epidemic | **Prof. Dr. Soumi Dutta** Institute of Engineering & Management (IEM), India | Speaker 5      |
| Time           | Session Title                                           | Speaker Name                      |
|---------------|--------------------------------------------------------|-----------------------------------|
| 11:45 Am - 12:00 PM | Cloud Based Quantum Computing, in Medical Health Care System | A. Prof. Dr. Parul Agarwal Jamia Hamdard, New Delhi, India |

Organizing Institutions

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Special Thanks to Conference Partners:

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

Conference Flyer
Conference Proceeding [Session (Chairs /Co-Chairs)]

Day 1: 26 May 2021 (Attendance Day)

| Track 1: Physics and Applied Physics (Room1) |
|---------------------------------------------|
| Day 1: 26 May 2021                          |
| Time: 1.5 Hours                             |
| Session Chair: Prof. Dr. Haifaa Khazi Raheed|
| Session Co-Chair: Prof. Kudhair Abbas Mishjel|

| Track 1: Physics and Applied Physics (Room2) |
|---------------------------------------------|
| Day 1: 26 May 2021                          |
| Time: 1.5 Hours                             |
| Session Chair: Prof. Dr. Hassan Nouri Abdulwahab |
| Session Co-Chair: Prof. Dr. Mustafa S. Hashim |

| Track 2: Mathematics and Statistics (Room3) |
|---------------------------------------------|
| Day 1: 26 May 2021                          |
| Time: 1.5 Hours                             |
| Session Chair: Prof. Dr. Salah Mehdi Salih  |
| Session Co-Chair: A. Prof. Dr. Salim D. Muhsin |

| Track 3-4: Information Technology (Room4)  |
|--------------------------------------------|
| Day 1: 26 May 2021                        |
| Time: 1 hour                              |
| Session Chair: A. Prof. Dr. Eimad E. Abdul-Kareem |
| Session Co-Chair: A. Prof. Dr. Anwar Abbas Hatab |
Conference Proceeding of 1st Day (26 May 2021)
Conference Sessions (Day 1: 26 May 2021)
## Conference Proceeding Day 2: 27 May 2021

### Session Chairs / Co-Chairs

#### Track 1: Physics and Applied Physics  Room 1

| Session Chair: |
|----------------|
| 1. Prof. Dr. Nidhal Nissan Jindo |
| 2. Prof. Dr. Adnan Yousif Hussain |

| Session Co-Chair: |
|-------------------|
| 1. A. Prof. Dr. Oday Hikmat Mahmood |
| 2. A. Prof. Dr. Mahdi Salih Naif |
| 3. A. Prof. Dr. Entisar Hatoo Hashim |
| 4. A. Prof. Dr. Aiser A. Hussain Hamad |

#### Track 2: Mathematics and Statistics Room 2

| Session Chair: Prof. Dr. Nada Sabah Karam |

| Session Co-Chair: |
|-------------------|
| 1. A. Prof. Dr. Oday Hikmat Mahmood |
| 2. Lec. Dr. Samir Qasim |

#### Track 2: Mathematics and Statistics Room 3

| Session Chair: A. Prof. Dr. Maki Akram M. Salih |

| Session Co-Chair: |
|-------------------|
| 1. A. Prof. Dr. Mahdi Salih Naif |
| 2. A. Prof. Dr. Awatif Razok Mezel |
Track 3-4: Information Technology

Day 2: 27 May 2021

Time: **3 Hours**

**Session Chair:**
1. Prof. Safana Haider Abass
2. A. Prof. Dr. Abdul-Wahab Sami Ibrahim

**Session Co-Chair:**
1. A. Prof. Dr. Ahmed Hashim Muhammed
2. Lec. Dr. Bidaa Abdul Khaleq Atia
3. Lec. Dr. Khalid Khadim Jabar
4. Lec. Dr. Zuhair Hussain Ali
Wishing to Participate with our Next Conference