2nd International Conference of Al-Esraa University College for Engineering Sciences (ICAUC_ES).

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ICAUC_ES Conference Proceeding volume contain the novel contributions that were reviewed and presented through the first version of 2nd International Conference of Al-ESraa University College, where the conference covers 4 tracks which includes:  
(Track 1: Energy, Renewable Energy, Environmental Sciences, Environmental Engineering, Green Energy and Environmental health, Natural Resources).  
(Track 2: Hydrogeology and Hydrology, Soil and Ground water Treatment Techniques, Rivers, Oceanography Sciences, Applied and Material Engineering, Geo-technical earthquake Engineering, Mineralogy and Petrology).  
(Track 3: Geochemistry, and Biodiversity, Biogeochemical cycles and Assessment, Bio-mechanics and Bio-materials, Volcanology, and Paleontology, Hydraulic and Geo-technical Technologies, Thermodynamics, and Heat Engineering).  
(Track 4: Atmospheric Science and Meteorology, Climatology and Paleoclimatology, Geography, and Geology, Oceanography, and Paleontology, Volcanology and Pollution, Solid, Water and other Waste Treatments).

ICAUC_ES aims to gathering together all the new trends, projects, technologies, and recent research works in many fields in Engineering Sciences. The received papers which passed the double-blind reviews which successfully passed the reviewers comments and editorial board decisions comes from various authors around the world, where the authors are either working in academics centers, universities, research institutes, corporations, industries, and other agencies or postgraduate students where the presented works refers to their novelty in their research works.

ICAUC_ES Conference got very significant interesting from authors that comes from several countries like: UK, Turkey, India, Nepal, Philippines, Indonesia, Australia, Egypt, Iran, Malaysia, and Many other Countries where the authors are successfully presented their works and attend the sessions who
managed by our scientific and organizing committee Members, and answered all the questions and dotes that questionnaire by session chairs and attendances. We successfully held this conference within 2 days: (3rd and 4th November 2021), where in the first Day we start our Inauguration Program then we successfully listen to the keynote speakers' presentations then the Inauguration Program session started from 10:00 AM based on Iraq Standard Time till 01:30PM. Then the conference session started from 2:30 PM till 6:00PM where more than 50 Articles presented in the first day. 2nd Day sessions also Started from 2:30 PM to 6:00 PM where in this day more than 50 Papers presented, the total number of the papers that presented in our conference through the conference days (110) papers. We would like to express our thanks and appreciation to all our session chairs for their hard work and attend our (14) sessions through two days and more than 10 hours per day to deliver the presented works in successful manner.

ICAUC_ES conference hosted 7 plenary sessions per day, where in the first day (3rd November 2021) the Inauguration program started from (10:00 AM) till (1:30 PM). Then Sessions Started directly by dividing the authors into their certain session who managed by our Chairs (From Scientific Committee board, from Organizing committee board and from Conference Editors chairs board). The manuscripts which have presented and published in the IOP Conference Series: Earth and Environmental Science under the peer-reviewed process. We love 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 supports and achievement, and we extend our thankful to all our reviewers (200+) reviewers, for their times and valuable notes. We extend our thanks to our international committee members for gaudiness of their participators and promote this conference in their regions, and successfully present very attractive presents. Also, we thank our authors for their effective contribution in our conference and participating with us in this conference proceeding. We also, acknowledge SICC in University of Kufa, Dijla Co. Pvt. Ltd., for their hospitality and sponsoring the conference. Furthermore, would like to thank SICC Center for supporting us to held this conference in successful manner.

ICAUC_ES conference committee Members glad to announce that, the ICAUC_ES conference is got very interested visit count from many countries (5,000) Visit and URL visits count, Attendances in both days where in first day (400+) attendances and 2nd day (200+) attendances. ICAUC_ES Conference chairs glad to share with all of you that the conference technical team issued more than (600+) certificates for our attendance authors who comes from more than 11 countries. However, we are glade to announce this conference held very successfully and have the largest number of attendances than other conferences in our local region. The successfully holding this conference comes from the attractive background of our committee members at the first level and the organizers who represent the academic level in all the universities in our region.
Venue of the Conference

The conference has been organized virtually by Al-ESraa University College (AUC), Statistical and Informatics Consultation Center (SICC), Dijla Co. Pvt. Ltd (Dijla), on 3rd and 4th November 2021. ICAUC_ES organizers aims through their scientific departments, and preparing a generation of students armed with knowledge and looking forward to build our 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 developing the present through scientific research. The main organizer of ICAUC_ES conference are Al-ESraa University College, SICC center with the cooperation of Dijla Jewel Co. Pvt. Ltd.

The Reason(s) why ICAUC_ES Conference Held virtually:

Due the presents of new edition of Covid-19 Pandemic and the Situation in many countries around the world is in the band, and due the new cases of New Edition of Covid-19 have been increases widely due to the Winter time, and based on recommendation of World Health Organization and Ministry of Health Recommendations, the conference organizers decided to conduct and held this conference Virtually to keep the life of our participants from the new edition of Corona Virus. Conduct ICAUC_ES virtually bring huge number of participants that non expected due many peoples are unable to attend conference in attendance, 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 Al-ESraa University College infrastructure to achieve this conference Successfully.

Technology, Technical Difficulties and Drawbacks of Conference Virtually.

ICAUC_ES Conference Consider the ZOOM Meeting Software as the main software to conduct 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 broken the limitations for the peoples and authors who would like to attend this event from far away countries, in which this software give many facilities that able to manage and control large number of participants, and due the main software may exist can achieve the task we fins that 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 home and many jobs transformed from physical to virtual mode, However, internet connection and ISP infrastructure may affect due the large number of traffic devices that join to the network recently and may the ISP companies do not have good infrastructure to provide stable connection through the meeting or sessions. Hence, Al-ESraa University College, SICC, and Dijla Jewel Pvt. Ltd. infrastructures used to achieve this task successfully. We held this conference successfully without any issue and we are looking to conduct this conference 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:

Virtual Techniques and software that used to achieve these types of events and conferences in virtual mode, many software can be used, which can be offered by many companies either in free or paid own services. 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.

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 figures and professors can easily join and attend without consider their fees in which they can attend and speak for hours when they sitting at home.

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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## Invited Speakers

| Speaker Name                  | Affiliation                                                                 | Country     | Personal Photo |
|-------------------------------|------------------------------------------------------------------------------|-------------|----------------|
| Asst. Prof. Dr. Neyara Radwan | (Faculty of Engineering, Suez Canal University, Egypt) & (King Abdulaziz University, KSA) | Saudi Arabia| ![Photo](image1) |
| Asst. Prof. Dr. Abid Hussain  | School of Computer Applications, Career Point University, India              | India       | ![Photo](image2) |
| Prof. Dr. Zdzislaw Polkowski | WSG University, Bydgoszcz, Poland                                          | Poland      | ![Photo](image3) |
| Prof. Dr. Muthmainnah         | Universitas Al Asyariah Mandar Indonesia                                     | Indonesia   | ![Photo](image4) |
| Prof. Dr. Pastor Arguelles Jr.| Dean of College of Computer Studies at University of Perpetual Help System Dalta | Philippines | ![Photo](image5) |
| Prof. Dr. Stezhko Nadiia      | Dept. of International Economy, University of State Fiscal Service of Ukraine | Ukraine     | ![Photo](image6) |
Conference Organizing Institutions

- Al-Esraa University College, Baghdad, Iraq
- Statistical and Informatics Consultation Center (SICC), Faculty of Computer Science and Mathematics, University of Kufa, Iraq.
- Dijla Jewel Co. Pvt. Ltd, for conference management and Academic Services.

Conference Partners Institutions

[Images of logos for various institutions]
Special Thanks to:

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

With our pleasure to attend our next conferences in Future

Asst. prof. Dr. Ahmed J. Obaid
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