



## Conference Proceedings

**ICSTR Lisbon – International Conference on Science & Technology  
Research, 27-28 June 2019**

27-28 June 2019

## CONFERENCE VENUE

Lusófona University, Lisbon, Portugal

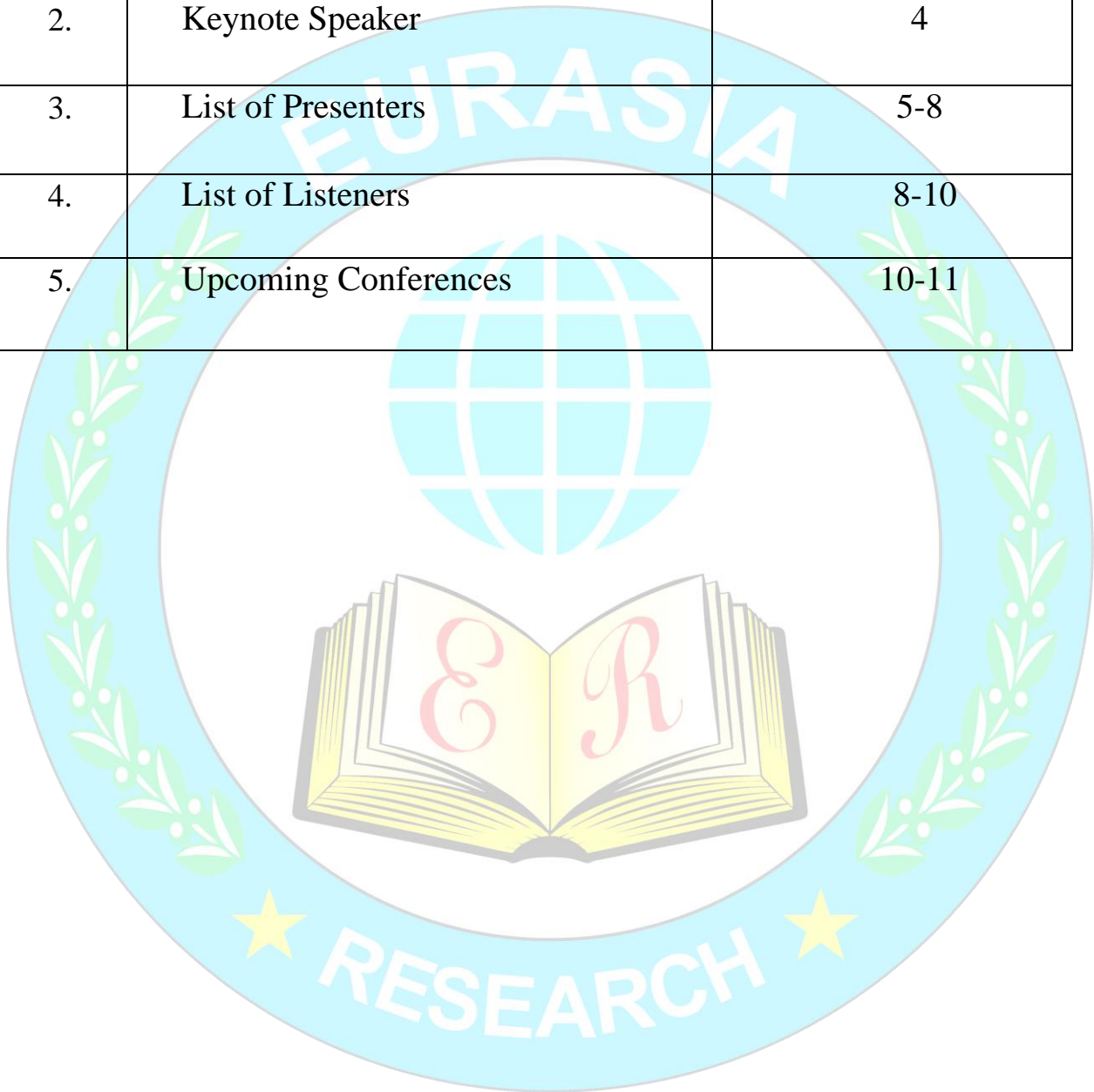
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**Preface:**

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## **KEYNOTE SPEAKER**



**Prof. Cecília R.C. Calado**

**High Institute of Engineering of Lisbon (ISEL-Instituto Superior de Engenharia de Lisboa Rua Conselheiro Emídio Navarro, Lisboa, Portugal), Portugal**

**Topic: FTIR-spectroscopy for Biomarkers Discovery in Serum for Medical Diagnosis**

**Cecília Calado has a PhD and an MSc in Biotechnology, and an Honorary degree in Biochemistry. She is a professor at the Lisbon High Engineering Institute (ISEL- Instituto Superior de Engenharia de Lisboa), where she coordinates the BSc and MSc in Biomedical Engineering and the R&D Lab. in Medical Bio-Engineering. She presents a broad experience in R&D in Development of Platforms to Discover Drugs and Diseases Biomarkers and Bioprocess Monitoring. She is a member of the IEEE-EMB, of the European Federation of Biotechnology, for Pharma and Medical Biotechnology and for Biochemical Engineering Science. Simultaneously to these multiple projects, she has promoted various activities to enhance public awareness to Science, such as Presentations on Patents and Technology Transfer.**

## PRESENTERS

<p><b>Rafik Amara</b> ERCICSTR1909058</p>	<p><b>Map Server for Visualizing Air Traffic Based on Data from a Remote Pseudo Radar</b></p> <p><b>Rafik Amara</b> Department of Computer Science, LTIR, ENS-Kouba, FEI/USTHB, Algiers, Algeria</p> <p><b>Youcef Beskri</b> Department of Computer Science, LTIR, ENS-Kouba, FEI/USTHB, Algiers, Algeria</p> <p><b>Mostefa Belhadj Aissa</b> Department of Computer Science, LTIR, ENS-Kouba, FEI/USTHB, Algiers, Algeria</p> <p><b>Abstract</b> In order to ensure the safety of aircraft operating in airspace, air traffic controllers apply a number of rules recommended by the ICAO, known as "separation rules". Previously using essentially the calculation of the estimates, they are based today on the visualization of the traffic. Traffic data comes from several sources. These include radar data from air traffic radars. The objective of this work is to simulate, using a web map server, the evolution of air traffic: positions and flight levels of aircraft over time based on radar data. For this we use three parts. The first part, the pseudo radar, is a remote radar data server that, depending on the time, sends the data to the map server that is the second part. The latter receives this data and combines it with other geographical and cartographic data and sends them in turn to the client via the web server. The client, a simple interface finally displays the positions of aircraft on screen. Keywords: Air Traffic Control, Air Traffic Radar, Web Map Server, Geographical Information System</p>
<p><b>Youcef Beskri</b> ERCICSTR1909059</p>	<p><b>Automated Vector Conversion of Drainage Network</b></p> <p><b>Youcef Beskri</b> Department of Computer Science, LTIR, ENS-Kouba, FEI/USTHB, Algiers, Algeria</p> <p><b>Rafik Amara</b> Department of Computer Science, LTIR, ENS-Kouba, FEI/USTHB, Algiers, Algeria</p> <p><b>Mostefa Belhadj Aissa</b> Department of Computer Science, LTIR, ENS-Kouba, FEI/USTHB, Algiers, Algeria</p> <p><b>Abstract</b> Our work is part of a tool that we have developed and which allows the automated extraction of the drainage network from a digital terrain model (DTM). In this part we have developed two procedures that allow the automatic vector conversion and the extraction of some geomorphological settings for each hydrographic feature. The model chosen for the vector format of the drainage network is the network model. For sub basins, we retained the topological model. The first procedure consists to convert drainage network to vector. It is designed as follows: The first pixel to be processed is the one that represents the outlet. The procedure is recursive and each pixel is visited once. Each stream is represented by a line formed of all the centers of the pixels constituting the raster format. Some geomorphological parameters are extracted. The second procedure is used to the vector conversion of sub basins. the tool that we have proposed and developed was applied to the watershed of Oued M'Zab (Ghardaia). Keywords: Drainage Network, Automated Extraction, DTM, Raster To Vector. Hydrographic Futures, Oued M'zab.</p>
<p><b>Anas Shehu</b> ERCICSTR1909062</p>	<p><b>Characterisation of Neutron Detectors Based on <math>^3\text{He}</math></b></p> <p><b>Anas Shehu</b> Physics, Sokoto State University, Nigeria</p> <p><b>Usman Abubakar</b></p>

	<p style="text-align: center;"><b>Abstract</b></p> <p>The purpose of this project is to study the characteristics of <math>^3\text{He}</math> based neutron detectors. An AmBe neutron generator in a water moderator was used to produce thermal neutrons. The detectors characterization is observed by studying the pulse height resolution, detection efficiency, epithermal neutron response, gamma-ray sensitivity and effect of orientation. The optimum operating conditions of these detectors were investigated by varying the high voltage and shaping time. Pulse-height resolution (%) and intrinsic efficiency (%) of all detectors were found after setting the optimum operation condition of each detector. The best output spectrum is found the detector no. 6 which has 7.812452335% and 4.829427283% for the pulse-height resolution and the intrinsic efficiency respectively. The experiment shows that a gamma exposure rate of <math>^{60}\text{Co}</math> which is lower than 4.78 mR/h does not affect the ability to discriminate gamma rays and neutrons of <math>^3\text{He}</math> based neutron detector. Finally, the intrinsic efficiency (%) of two different source-detector orientations was investigated.</p>
<p>Mohd Kushairi Mohd Rajuddin ERCICSTR1909084</p>	<p style="text-align: center;"><b>The Application Of Mathematical Model In Determining The Optimal Enhancement Of Microalgae Growth Using Soil Extracts</b></p> <p style="text-align: center;"><b>Kushairi, M.R.M</b> Faculty of Engineering and Life Sciences, Universiti Selangor (UNISEL), Shah Alam, Malaysia</p> <p style="text-align: center;"><b>M.B. Arifin</b> Faculty of Engineering and Life Sciences, Universiti Selangor (UNISEL), Shah Alam, Malaysia</p> <p style="text-align: center;"><b>J.H. Koraini</b> Faculty of Engineering and Life Sciences, Universiti Selangor (UNISEL), Shah Alam, Malaysia</p> <p style="text-align: center;"><b>Abstract</b></p> <p>Microalgae are nowadays used to produce a variety of compounds in various industrial sectors such as aquaculture, animal feed formulation, human nutrition, cosmetics, pharmaceuticals as well as biofuel production. Microalgae represent a group of photosynthetic organisms that are capable of growing rapidly while requiring only light and basic nutrient media. It has been found that with the addition of soil extracts to the basic nutrient media in which the microalgae is cultured, its growth is enhanced. In this study, soil from different locations in Peninsular Malaysia were collected and various extraction methods are applied to these soil samples to obtain the soil extract. The soil extract is then mixed in various concentrations to the media in which the microalgae is placed. This mixture is then placed in microplates and incubated. The growth rate of the microalgae in the microplate is then measured over different time period. During incubation, various external factors, such as temperature, light intensity and exposure period are applied to determine which of these external factors enhanced the most to the growth of the microalgae. It was found that different concentrations of soil extracts and external factors had shown various level of response with respect to the microalgae growth. These analysis are later used in creating mathematical model with respect to the growth response of the microalgae. By having a verified mathematical model, the optimal concentration of extract used as well as the right external factors that could give optimal growth to the microalgae can be obtained and used effectively to predict algae growth in systems across varying scale.</p> <p><b>Keywords:</b> Microalgae, Extraction Methods, Soil Extract, Growth, Mathematical Model</p>
<p>Dr. Raju Sharma ERCICSTR1909089</p>	<p style="text-align: center;"><b>A Study Analysis of IEEE 802.15.4 Zigbee Based WSN in Campus</b></p> <p style="text-align: center;"><b>Dr. Raju Sharma</b> Assistant Professor at Department of Electronics and Communication, Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab, India</p> <p style="text-align: center;"><b>Prabhjot Singh</b> Research Scholar, Department of Electronics and Communication, Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab, India</p> <p style="text-align: center;"><b>Lavpreet Kaur</b> Research Scholar, Department of Electronics and Communication, Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib, Punjab, India</p>

**Damanpal Singh**  
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**Abstract**

This paper analysing the use of Zigbee WSN in domestic applications, here in this case, it is smart campus. This smart campus consists of multiple offices, which are designed in such a way that each office has several sensors, assigned for various environmental factors. The sensor nodes are represented by the Zigbee end device and the master node is represented by the Zigbee coordinator. The data traffic is sent from the end nodes towards the master node or the coordinator, which takes, all the values from sensor nodes as input. The Opnet modeler v17.5 was used for the simulations and study. This paper analyses, in terms of delay, throughput, load, data traffic received, data traffic sent and data dropped, the WSN performance. Four variations in design were studied according to the number of nodes, rooms, sensor nodes. The study concluded that multiple coordinators (or nodes) reduced the delay in the transmission, while with one coordinator, larger delays are observed. Similarly, others parameters are affected by the number of nodes.

**Keywords –** Wireless Sensor Network, Zigbee, Opnet.

**Valbona Tahiri**  
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**Assessment of Heavy Metals Content in Vlora Bay using Atomic Absorption Spectrometry**

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**Abstract**

The presence of heavy metals in the maritime waters remains an important issue in the environmental aspects. Here we are going to consider some of the elements that theoretically represent important impact in the quality of the bio system. We obtained that the concentration of Cu, Fe, Cd, Mn fall in the normal range according to the average concentration in other Adriatic areas. The concentration of some of those elements depends on the positions where measurement have been made, indicating that isolated sources of pollution are present. We observe a slight decrease of the concentration of Cu and Mn following maritime local flows and usually, this concentration in the near of coast line below 1m of depth, is stabilized. It resulted that the origin of the metals and metalloids presence, has to do with flows and discharges rather from the sediments or the floor of the sea coast.

**Keywords:** Maritime Pollution, Heavy Metals, Atomic Absorption Spectrometry.

**A Study of Physicochemical Properties and Heavy Metals Concentrations in Oriku Lagoon, Vlora, Albania**

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**Abstract**

During this study we measured physicochemical parameters ( $T^{\circ}C$ , pH, salinity, dissolved oxygen, turbidity) in situ by a multi parameter portable HI 9828 Hanna and concentrations of heavy metals (cadmium, lead, iron and copper) were given by atomic absorption spectrometry in lagoon water's of Orikum, Vlora, Albania.

On the basis of results obtained at the physico-chemical and spectrometric measured in water we found a slight variability in salinity, pH near neutrality with a low mobility of metals and elevated levels of dissolved oxygen and turbidity at stations S1,S2 and S3 subject to the direct influence of oxygenated marine waters and discharges of wastewater from The Pashaliman Base (A Military Base of Vlora District)

The contents of heavy metals concentrations in relation to maximum value are following this trend:  $Fe > Cd > Pb > Cu$ . On the other hand, the spatial distribution of Fe has been found to increase toward the joint point of the two types of waters.

**Keywords:** Lagoon Waters, Physico-Chemical Parameters, Heavy Metals, Atomic Absorption Spectrometry

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## Upcoming Conferences

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- 3rd ICSTR Singapore – International Conference on Science & Technology Research, 28-29 June 2019
- 2nd ICSTR Bali – International Conference on Science & Technology Research, 11-12 July 2019
- 2nd ICSTR Budapest – International Conference on Science & Technology Research, 11-12 July 2019
- 2nd ICSTR Mauritius – International Conference on Science & Technology Research, 21-22 July 2019
- 3rd ICSTR Bangkok – International Conference on Science & Technology Research, 26-27 July 2019
- 2nd ICSTR Barcelona – International Conference on Science & Technology Research, 01-02 August 2019
- ICSTR Istanbul – International Conference on Science & Technology Research, 08-09 August 2019
- 2nd ICSTR Rome – International Conference on Science & Technology Research, 30-31 August 2019
- 2nd ICSTR London – International Conference on Science & Technology Research, 12-13 September 2019
- 2nd ICSTR Jakarta – International Conference on Science & Technology Research, 19-20 September 2019

- ICSTR Hong Kong – International Conference on Science & Technology Research, 26-27 September 2019
- 4th ICSTR Dubai – International Conference on Science & Technology Research, 09-10 October 2019
- 2nd ICSTR Prague – International Conference on Science & Technology Research, 17-18 October 2019
- 4th ICSTR Bangkok – International Conference on Science & Technology Research, 17-18 October 2019
- 4th ICSTR Singapore – International Conference on Science & Technology Research, 15-16 November 2019
- 5th ICSTR Dubai – International Conference on Science & Technology Research, 11-12 December 2019
- ICSTR Sydney – International Conference on Science & Technology Research, 12-13 December 2019
- 3rd ICSTR Bali – International Conference on Science & Technology Research, 21-22 December 2019
- 5th ICSTR Bangkok – International Conference on Science & Technology Research, 23-24 December 2019
- 3rd ICSTR Malaysia – International Conference on Science & Technology Research, 29-30 December 2019