



**EURASIA RESEARCH LIVE**  
**ONLINE CONFERENCE**  
**PROCEEDINGS**

9th ICSTR Dubai – International Conference on  
Science & Technology Research, 22-23 February  
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**Preface:**

Scientific & Technical Research Association (STRA) is a conglomeration of academia and professionals for promotion of research and innovation, creating a global footprint. STRA aims to bring together worldwide researchers and professionals, encourage intellectual development and providing opportunities for networking and collaboration. These objectives are achieved through academic networking, meetings, conferences, workshops, projects, research publications, academic awards and scholarships. STRA strives to enrich from its diverse group of advisory members. Scholars, Researchers, Professionals are invited to freely join STRA and become a part of a diverse academic community, working for benefit of academia and society through research and innovation.

For this conference around 40 Participants from around 11 different countries have submitted their entries for review and presentation.

STRA has now grown to 16500 followers and 5500 members from 65 countries.

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You will be able to freely communicate your queries with us, collaborate and interact with our previous participants, share and browse the conference pictures on the above link.

Our mission is to make continuous efforts in transforming the lives of people around the world through education, application of research & innovative ideas.



## **KEYNOTE SPEAKER**



### **Dr. Yoshiko Yamaguchi**

Home Care Nursing, Faculty of Nursing, Kwassui Women's University, Japan

Topic: Nurse Retention (E.G., Nurse Turnover, Nurses' Intention to Leave), Nurses' Stress (Work Stress, Family Related Stress, Stress Outcome), Employee's Work-Family Interface (Work-Family Conflict, Work-Family Enrichment)

Dr. Yoshiko Yamaguchi has received her PhD in. Kyushu University during the period of 2013-2016. Currently, she is working as research associate in Home Care Nursing, Faculty of Nursing, Kwassui Women's University, Japan. She has successfully completed her responsibilities as a reviewer of eighty-one research articles of twenty-four Journal from 2016-present. And she has been serving as an editorial board member of two Journal; LIFE: International Journal of Health and Life-Sciences and Journal of Practical and Professional Nursing and has been delegated vice president of Healthcare and Biological Sciences Research Association (HBSRA).



## **KEYNOTE SPEAKER**



**Malini Nair**

Co-Curriculum Chair for the Quality Program in the Business Division at Sharjah Women's Campus, United Arab Emirates

Topic: Innovation and lifestyle entrepreneurship: A study of lifestyle enterprises in the UAE

Malini Nair is a Business Faculty at the Higher Colleges of Technology. She teaches classes in Quality, Auditing, Innovation & Entrepreneurship, Management and Leadership as well as Economics. She is interested in the use of interventions, technologies, and tools that facilitate group/team processes and lead to better task outcomes through Quality standards. She has developed and taught several courses related to Quality, HR, Innovation, Marketing and Economics to both MBA and undergraduate students. She is currently a member of the Program Advisory Committee for Quality at the University level. She is a Doctoral candidate pursuing her PhD in Business and Management. She has written several research papers and continues to do so. She has received a SEED grant for one of her research papers. She is actively involved in Community projects and her forte is mentoring and encouraging her students to actively participate in these initiatives. Prior to her appointment as a faculty she has an immense amount of industry experience especially in the retail sector in the UAE. She studied Economics Honors and attended the prestigious Birla Institute of Technology (BIT) in India where she obtained her Master's degree in Business Administration. She went on to work as a Group HR Manager and continued to teach as she believes in sharing the knowledge gained through the industry. Her initiatives at the college level have been highly commended.

## **KEYNOTE SPEAKER**



### **Thillainathan Sathanathan**

Senior Lecturer attached to Department of Medical Education & Research, Faculty of Health-Care Sciences (FHCS), Eastern University, Sri Lanka

Topic: Consideration of practices of formative feedback

Thillainathan Sathanathan is a Senior Lecturer attached to the Department of Medical Education & Research, Faculty of Health-Care Sciences (FHCS), Eastern University, Sri Lanka (EUSL), specialized in Chemistry (BSc), Education (MEd), Medical Education (MPhD, PhD) and Criminal Law (LLM, LLB). Since the inception of the functioning of FHCS, he involved in the effective implementation of the modern form of integrated curriculum for MBBS and BSc. Nursing programs of FHCS. He was also titled as “Saiva Pulr” [Hindu Scholar] as he successfully completed a course in Hindu Philosophy and pass the examination. He developed a culturally sensitive blueprint for formative assessment called the cSEEFAR model to practice in an ethnically diverse environment when he did his Ph.D. at the University of Dundee, UK.



## PRESENTERS



Hassan Davani  
ERCICSTR2201053

### Sustainable Water Infrastructure for Adapting to Coastal Climate Change

Hassan Davani

Civil Engineering, San Diego State University, San Diego, California

#### Abstract

This project seeks to advance the sustainability and resilience of coastal communities against foreseeable impacts of climate change, such as intensified precipitation, sea-level rise (SLR), and SLR-driven groundwater rise. The central hypothesis is that sustainable and resilient infrastructure to manage water supply and flooding in coastal areas requires informed decisions aimed at (i) enhancing sustainability by balancing the local water budget through decentralization and (ii) enhancing resilience against compound flooding in which precipitation may coincide with other inundation sources. Projections of SLR impacts increasingly will need to consider the flooding associated with the interconnections between SLR and shallow coastal aquifers, as well as expected compound flooding under typical precipitation events. Therefore, this project will establish a mechanistic framework to analyze important stressors to water infrastructure, with a focus on disadvantaged communities, and it will develop a decentralized model to enhance their sustainability and resilience. The project also aims to systematically understand the impacts of frequent and longer timescale flooding events on water infrastructure systems and explore the sustainability benefits of decentralized infrastructure to mitigate the compound inundation impacts in which precipitation coincides with other inundation sources. The project team will employ a Life Cycle Assessment (LCA) technique and couple it with distributed hydrologic modeling informed by groundwater table observations. A comprehensive LCA framework will be informed by merging approaches from hydrology and data sciences to forecast the response of water infrastructure systems to future climate change stressors. Because the success of decentralized systems heavily relies on understanding barriers that communities face in system implementation and operation, this project seeks to advance sustainability assessment of infrastructure by incorporating the needs of communities

Salah-Eddine  
Ouldboukhitine  
ERCICSTR2201055

### A Model for Predicting the Hygrothermal Behavior of a Hemp-Concrete Wall Using the Finite-Element Method

Salah-Eddine Ouldboukhitine

IUT Clermont Auvergne, Université Clermont Auvergne, Institut Pascal, France

Sofiane Amziane

Université Clermont Auvergne, Institut Pascal, CNRS, SIGMA Clermont, F-63000 Clermont-Ferrand, France

#### Abstract

Plant-based concrete is a construction material which, in addition to having a very low environmental impact, exhibits excellent hydrothermal comfort properties. In recent decades, numerous studies have been carried out to develop models to evaluate the hydrothermal behavior of porous building envelopes. Most previous models are based on Luikov's theory, considering mass accumulation, air and total pressure gradient. This study presents a methodology for solving the classical one-dimensional hydrothermal transfer model with an implementation in MATLAB. The resolution uses a discretization of the problem according to the finite-element method. The energy and mass balances are expressed using measurable transfer quantities (temperature, water content, vapor pressure, etc.) and coefficients expressly related to the macroscopic properties of the plant-based concrete (thermal conductivity, specific heat, water vapor permeability, etc.), determined experimentally. The methodology is validated on a test case and the results show that the methodology is robust in handling a rationalization of the model whose parameters are not ranked and not studied by their degree of importance.





Yixin Li  
ERICRSLSH2201068

### Three-Dimensional Reconstructions of Canal Network Reveal Coral Growth patterns

Yixin Li

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#### Abstract

Coral reefs are the cornerstone of marine ecosystems. Researchers have performed comprehensive studies on reef-building corals including their genomics, polyp metabolism, disease resistance, and adaptation to environmental change. However, the forming regulations of the canal network in coral colonies are still not understood adequately. The non-transparent skeleton influences direct observation of the distribution, parameters, and relationships among canals in coral colonies. Experiments with traditional biological methods have provided very limited structural information of coral skeletons and internal canals. To solve this problem, high-resolution computed tomography (HRCT), which can be used to non-destructively capture the morphology and internal structure of coral colonies, has gained our attention. In this study, we reconstructed 11 coral species using HRCT to investigate coral growth patterns and parameters. Our reconstructions of canal network revealed the characteristics of different coral species, and we further visualized the growth axes and growth rings to understand the coral growth directions. Our reconstructions can visualize the coral growth processes during different physiological states, which reveals the mechanism of calcium transport in coral colonies. In addition, we calculated the coral skeleton void ratios to ascertain the skeletal diversity, devising a method to quantify coral growth. On the basis of the three-dimensional (3D) reconstructions and growth parameters, we investigated the growth strategies of different coral species. This research increases the breadth of knowledge on how reef-building corals grow their colonies, providing information on reef-forming regulations. The data obtained through HRCT and 3D reconstruction contain a large amount of coral growth information, which can be used in further research on reef-forming patterns under different conditions. The method used in this study can also be applied to animals with porous skeletons.

**Keywords:** High-Resolution Computed Tomography, Canal Network, Structural Information, Reef-Building Coral, Growth Pattern



Joanna Zelazny  
ERICRSLSH2201073

### Kinesiotherapy Online Form of Rehabilitation Due to the Pandemic

Joanna Zelazny

Polish Musculoskeletal Prophylaxis Center, Medical Łódź University, Łódź, Poland

#### Abstract

What to do when the threats of Covid-19 reduce our physical activity? many people stayed at home for long periods. However, their need for exercise is still the same. Many people in need of rehabilitation abandoned them because of fear of the virus. One of the ways to activate people who require rehabilitation without leaving home was the implementation of new technologies. Kinesiotherapy is a well-known field in physiotherapy. However, just a few years ago, few people would have thought about conducting this kind of rehabilitation in on-line form. In Poland and probably in other countries around the world, challenges have been taken up. The most difficult thing was to reach the people most in need of this form of rehabilitation - the elderly persons. At the beginning, many of them were afraid of this form of exercises. However, the need for movement and contact with the therapist were stronger than the fears. Many people from the gym exercises switched to virtual reality. Less than 2 years ago the pandemic was announced. Nowadays it can be seen how the online kinesiotherapy exercises affected people who took advantage of this opportunity. In Poland, many classes are now held stationary. The vast majority of people, however, like online classes. For many people it is the dominant form of rehabilitation activity, for others it is only a supplement. Cameras and the Internet will never replace a personal meeting with a therapist, but

the pandemic has opened up new possibilities in rehabilitation. This task brought with it many opportunities and threats, it brought advantages and disadvantages, which will be discussed during the presentation



Giorgi Zaalishvili1  
ERCICRLSH2201075

**Zebrafish as a Model for Genotoxic Anticancer Drug Research**

**Giorgi Zaalishvili1**

**Institute of Cellular and Molecular Biology, Agricultural University of Georgia, Tbilisi, Georgia**

**Margarita Karapetian1**

**Institute of Cellular and Molecular Biology, Agricultural University of Georgia, Tbilisi, Georgia**

**Abstract**

Poly (ADP-ribose) polymerase-1 (PARP-1), as well as topoisomerases (Top) nowadays serve as a target for cancer therapy and have been extensively studied in mammalian model systems, however in other vertebrate models remain less characterized. Zebrafish is emerging as an alternative vertebrate model for recapitulation of numerous human diseases including cancer due to its cost effectiveness, high fecundity, transparency of embryos and homology of major organs and cell types to that of mammals. Our studies have shown that Top 2 poisons (doxorubicin and etoposide) do not cause death in 1-day post fertilization (dpf) embryos, however they induce DNA damage as observed by alkaline comet assay. After the detailed examination of this phenomenon, it was shown by fluorescence microscopy that DOX uptake depends on the stage of embryonic development and differs in in vivo and ex vivo systems. We have also revealed some similarities of response towards genotoxic stress induced by Top 1 poisons (rubitecan and irinotecan) and PARP-1 inhibitor olaparib between mammalian and zebrafish systems. It was shown that Top 1 poisons increase mortality of 1 dpf zebrafish embryos and induce DNA damage. It was also demonstrated that PARP-1 inhibitor – olaparib, significantly increased the mortality of rubitecan treated embryos as well DNA damage level. Interestingly, chemical inhibition of tyrosyl-DNA phosphodiesterase -1 (TDP1), the main player in Top 1 cleavage complex repair in mammalian system, did not show any effect on embryo mortality and DNA damage level. On the next step we evaluated the effect of Top 1 poisoning and PARP inhibition on caspase-dependent apoptosis in zebrafish embryos. We have shown PARP-1 apoptotic fragmentation in 5-hour rubitecan treated zebrafish embryos by Western Blotting. For in situ detection of apoptotic cells, whole mount immunofluorescence using anti-activated caspase-3 Abs has been performed. Caspase-3 positive cells were observed predominantly in the brain, eye and notochord area. The amount of caspase-3 positive cells was significantly reduced in rubitecan treated embryos in the presence of olaparib. Collectively, our data introduces zebrafish as a valuable model for anticancer drug research.

**Keywords: Zebrafish, Embryo, Topoisomerase, PARP-1, Apoptosis**

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