

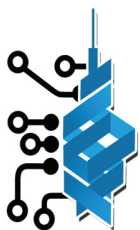
# PROCEEDING BOOK

**Volume 1, Issue 10**

**ASIEM-APRIL-2022**

**Venue: Mercure Hotel Amsterdam City**

**Date: April 16-17, 2022**



**Institute of  
Applied Sciences  
& Engineering Technology**

# **IAET 2<sup>nd</sup> International Conference on Aerospace Engineering, Applied Sciences, Information Technology, Electrical & Mechanical Engineering (ASIEM)**

Conference organized by:



This conference is dedicated to educators all over the world and to the members of the Institute of Applied Sciences and Engineering Technology (IAET) whose passion for teaching, learning, research, and service are helping to transform the academy in many positive ways.

#### **Mission, Vision, and Core Values**

Research & Innovation, Knowledge exploration and sharing, nurturing novel ideas, addressing challenges to Applied Sciences and Engineering Technology.

Lead the scholarly community through global communication and nurturing innovative ideas, developments and experiments in the field of Applied Sciences and Engineering Technology

We try to give our members a positive network/relation building experience by: 1) We have team building/socializing/gaming sessions where the members mix and talk and share with each other in an informal environment. 2) We arrange various customized events and capacity building activities for higher education institutions. 3) Dedicated and committed team to support individual and corporate members of our scholarly community.

#### **Membership, Conference, Publishing, and Research Information**

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**IAET 2<sup>nd</sup> International Conference on Aerospace Engineering, Applied Sciences, Information Technology, Electrical & Mechanical Engineering**

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## Welcome Message

The Institute of Applied Sciences and Engineering Technology (IAET) welcomes you to the IAET **2<sup>nd</sup>** International Conference on Aerospace Engineering, Applied Sciences, Information Technology, Electrical & Mechanical Engineering (ASIEM)

We are happy you decided to join your colleagues from around the world to explore innovative technologies, pioneering pedagogical strategies, and a sampling of international collaborations that are being used to engage and retain students, researchers and Scholars in the new millennium.

## Scientific Committee

Lobna Ali Al-Khalifa, National Authority for Qualifications & Quality Assurance of Education & Training (QQA), Bahrain  
Lothar Auchter, University of Applied Science, Kaiserslautern, Germany  
Louise van Scheers, Department of Marketing and Retail, University of South Africa  
Magorzata Magdalena Hybka, Pozna University of Economics and Business, Poland  
Marvin O. Bates, Lewis University, USA  
Maria Binti Abdulrahman, Universiti Utara Malaysia, Malaysia  
Michael D. MacColl, Vancouver Island University, Canada  
Mukherjee Farooq Anwar, The University of Lahore, Pakistan  
Dr. Nik Hazimah Nik Mat, Universiti Malaysia Terengganu, Malaysia  
Dr Mourad Mansour, King Fahd University of Petroleum and Minerals Saudi Arabia  
Majid Asadnabizadeh, University of Payam Noor, Bushehr Centre, Iran  
Phongsakorn Methitham, Naresuan University Phitsanulok, Thailand  
Maduranga Pushpika Kumara Withanawasam, University of Sri Jayewardenepura Nugegoda, Sri Lanka  
Rodney Oudan, Worcester State University in Massachusetts, USA  
Roger B Mason, Cape Peninsula University of Technology, South Africa  
Sampath Kumar, University of Wisconsin Green Bay, USA  
Salil K Sen, NIDA Business School, Bangkok, Thailand  
Simon Best, Medgar Evers College, New York, USA  
Yongmei Bentley, University of Bedfordshire, UK

## Acknowledgements

The organizing committee would like to thank all those people who were involved in making the conference a success. A great amount of planning and organizing is required to hold a successful conference, so we are indebted to those who volunteered their time and energy.

We want to thank all the members of the Institute of Applied Sciences and Engineering Technology (IAET) who volunteered their time to help organize the conference.

## **ENGINEERING TECHNOLOGY**

Acoustical Engineering Aerospace Engineering, Agricultural Engineering Biological Engineering and Sciences, Biological Systems Engineering Biomedical Engineering, Bioprocess Engineering Biotechnology, Building Services Engineering Chemical Engineering, Industrial Engineering Information Engineering, Informational Technology Manufacturing Engineering and Technology, Materials Engineering Mechanical Engineering, Mechatronics Nanotechnology and Nanoengineering, Naval Engineering Nuclear Engineering, Technology for Cloud Computing Technology for Community, Technology for Digital Age Technology for Human Use, Technology for Learning Civil Engineering, Computer Engineering Current issues and challenges in Engineering, Electrical Engineering Electronic Engineering, Energy Engineering Environmental Engineering, Food Engineering Genetic Engineering, Geotechnical Engineering Ocean Engineering and Technology, Optical Engineering Petroleum Engineering, Power Engineering Process Engineering, Resource Engineering Sensing Technology, Structural Engineering Systems and Software Engineering, Technology for Big Data Textile Engineering, Thermal Engineering Transport Engineering, Web Engineering Vehicle Engineering.

## **APPLIED SCIENCES**

Artificial Intelligence, Architecture, Astronomy, Biological Sciences, Botany, Chemistry, Design, Earth Science, Ecology, Marine Science, Physics, Space Sciences, Life sciences, Computer Sciences, Logic, Mathematics, Statistics, Systems Science, Electrical Engineering, Information, Technology, Industrial Engineering, Mechanical Engineering, Applied Physics, Health Sciences and Medicine, Ceramic Engineering, Computing Technology, Electronics, Energy, Environmental Engineering Sciences, Engineering physics, Environmental Technology, Fisheries Science, Forestry Science, Materials Engineering Micro technology, Nanotechnology, Nuclear, Technology, Optics, Zoology Transportation

## Conference Schedule

### IAET 2<sup>nd</sup> International Conference on Aerospace Engineering, Applied Sciences, Information Technology, Electrical & Mechanical Engineering (ASIEM)

Mercure Hotel Amsterdam City  
April 16-17, 2022

ASIEM-2022

Sunday, April 17, 2022

#### Day-at-a-Glance

09:00 am - 09:20 am	Registration and Kit Distribution
09:20 am - 09:40 am	Introduction of Participants
09:40 am - 09:50 am	Inauguration and Opening address
09:50 am - 10:00 am	Grand Networking Session
10:00 am - 10:30 am	Tea



## Session 01

10:30 am - 12:00 pm

### Track 01: Engineering, Technology & Applied Sciences

Power System Demand-Side Response Development with the Mediating Role of Aggregators: Integrated Risk Analysis Approach

*Speaker: Danijela Milo Spri — Faculty of Economics and Business, University of Zagreb, Croatia*

### Track 02: Business, Economics, Social Sciences & Humanities

Managing Knowledge Resources in UAE Family Firms

*Speaker: Omar Belkhodja — American University of Sharjah, Management Department Sharjah, United Arab Emirates*

**Lunch (12:00 pm - 01:00 pm)**

## Conference Attendees

The following scholars/practitioners/educationist who don't have any paper presentation, however they will attend the conference as delegates & observers.

Participant Name: Patrick Li

Reference ID: ABSHL-422-08

Affiliation: University of North Carolina at Chapel Hill, Class of 2025

B.S. Statistics and Analytics

Robertson Scholars Leadership Program

Participant Name: Matthew Tweden

Reference ID: ABSHL-422-09

Affiliation: University of North Carolina at Chapel Hill, Class of 2025

B.S. Statistics and Analytics

Robertson Scholars Leadership Program

Participant Name: Gorm Jacobsen

Reference ID: ABSHL-422-05

Affiliation: Norway

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**IAET 2<sup>nd</sup> International Conference on Aerospace Engineering  
Applied Sciences, Information Technology, Electrical & Mechanical  
Engineering**

**ASIEM-2022**

**Saturday, April 16, 2022**

Conference one day is reserved for participants own tourism activities.

## **Conference Abstracts**

### **Track 1: Engineering, Technology & Applied Sciences**

# Power System Demand-Side Response Development with the Mediating Role of Aggregators: Integrated Risk Analysis Approach

Davor Zoričić\*, Goran Knezevic\*\*, Marija Miletic\*\*\*, Denis Dolinar\*, Danijela Milos Sprcic

\*Faculty of Economics and Business, University of Zagreb, Croatia

\*\* Faculty of Electrical Engineering, Computer Science and Information Technology, University of Osijek, Croatia

\*\*\*Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia

**Corresponding email:** johnson.oluegbuniwe@akun.edu.tr

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Establishment of the EU Energy Union aims to deliver a secure, sustainable and competitive energy system, while at the same time being less dependent on external energy supplies through diversification, efficiency and renewable sources of energy. Demand-side response plays an important role here as consumers are put at the centre of a renewed EU energy system which offers high level of independence to consumers in producing, storing and selling energy but also guarantees flexibility and protection. Most prominent advantages of introducing a demand-side response are greater level of flexibility of power system as well as higher profitability compared to the construction of new power plants, what should reduce overall system costs. However, the success of demand-side response is strongly dependent on many factors like legal framework, technology, market development but also user acceptance and engagement. The establishment of aggregators as mediators in demand-side response ensures accumulation of distributed energy resources (DERs), especially small and medium-sized which are not profitable to operate independently in the market. This paper explores perspectives of demand-side response development with the mediating effect of aggregators in the EU member state. We use hybrid research methodology which combines instruments of strategic analysis like PESTLE framework, SWOT and TOWS analysis, together with the integrated risk management (IRM) framework in order to identify, evaluate, rank and propose efficient management of prominent risks to which this initiative is exposed. In the proposed framework interdependences between identified risk factors are also taken into account. Some of the risks recognized in the analysis are: political risk, risk of entry barriers, consumer behaviour risk, cyber security risk, risk of substitute technologies and few others.

**Index Terms:** Demand-Side Response, Aggregators, Distributed Energy Resources, PESTLE/SWOT Framework, Integrated Risk Analysis

## **Conference Abstracts**

### **Track 2: Business, Economics, Social Sciences & Humanities**

# Managing Knowledge Resources in UAE Family Firms

Omar Belkhodja\*

American University of Sharjah, Management Department Sharjah, United Arab Emirates

**Corresponding email:** obelkhodja@aus.edu

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Over the last few decades, knowledge has become the major source of competitive advantage for businesses [1,2] as firms compete in a complex and competitive environment, in which customers increasingly seek value [3]. The knowledge-based view introduces a shift in the value creation process as it acknowledges that knowledge structures have inherent value creation capabilities [4] and that intangible resources have replaced tangible ones in the process of value creation [5]. Based on the knowledge-based view, the alignment and integration of knowledge resources with business strategy are necessary for knowledge value creation [6,7]. Knowledge resources need to be deployed and managed through appropriate processes [8] to standardize and formalize knowledge flows and improve production activities [9]. Knowledge processes are defined as the knowledge means by which value is added throughout the company's activities to create a competitive advantage [10]. Knowledge management research focused extensively on how large firms manage knowledge-based resources and implement effective strategies to leverage the newly acquired or the already existent knowledge. However, only a few studies addressed how small and medium-sized enterprises, that operate under more resource constraints, take advantage of their knowledge resources and manage them to gain a competitive advantage. Small and medium-sized family businesses face even more challenges when managing their knowledge resources due to their unique characteristics compared to non-family businesses such as their ownership structure, strategic intent, and the influence of the attitude and behavioral traits of the owner-managers on the strategic direction adopted by the family business. The fact that family firms represent over 75% of the total number of firms in the United Arab Emirates (UAE) and their significant contribution to the economy and to an increased scholarly interest, we still know very little about KM processes in small and medium-sized family firms and how these family firms manage their knowledge resources and their absorptive capacities. There is a lack of KM studies that are applied to family businesses despite their unique configuration of human capital and unique approach in managing knowledge-based resources. Our paper aims to contribute to the knowledge management and the family business literatures and addresses the research gaps identified above by examining the KM processes and ACAPs in two small and medium-sized family businesses. That is, our contribution consists of advancing our understanding of knowledge mechanisms by focusing on the study of the intricacies that exist between the KM processes and the firm's absorptive capacity. Hence, the objectives of our study are: (1) to explore the specificities of the relationship between KM processes and a firm's absorptive capacity in a context of knowledge-based view using externally and internally generated knowledge as an input. This requires to clarify the role of knowledge processes into the company's value creation dynamics and to explore the relationships between the processes and capacities mentioned above; (2) to delineate and characterize the importance of the potential and the realized absorptive capacities; and (3) to examine and explore the knowledge specificities of small and medium-sized family businesses based in the United Arab Emirates (UAE). Two case studies in the context of UAE-based family businesses are used as the main research method.

**Index Terms:** Knowledge, Family, UAE

## Upcoming Events

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