

ECBA

**Phuket Thailand
December 05-06, 2018**

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Volume 04, Issue 25

**Society of Engineering &
Technology, Computer,
Basic & Applied Sciences**



Academic Fora

CONFERENCE PROCEEDINGS

BOOK OF ABSTRACTS ECBA-2018

International Conference on
“Engineering & Technology, Computer, Basic & Applied
Sciences”
(ECBA-2018), Phuket Thailand



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Book of Abstracts Proceeding

International Conference on
“Engineering & Technology, Computer, Basic & Applied
Sciences”
(ECBA-2018)

Phuket Thailand

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Proceedings of the International Conference on
“Engineering & Technology, Computer, Basic & Applied
Sciences
(ECBA-2018)”

ISBN: 978-969-683-214-0

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**International Conference on
“Engineering & Technology, Computer, Basic &
Applied Sciences”
Phuket Thailand**

**Venue: Phuket Orchid Resort & Spa Kata Group,
Resorts, Thailand.**

ORGANIZING COMMITTEE

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CONFERENCE CHAIR MESSAGE

Dr. Malika Ait Nasser

International Conference on “Engineering & Technology, Computer, Basic & Applied Sciences” serves as platform that aims to help the scholarly community across nations to explore the critical role of multidisciplinary innovations for sustainability and growth of human societies. This conference provides opportunity to the academicians, practitioners, scientists, and scholars from across various disciplines to discuss avenues for interdisciplinary innovations and identify effective ways to address the challenges faced by our societies globally. The research ideas and studies that we received for this conference are very promising, unique, and impactful. I believe these studies have the potential to address key challenges in various sub-domains of social sciences and applied sciences.

I am really thankful to our honorable scientific and review committee for spending much of their time in reviewing the papers for this event. I am also thankful to all the participants for being here with us to create an environment of knowledge sharing and learning. We the scholars of this world belong to the elite educated class of this society and we owe a lot to return back to this society. Let’s break all the discriminating barriers and get free from all minor affiliations. Let’s contribute even a little or single step for betterment of society and welfare of humanity to bring prosperity, peace and harmony in this world. Stay blessed.

Thank you.

Dr. Malika Ait Nasser

Conference Chair

Email: chair2018@academicfora.com

ECBA-2018



Conference Schedule

DAY 01 Wednesday (December 05, 2018)

Venue: Room 1

08:00 am – 08:10 am	Welcome Reception & Registration
08:10 am – 08:20 am	Opening Ceremony
08:20 am – 08:30 am	Welcome Remarks – Conference Coordinator Academic Fora
08:30 am – 08:40 am	Introduction of Participants
08:40 am – 08:50 am	Group Photo Session
08:50am – 09:00 am	Grand Networking Session and Tea Break

DAY 01 Wednesday (December 05, 2018)

Session 1 (10:00 am – 12:30 pm)

Venue: Room 1

Track A: Engineering and Technology, Computer, Basic & Applied Sciences

EBAE-DEC-103	Percutaneous implantation of a vascular occluder for closure of perivalvular leaks does not alter the heart function nor the aortic blood flow	Urszula Paslawska
EBAE-DEC-104	Implantation of a novel occluder for minimally invasive closure of perivalvular leaks does not influence the blood picture	Robert Paślawski
EBAE-DEC-105	Histopathological picture of the aorta 1 and 14 days after percutaneous implantation of an occluder for perivalvular leaks closure – a preliminary study.	Agnieszka Noszczyk-Nowak
EBAE-DEC-106	Two-step functionalization technology to stably form carboxy group in molybdenum disulfide	Joonhyub Kim
EBAE-DEC-107	Fabrication Methods for Colorimetric Sensor Array to Detect Toxic Gases	Dami Kim
PKE-2128-101	Predominant Period Based Site Classification: A Case Study for Strong Ground Motion Stations in Kocaeli (Turkey)	Fadime Sertçelik
PKE-2128-102	Detection of Secondary Faults in The North Anatolian Fault Zone by the Magnetic and Gravity Methods in the Izmit Gulf (Turkey)	İbrahim Sertçelik
PKE-2128-103	Investigation of Site Characterization in Akdeniz Region, Turkey by Using Seismic Refraction and Surface Wave methods	Cengiz Kurtulus

Track B: Medical, Medicine, Health Sciences

SIN-1118-105M	Establishment of the Shari'ah Framework for the Application of Somatic Gene Therapy in Human	Zakiah Samori
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Lunch Break (12:30 – 01:30 pm)

Closing Ceremony

LIST OF CONFERENCE ATTENDEES

The following scholars/practitioners/educationists don't have any paper presentations; however, they will be attending the conference as delegates and observers.

ID	Name	Affiliation
PKM-1128-101	Esther Granot MD	Hebrew University- – Hadassah Medical School, Jerusalem Israel

DAY 02 Thursday December 06, 2018)

City History and Discussion Session

All respective guests are free to conduct their own sightseeing and tour. The second day of the event is reserved for this memorable purpose.

TRACK A: ENGINEERING AND TECHNOLOGY, COMPUTER, BASICS AND APPLIED SCIENCES

Percutaneous Implantation of a Vascular Occluder for Closure of Perivalvular leaks does not alter the Heart Function nor the Aortic Blood Flow

Urszula Paślawska^{1*}, Wojciech Wojakowski², Grzegorz Smolka³, Robert Paślawski⁴, Adrian Janiszewski⁵, Marcin Michałek⁶, Agnieszka Noszczyk-Nowak⁷, Kacper Nowak⁸, Michał Płciennik⁹, Michał Tendera¹⁰

Abstract Perivalvular leaks are among the possible complications in patients after implantation of heart valve prosthesis. (1-3) In order to prevent the development of heart failure, techniques of minimally invasive closure of perivalvular leaks are being developed. (3-6). The aim of the study was to determine whether the minimally invasive occluder implantation into a large arterial vessel will produce significant haemodynamic changes in the heart and the examined vessel in experimental animals. The procedures were performed on 36 pigs, divided into three groups representing acute (24 hours), subchronic (14 days) and chronic (1 month) response. EKG (I, II, III, aVR, aVL, aVF), echocardiographic examination (standard 2D and M-Mode) as well as a blood flow measurement by Doppler ultrasound imaging in the aorta on the day of implantation and at the end of the experiment were performed. All animals were examined after premedication by an intramuscular injection of medetomidine (1000 mcg/m²), ketamine (5 mg/m²) and midazolam (30 mg/m²). The occluder was implanted into the abdominal aorta via the femoral artery and stabilized with a 10F vascular stent immediately after the first examination. No statistically significant differences in electro- and echocardiographic parameters were found. Fourteen days after the implantation, a significant increase of the blood flow velocity in the examined vessel was noted (0.65 ± 0.15 vs 0.81 ± 0.28) ($p < 0.05$), however after 28 days the flow did not differ significantly anymore (1 ± 0.32). Percutaneous implantation of a vascular occluder for closure of perivalvular leaks does not alter the heart function nor the aortic blood flow

Keywords: Vascular Occlude, Perivalvular, Heart Function, Aortic Blood

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Implantation of a Novel Occluder for Minimally Invasive Closure of Perivalvular Leaks does not Influence the Blood Picture

Robert Paślowski^{1*}, Urszula Paśławska², Wojciech Wojakowski³, Grzegorz Smolka⁴, Adrian Janiszewski⁵, Marcin Michałek⁶, Agnieszka Noszczyk-Nowak⁷, Kacper Nowak⁸, Michał Płóciennik⁹, Michał Tendera¹⁰

Abstract Implantation of a heart valve prosthesis can result in a number of complications, including a perivalvular leakage. It can manifest itself in a potentially life-threatening conditions like heart failure, haemolytic anaemia or infectious endocarditis. (1, 2) This complication can be managed by a cardiac surgery or using a minimally invasive, percutaneous leakage closure techniques. The aim of the study was to determine whether the newly developed minimally invasive closure system for perivalvular leaks may cause haematological, biochemical or blood clotting abnormalities. The procedures were performed on 36 pigs, divided into three groups representing acute (24 hours), subchronic (14 days) and chronic (1 month) response. Blood samples were taken on the day of implantation and at the end of the experiment. The samples were collected after a 12-hour overnight fast from animals premedicated by an intramuscular injection of medetomidine (1000 mcg/m²), ketamine (5 mg/m²) and midazolam (30 mg/m²). The occluder was implanted into the abdominal aorta via the femoral artery access and stabilized with a 10F vascular stent. Complete blood count (RBC, WBC, Ht, Hb, MCV, MCH, MCHC), biochemistry (AspAT, AlAT, urea, creatinine, total protein, albumin, Na⁺, K⁺, Ca⁺⁺, Mg⁺⁺, Cl⁻, glucose) and coagulation parameters (fibrinogen, APTT, PT) were determined. No statistically significant differences between the examined parameters were found. Implantation of a novel occluder for minimally invasive closure of perivalvular leaks does not influence the studied blood parameters neither in the acute, nor the chronic stage.

Keywords: Invasive Closure, Occluder, Perivalvular

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Histopathological Picture of the Aorta 1 and 14 days after Percutaneous Implantation of an Occluder for Perivalvular Leaks Closure – a Preliminary Study

Agnieszka Noszczyk-Nowak^{1*}, Marcin Nowak², Urszula Paśławska³, Wojciech Wojakowski⁴, Grzegorz Smolka⁵, Robert Paśławski⁶, Adrian Janiszewski⁷, Marcin Michałek⁸, Kacper Nowak⁹, Michał Płciennik¹⁰, Michał Tendera¹¹

Abstract The aim of the study was to determine the histopathological changes of the arterial wall after the minimally invasive occluder implantation in the experimental animals. Materials and methods: Pigs were humanely euthanized 24 hours (n=5) and 14 days (n=5) after implantation of the occluder into the abdominal aorta and the aortic specimens were collected for further histopathological examinations. Sections of aorta were fixed in a 7% neutral-buffered formalin solution, routinely processed and embedded in paraffin. Sections 4 µm thick were prepared from paraffin blocks and stained with hematoxylin and eosin. Microphotographs of the analyzed sections were subjected to computer-assisted image analysis, using cell^A software (Olympus Soft Imaging Solution GmbH, Germany) coupled with an Olympus BX53 optical microscope, with a ColorView IIIu digital camera (Olympus, Japan). Results: Twenty-four hours after occluder implantation a thinning of the tunica media was observed due to its stretching by the occluder. No inflammatory infiltrations were observed in any of the examined preparations. Fourteen days after implantation, the tunica media was slightly thicker than on the first day after the implantation, but still thinner than in control animals. Lymphocytic inflammatory infiltrations appeared in the tunica intima (due to direct contact with the occluder), as well as in tunica media and tunica adventitia. No granulocyte infiltration was observed. Conclusions: Implantation of the occluder induces a minor inflammatory reaction 14 days after the procedure. A longer observation period after occluder implantation is recommended.

Keywords: Histopathological Picture, Implantation, Occluder, Perivalvular

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Two-Step Functionalization Technology to Stably form Carboxy Group in Molybdenum Disulfide

Daeki Kim^{1*}, Joonhyub Kim²

Abstract Researchers at UC Berkeley and University of Columbia independently studied the electronic structure of monolayer molybdenum disulphide (MoS₂) and reported that the bandgap increased as decreased MoS₂ layer and MoS₂ ultimately had a direct bandgap of about 1.9 eV with monolayer. As a result, studies on MoS₂ among transition metal dichalcogenides (TMDs) have been actively conducted. However, MoS₂ have limitation on wide application because of difficult in functionalization. In this paper, we introduce the functionalization of MoS₂ through two steps. Ar plasma treatment was carried out at fixed power (10 W) and various treatment times to make sulfur vacancy in MoS₂ with three layers grown by chemical vapor deposition. The etching time for the theoretical sulfur size was confirmed to be 2 seconds through cross-checking by atomic force microscopy (AFM) and Raman analysis. In addition, X-ray photoelectron spectroscopy (XPS) analysis showed that the S/Mo ratio of plasma-treated MoS₂ decreased from 2 to 1.51. This result implies that sulfur vacancies were formed without any defect on Mo. In order to stably form carboxy groups in the sulfur vacancy site through the dative bond, the plasma-treated MoS₂ film was immersed in a 40 mM 3-mercaptopropionic acid (MPA) solution for overnight. The MPA-treated MoS₂ film has a peak for the carboxy group assigned to 290 eV in C1 deconvolution, without changing the large resistance value compared to the untreated MoS₂ film, suggesting that the MoS₂ film was functionalized while retaining the intrinsic properties of the MoS₂ film. We introduced a stable functionalization method of MoS₂. The functionalization of the MoS₂ film through the dative bond to the sulfur vacancy can maintain the unique properties of MoS₂.

Keywords: MoS₂ Functionalization, Plasma Treatment, Formation of Carboxy Group

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Fabrication Methods for Colorimetric Sensor Array to Detect Toxic Gases

Dami Kim^{1*}, SeJin Kim², Sanghyo Kim³

Abstract A gas sensor or pH sensor based on pH indicators can detect a presence or absence of a target chemical through color change at the same time with the chemical reaction. Colorimetric sensors have been applied to detection of toxic gas and also to various fields such as diagnosis of disease and detection of a specific chemical substance. The sensitiveness of the colorimetric sensor is determined by the chemical potential of the substrate, the thickness of the indicator, the solvent, and the surface uniformity. Therefore, it is important to fabricate a colorimetric sensor by uniformly coating an indicator with a desired thickness. The printing method is a cost-effective solution and fast way for sensor fabrication. In this study, we focused on the fabrication of chips using novel ink and printing method for making colorimetric sensors.

Keywords: Colorimetric, Chemical indicator, Gas detection, Printing method, Sensor

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Predominant Period Based Site Classification: A Case Study for Strong Ground Motion Stations in Kocaeli (Turkey)

Fadime Sertçelik^{1*}, Hamdullah Livaoğlu², Cengiz Kurtuluş³

Abstract Experimental predominant periods are important in order to quantify the site classification of strong ground motions. In engineering seismology, predominant period site classifications were developed taking into account of total sediment thickness effect. Within this framework Response Spectral H/V ratios of 15 ground motion stations in Kocaeli (Turkey) operated by AFAD (T.C. Disaster and Emergency Management Presidency). 225 acceleration records were acquired. They were eliminated and analyzed according to criteria's that ranging from 3 to 5 magnitude having crustal depths (0-25 km) and near field earthquakes (<150 km) and signal-noise ratio. Elastic response spectral H/V were evaluated using S-wave phase. The signal wavelengths and filter properties were considered to be for all events. It was observed that response spectral ratio's predominant periods reveal reliable results in sediment covers reflecting deeper stiff or soft soil effect characteristics that could be useful in hybrid seismic site classification schemes.

Keywords: Response Spectra, Predominant periods, Strong Ground Motion Data

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Detection of Secondary Faults in the North Anatolian Fault Zone by the Magnetic And Gravity Methods in the Izmit Gulf (Turkey)

İbrahim Sertçelik^{1*}, Metin Aşç², Ertan Pekşen³, Fadime Sertçelik⁴, Bülent Doğan⁵, Ahmet Karakaş⁶, Cengiz Kurtuluş⁷, Selin Yavuzylmaz⁸

Abstract The North Anatolian Fault System (NAFS) is a very well-known strike-slip right-lateral fault in Turkey. The NAFS lies along the Black Sea region with a 1200 km long from east to west in Turkey and it responsible for major seismic events along the fault system and its territory. When the NAFS reaches Adapazarı and Kocaeli, the major fault are divided two branches which are northern (NAFS-NB) and southern (NAFS-SB) parts. The NAFS has been studied very well. However, some secondary faults of the NAFS-NB have not been fully studied as a small scale in Kocaeli region. In this study, we investigate some previously unknown secondary faults using geological evidence and some surface geophysical measurement to understand tectonic evolution of the territory. As a geophysical measurement, we applied magnetic method to detect faults using surface observations. For this purpose, 13 profiles magnetic measurements and the gravity data obtained from the same locations were modeled to reveal the fault geometry and its depth and orientation. The slope of the fault in this region varies from north to south between 45° and 60° degrees. The faults are not continuous in the east-west direction but are segmented. The structural development of the NAFS-NB began in the Plio-Quaternary period (upper Neotectonic period) and provides sedimentation of material collected in these depression regions up to date. Some geological observation and evidence from Quaternary period reveals that the units what we investigate would be Pliocene deposits. The results suggest that these secondary faults are deeply connected with the NAFS-NB. This is a type of an asymmetric negative flower structure of the right-lateral strike-slip fault deformation region.

Keywords: North Anatolian Fault System, Secondary Faults, Magnetic Method, Gravity Method, Asymmetric Negative Flower Structure

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Investigation of Site Characterization in Akdeniz Region,Turkey by Using Seismic Refraction and Surface Wave methods

Cengiz Kurtulus^{1*}, Fadime Sertcelik², Ibrahim Sertcelik³,
Hamdullah Livaoglu⁴

Abstract Multichannel Analysis of Surface Waves (MASW), Refraction Microtremor (ReMi) and Microtremor measurements were performed to predict site characterization at 65 strong motion stations of AFAD (Disaster and Emergency Management Presidency) in Akdeniz region in Turkey. Reliable field response information is required to investigate the impacts of the region and to assess the risk of the area. The soil conditions of the Akdeniz region are specified from MASW, ReMi and Microtremor studies of AFAD's strong motion stations in this area. HVSR technique was conducted to determine dominant frequency values at different amplification levels. The Akdeniz region was classified according to Vs30 based NEHRP Provisions, Eurocode-8 and TBDY-2018 and Rodrigez-Marez, (2001). According to the NEHRP Provisions, 1 station is classified as class A, 7 stations as B and 38 stations as C and 19 stations to be class D. According to Eurocode-8, 6 stations correspond to class A, 39 stations B, and 20 stations D. The soil classes in the NEHRP system correspond to that of TBDY-2018. According to Rodrigez-Marez, (2001), 8 stations are classified as A, 17 stations B, 8 stations C-1, 13 stations C-2, 5 stations C-3,11 stations D-1, 1station D-2, 1 station D-3, 1 station E and 1 station is undistinguished. The predominant period of the region ranges from 0.07 to 1.47s and the dominant magnification values vary between 0.79 and 8.5.

Keywords: Seismic Refraction, Surface Wave methods, Characterization

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TRACK B: MEDICAL, MEDICINE AND HEALTH SCIENCES

Establishment of the Shari'ah Framework for the Application of Somatic Gene Therapy in Human

Zakiah Samori¹, Fadilah Abd Rahman²

Abstract Human gene therapy is best known as a transfer of nucleic acids to either the somatic cells or germ cells of an individual. It introduces genetic materials which have therapeutic purpose ranging from inherited genetic disorders to certain malignancies and infectious diseases. This medical scientific breakthrough has received lucrative demand worldwide as it offers potential treatment to cure genetic diseases in human at the molecular level. Since then, thousands of people have already participated in the trials thus it is likely to be part of medical practice in the future. Despite of the tremendous benefits that it promises, this new biomedical technology has given rise to several contentious issues from the ethical and religious point of view. Since it comprises of two different therapies namely somatic and germ line gene therapy, each involves different procedures thereby poses different legal ruling and decision. This study attempts to propose a complementary model of the Shari'ah framework on the human gene therapy with special reference to the somatic gene therapy. This proposed framework is designed and developed to fulfil the lacuna of the Shari'ah Framework on the application of the somatic gene therapy after an in depth study of its position from the Shari'ah point of view. In achieving this, a detailed analysis and outlook into the Qur'anic evidences along with the Hadith of the Prophet Muhammad pbuh were carried out. Following this, its position from the pragmatic approach of the Maqasid al-Syariyyah (Objective of the Shari'ah) and the Qawa'id Fiqhiyyah (Islamic Legal Maxims) is also analysed in further detail. Various fatwas (Islamic verdict) decreed by the variety of fatwa councils from all over the world are also highlighted. This model of Shariah Framework would serve as the ethical basis for the application of somatic gene therapy in Malaysia and beyond (particularly Muslim countries) especially for Muslim doctors, scientists and Muslims at large. For Muslim countries such as Malaysia where Muslims makes the majority of the population and Islam as the official religion in Article 3 of its Federal Constitution, this framework is deemed to be important reference in providing the essential guidelines on the permissibility of this therapy. Consideration of the position of Somatic Gene Therapy from the Shari'ah perspective is undeniably crucial in any attempt to regulate Somatic Gene Therapy in any Muslim countries in the future.

Keywords: Somatic Gene Therapy, Shari'ah Framework, Islamic Principles Maqasid Syariyyah Qawaid Fiqhiyyah

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