



International Symposium on Electric Aviation and Autonomous Systems 2018

October 10-12, 2018

**National Aviation University
Kyiv, Ukraine**

Symposium Program

Symposium Chair & Rector of NAU

Volodymyr ISAIENKO
National Aviation University, Ukraine

Symposium Founding Chair

T. Hikmet KARAKOC
Eskisehir Technical University, Turkey
SARES Chair

Symposium Co-Chairs

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National Aviation University, Ukraine

Sergii BOICHENKO
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Symposium Technical Chairs

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Suleyman Demirel University, Turkey

Kateryna SYNYLO
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Murat AYAR
Eskisehir Technical University, Turkey

Orhan ARAS
Eskisehir Technical University, Turkey

Utku KALE
Budapest University of Technology and Economics, Hungary

October 10, 2018 Wednesday (Day 1)	
08:30-09:30	REGISTRATION (Room: First Building Council Hall)
09:30-10:30	OPENING SESSION (Room: First Building Council Hall) Prof. Dr. Isayenko Volodymyr Nikolaevich – Rector of NAU Prof. Dr. T. Hikmet Karakoc – Founding Chair of ISEAS Prof. Dr. Oleksandr Zaporozhets – Co-Chair of ISEAS 2018 Burak Pehlivan – President of International Turkish Ukrainian Businessmen Association
10:30-11:00	NETWORK BREAK
11:00-12:00	KEYNOTE SPEECHES Chair: Prof. Dr. Hikmet Karakoc (Room: First Building Council Hall)
11:00-11:30	Prof. Dr. Jozsef Rohacs – Budapest University of Technology and Economics TBD “THEORETICAL AND PRACTICAL ASPECTS OF DEVELOPING THE ELECTRIC /HYBRID AIRCRAFT”
11:30-12:00	Prof. Dr. Birol Kilkis – Baskent University “HOW RATIONAL THE SUSTAINABLE AVIATION MAY BE?”
12:00-14:00	MID-DAY NETWORK BREAK
14:00-15:00	KEYNOTE SPEECHES Chair: Prof. Dr. Roy Hartfield (Room: First Building Council Hall)
14:00-14:30	Carlos Javier Munoz Garcia – European Aviation Safety Agency “CERTIFICATION OF PROPULSION LITHIUM BATTERIES”
14:30-15:00	Tevfik İnal – General Electric “HYBRID ELECTRIC PROPULSION”
15:00-15:30	NETWORK BREAK
15:30-16:30	Technical Session 1 Chair: Prof. Dr. Jozsef Rohacs (Room: First Building Council Hall)
	<u>Viral Rathod</u> “DESIGN OF A 4-SEAT GENERAL AVIATION ELECTRIC AIRCRAFT”
	<u>Utku Kale</u> , Istvan Jankovics, Jozsef Rohacs, Daniel Rohacs “RADICALLY NEW SOLUTIONS REDUCING THE REQUIRED CAPACITY OF MISSION ENERGY BATTERY MASS OF ELECTRIC AIRCRAFT”
	<u>Birol Kilkis</u> , San Kilkis “AN ELECTRIC AIRCRAFT BUT NOT EXACTLY”
	Agnes Wangai, <u>Utku Kale</u> , Jozsef Rohacs “ESTIMATING THE REDUCTION OF ENVIRONMENTAL IMPACT IN AIRPORT AREAS THROUGH INTRODUCTION OF NEW SMALL ELECTRIC / HYBRID AIRCRAFT INTO OPERATION”

October 10, 2018 Wednesday (Day 1)	
16:30-18:00	Technical Session 2 Chair: Prof. Dr. Birol Kilkis (Room: First Building Council Hall)
	<u>Irem Turk</u> , Isil Yazar, Tahir Hikmet Karakoc “SOLAR ENERGY APPLICATIONS IN AVIATION: A GENERAL REVIEW”
	<u>M. Ziya Söğüt</u> , Süleyman Ozkaynak, Mehmet Akman “TECHNOLOGY OPPORTUNITIES AND MANAGEMENT OF UNMANNED AERIAL VEHICLES IN MARITIME OPERATIONS”
	<u>Isil Yazar</u> “BATTERY MODELS FOR ALL ELECTRIC AND HYBRID ELECTRIC PROPULSION SYSTEMS IN AVIATION: A LITERATURE SURVEY”
	<u>Emre Özbek</u> , M. Baris Özerdem, Yasin Şöhret, Tahir Hikmet Karakoc “METRICS OF AIRFOIL DETERMINATION FOR BIO INSPIRED MINI UAV’S”
	Ruxandra Mihaela Botez, Maxime Kuitche “FLIGHT DYNAMICS SIMULATOR DESIGN STUDIES FOR UNMANNED AERIAL SYSTEMS”
	<u>Tetiana Shmelova</u> , Arnold Sterenharz, Yuliya Sikirda “AUTOMATED SYSTEM FOR MONITORING AND DIAGNOSTICS PILOT’S EMOTIONAL STATE IN FLIGHT”
	<u>Hyung Uk Jee</u> “IMPROVING TROUBLESHOOTING METHODS OF AIRCRAFT ELECTRICAL FAULTS PROCESS”

October 11, 2018 Thursday (Day 2)	
08:30-09:00	REGISTRATION
09:00-12:00	PLENARY SESSION (Room: First Building Council Hall)
09:00-10:00	OPENING SPEECHES (Room: First Building Council Hall)
10:00-12:00	KEYNOTE SPEECHES Chair: Prof. Dr. Oleksandr Zaporozhets (Room: First Building Council Hall)
	Roy Hartfield – Auburn University “AERO-PROPULSIVE FLIGHT MECHANICS FOR TWENTY FIRST CENTURY AIRCRAFT DESIGN”
	Oleksandr Los’ – Antonov Aircraft “SAFETY IN AVIATION ACHIEVEMENTS AND EXPERINCE OF ANTONOV DESIGN BUREAU”
12:00-14:00	MID-DAY NETWORK BREAK* (Location: Museum of Aviation)
14:00-19:00	Technical Visit to the Museum of Aviation

*Transportation from National Aviation University (NAU) to the Museum of Aviation will be provided at the end of Congress Plenary Sessions.

October 12, 2018 Friday (Day 3)

09:00-10:00 Technical Session 3 Chair: Prof. Dr. Roy Hartfield (Room: Fifth Building 611)

Mariia Lutsenko, Mykola Pastukhov, Tetiana Kuznetsova, Dmytro Prokopovych-Tkachenko, Fedir Kurinniy
“NIST PQC: CODE-BASED CRYPTOSYSTEMS”

Emrah Yigit, Isil Yazar, T. Hikmet Karakoc
“FIXED PITCH PROPELLER COMBINED DC MOTOR STEADY-STATE MODEL FOR MICROCLASS UAVS NEW GENERATION PROPULSION SYSTEMS”

Alexandr Kuznetsov, Anastasia Kiyan, Yuriy Tarasenko, Evgeniy Malenko, Olexandr Polins'ky
“NEW CODE-BASED PSEUDORANDOM GENERATOR”

S. Kağan Ayaz, Önder Altuntaş
“MODELLING OF AMMONIA COMBUSTION IN A MICRO GAS TURBINE WITH GT-SUITE”

M. Ziya Söğüt, Enver Yalcın, Tahir Hikmet Karakoc
“A FRAMEWORK APPROACH OF ELECTRIC PROPULSION TECHNOLOGIES FOR FUTURE PERSPECTIVE”

10:00-10:30 NETWORK BREAK

10:30-12:00 Technical Session 4 Chair: Prof. Dr. Sergii Boichenko (Room: Fifth Building 611)

Alexandr Kuznetsov, Roman Serhiienko, Anna Uvarova, Valeriy Smirnov
“METHODS OF FORMING CRYPTOGRAPHIC KEYS FROM BIOMETRIC IMAGES USING FUZZY EXTRACTORS”

Mehmet Ziya Söğüt, Enver Yalcın, Barış Ozerdem, Tahir Hikmet Karakoc
“ASSESSMENT OF THE EFFICIENCY INDEXES OF ENERGY IN AIR TRANSPORT”

Murat Ayar, Orhan Aras, Kürşad Melih Güleren, T. Hikmet Karakoc
“ENGINE SELECTION PROCESS WITH AHP ON MINI ELECTRIC UAV”

Büşra Boğa, Emre Özbek, Hikmet Karakoc
“A PEM FUEL CELL AND CONVENTIONAL BATTERY ASSESSMENT IN THE SCOPE OF UAV DESIGN”

Halil Yalcin Akdeniz, Onder Altuntas, Ziya Sogut, Hikmet Karakoc
“ADVANTAGES AND DISADVANTAGES OF HYBRID ELECTRIC PROPULSION SYSTEMS AND CONVENTIONAL PROPULSION SYSTEMS WITH COMPARATIVE ANALYSIS”

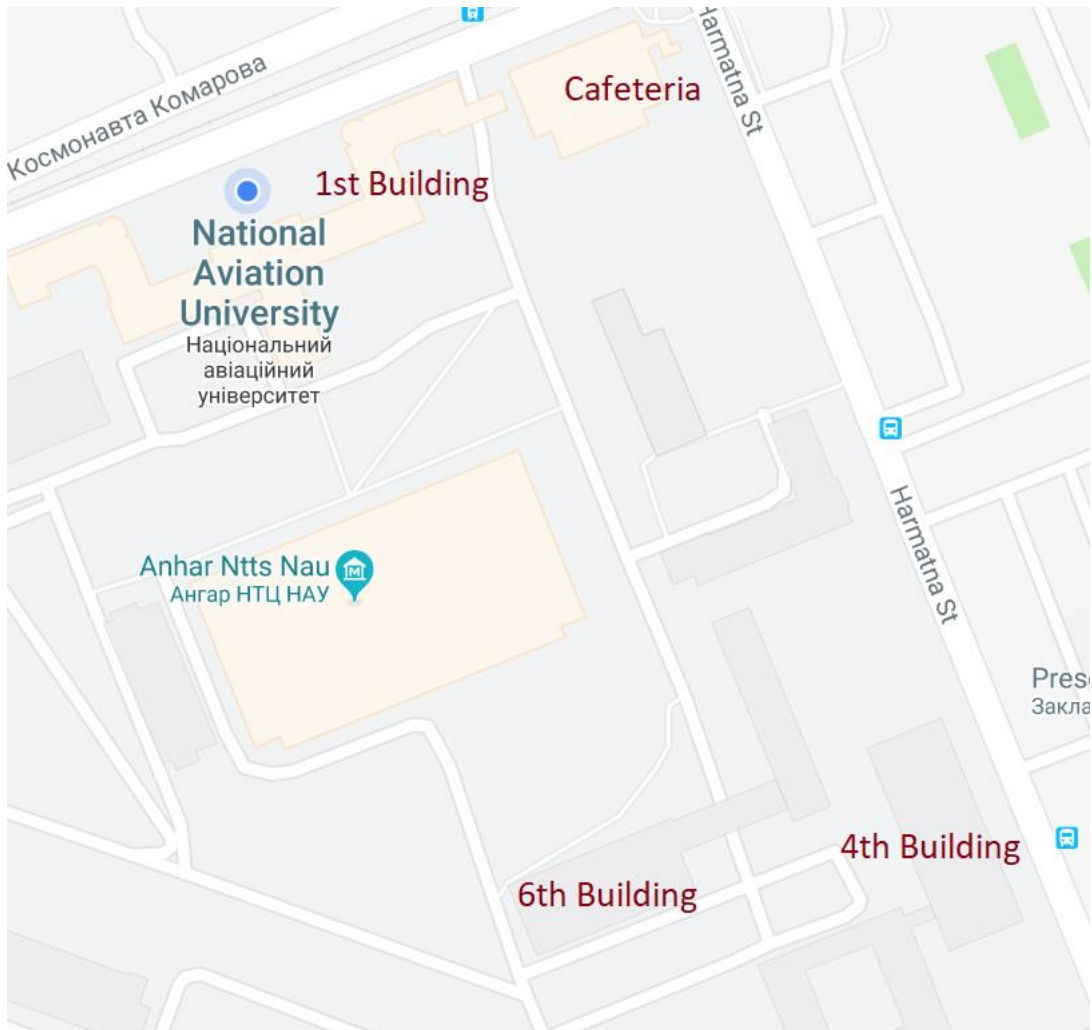
Emrah Yigit, Isil Yazar, Hikmet Karakoc
“UNLOADED BATTERY-MOTOR MODELING FOR MICRO/MINI-CLASS UAVS USING AN ELECTRIC PROPULSION SYSTEM”

Burak Tarhan, Kadir Kemal Apaydın, Emre Özbek, Hikmet Karakoc
“THE COMPARISON OF LI-ION AND LIFEPO4 BATTERIES FOR ALL ELECTRIC AIRCRAFT CONCEPT”

12:00-14:00 MID-DAY NETWORK BREAK

14:00-15:00	Technical Session 5 Chair: Assoc. Prof. Dr. C. Ozgur Colpan (Room: Fifth Building 611) <u>Görkem Yalin</u> , Vehbi Emrah Atasoy, Emre Ozbek, Cem Cetek, C. Ozgur Colpan, T. Hikmet Karakoc “FLIGHT PERFORMANCE ESTIMATION OF FUEL CELL POWERED UAV” <u>Emre Özbek</u> , Yasin Şöhret, Hikmet Karakoc “BIO-INSPIRED UAV DESIGN PARAMETERS AND EFFECTS OF FLIGHT PERFORMANCE” <u>Burak Tarhan</u> , Emre Özbek, Hikmet Karakoc “A PORTABLE GROUND CONTROL STATION DESIGN FOR UAV FIELD OPERATIONS” <u>Oleksandr Zaporozhets</u> , Volodymyr Isaienko “TRENDS OF POSSIBLE AIRCRAFT HYBRID ARCHITECTURES AND THEIR IMPACT ON ENVIRONMENT” <u>Muhammet Yunus Turan</u> “UNMANNED AIRCRAFT VEHICLE WITH PARABOLIC WING”
15:00-15:30	NETWORK BREAK
15:30-16:30	Technical Session 6 Chair: Assoc. Prof. Dr. Kateryna Kazhan (Room: Fifth Building 611) Murat Ayar, <u>Orhan Aras</u> , Kürşad Melih Güleren, Tahir Hikmet Karakoc “COMPONENT PRIORITIZATION OF MINI ELECTRIC UAV ON PRELIMINARY DESIGN STAGE” <u>Zeynep Tek</u> , Burak Tarhan, Emre Özbek, Hikmet Karakoc “MANUFACTURE PLANNING AND THE APPLICATION OF SPECIFIC TOOLS ON MINI UAV WING MANUFACTURE” Kahraman Coban, <u>C. Ozgur Colpan</u> , T. Hikmet Karakoc “ENVIRONMENTAL ASSESSMENT OF A SMALL TURBOJET USING BIOFUEL” <u>Elif Yildirim</u> , Hasan Yamik, T. Hikmet Karakoc “HYBRID ELECTRIC POWERED SYSTEM FOR THE ROBINSON R22 HELICOPTER” <u>Heiko Engemann</u> , Patrick Wiesen, Kallweit Stephan, Nicolas Limpert, Josef Franko “AUTONOMOUS MOBILE ROBOTS DEVELOPED BY TEAM MASCOR FOR MBZIRC 2017”
16:30-18:00	Technical Visit to UAV and Chemmotology Laboratories of National Aviation University

NAU CAMPUS MAP AND SYMPOSIUM VENUE



Entrance to 6th building is provided from 4th building via a connection between buildings.

DIRECTIONS FROM NAU TO MUSEUM OF AVIATION

