

18th International Conference on Aerospace Sciences & Aviation Technology 2019

IOP Conference Series: Materials Science and Engineering
Volume 610

Cairo, Egypt
9 – 11 April 2019

Part 1 of 2

ISBN: 978-1-5108-9818-9
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence. Licence details:
<http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2019)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

PART 1

SS-01: CHEMICAL APPLICATIONS (I)

BURNING RATE OF POLYURETHANE COMPOSITE PROPELLANT WITH ENERGETIC NANO-COMPOSITE ADDITIVES	1
<i>Sayed Tawfik, Ahmed Saleh, Ahmed Elbeih</i>	
PERFORMANCE OF ADVANCED COMPOSITE SOLID ROCKET PROPELLANTS BASED ON NOVEL OXIDIZERS.....	9
<i>Mohamed Abd-Elghany, Ahmed Elbeih, Thomas M. Klapötke, Mahmoud Abdelhafiz</i>	
OPTIMIZATION OF LOW SIGNATURE BASE BLEED PROPELLANT FORMULATIONS.....	16
<i>Ehab M Youssef, Tamer Elshenawy, Hosam E Mostafa, Mostafa Radwan, Ahmed Elbeih</i>	
PERFORMANCE CHARACTERISTICS OF MODIFIED HMX-GUN PROPELLANTS	26
<i>Ahmed Elbeih, Tamer Z. Wafy, Tamer Elshenawy, Ahmed K. Hussein, Mohamed Abd-Elghany, Sara M. Hammad, Mohamed Yehia</i>	

SS-02: MATERIAL SCIENCE

FACTORS AFFECTING IRRADIATION OF NANO & MICRO MATERIALS BY LASER TREATMENT INDUSTRIAL UNIT	32
<i>Hebatalrahman Ahmed</i>	
PROCESS PARAMETERS OPTIMIZATION FOR PRODUCING AA6061/(AL₂O₃, GR AND AL₂O₃+GR) SURFACE COMPOSITES BY FRICTION STIR PROCESSING	43
<i>B R EL-Eraki, A R EL-Sissi, S M Khafagi, H S Nada</i>	
IMPACT AND BENDING ANALYSIS OF COMPOSITE SCARF ADHESIVE JOINTS MODIFIED WITH MWCNTS AT ROOM AND HOT TEMPERATURES	56
<i>U A Khashaba, Ramzi Othman, I M R Najjar</i>	
EXPERIMENTAL VERIFICATION OF THE PARAMETERS AFFECTING THE CHARACTERISTICS OF MECHANICAL AND CORROSION BEHAVIOUR OF CONVENTIONAL AND HIGH-SPEED REMOTE SCANNER LASER WELDING OF STAINLESS-STEEL JOINTS.....	77
<i>Ahmed. M. El-Aziz, Mahmoud Abou El Khier, Horest Exner</i>	
ATOMISTIC SIMULATIONS OF HYDROGEN AND CARBON SEGREGATION IN α-IRON GRAIN BOUNDARIES	90
<i>Mohamed H Hamza, Mohamed A Hendy, Tarek M. Hatem</i>	

SS-03: POWER MANAGEMENT

MULTI-SENSORY DATA FUSION FOR HIGH PERFORMANCE ATTITUDE ESTIMATION	96
<i>Mohamed E Hanafi, Mohammed A H Abozied, Yehia Z Elhalwagy, Ahmed Omar Elfarouk</i>	
FUZZY ESTIMATION OF THE MEAN FOR ELECTRIC LOAD CONSUMPTION BASED ON DIFFERENT ALGORITHMS	107
<i>Khaled Abu-Bakr Nigm, Ahmed K Elsherif, Ahmed Salah Ismail</i>	
SATELLITE BATTERY SENSOR VALUES PREDICTION USING BAYESIAN RIDGE REGRESSION MODELS.....	117
<i>Mohamed A Galal, Wessam M Hussein, Ezz El-din Abdelkawy</i>	
HARMONIC MITIGATION FOR POWER RECTIFIER USING PASSIVE FILTER COMBINATION	123
<i>O A Monem</i>	

SS-04: GUIDANCE, NAVIGATION & CONTROL (I)

MULTIVARIABLE FLIGHT CONTROLLER DESIGN FOR ULTRASTICK-25E UAV	132
<i>Mahmoud M. Ashry</i>	

GROUND TARGET LOCALIZATION AND RECOGNITION VIA DESCRIPTORS FUSION	150
<i>Mohamed M Kamel, Hussein S Taha, Gouda I Salama, Yehia Z Elhalwagy</i>	
MODELING OF FIXED WING UAV AND DESIGN OF MULTIVARIABLE FLIGHT CONTROLLER USING PID TUNED BY LOCAL OPTIMAL CONTROL	161
<i>Eslam Nabil Mobarez, Amr Sarhan, Ashry Mahmoud Mohamed</i>	
DESIGN OF A ROLL AUTOPILOT FOR A SKID-TO-TURN GUIDED MISSILE	180
<i>K M Ali, M Abozied, I Arafa, Y Elhalwagy</i>	

SS-05: MATERIALS & STRUCTURES (I)

DEPOLARIZATION DIAGNOSIS OF PWAS USED FOR EMI BASED STRUCTURAL HEALTH MONITORING SYSTEM FOR COMPOSITE PLATES.....	195
<i>Mostafa S Amin, Mohamed A M Salem</i>	
REVIEW OF CHALLENGES OF THE DESIGN OF ROCKET MOTOR CASE STRUCTURES.....	206
<i>I Hossam, Sh Saleh, H Kamel</i>	
FACTORS AFFECTING STRESS DISTRIBUTION IN WIND TURBINE BLADE	219
<i>Diaaeldin M Elsherif, Ayman A Abd El-Wahab, Mohamed Hazem Abdellatif</i>	
MECHANICAL AND CORROSION BEHAVIOUR OF CONVENTIONAL AND HIGH-SPEED REMOTE SCANNER LASER WELDING FOR DUPLEX STAINLESS STEEL: A COMPARATIVE STUDY	239
<i>Mahmoud Abu El Khier, Ahmed M El-Aziz, Horest Exner</i>	

SS-06: EMERGING TECHNOLOGIES

ASSESSMENT OF AA7075/SIO₂ SURFACE COMPOSITES FABRICATED BY FRICTION STIR PROCESSING (FSP).....	254
<i>M. H. Abd El-Aziz, A.B. El-Shabasy, M. M. Z. Ahmed, H. A. Hassan</i>	
HYPERSPECTRAL IMAGING AND ANALYSIS OF SWIRLING FLAMES ISSUED FROM TWO AND FOUR SLOTS CIRCUMFERENTIAL BURNERS.....	262
<i>A. A. Saad, A. M. Abdalnaim, M. M. Ibrahim, A. A. Emara, H. A. Moneib, H. S. Ayoub, Ashraf F. El-Sherif</i>	
ESTIMATING UNCERTAINTIES FOR THE DRIVING TORQUE IN CONTINUOUS FLIGHT AUGUR MACHINE DURING SPACE SAMPLING DRILLING OPERATION.....	279
<i>Mohamed A A Abdeldayem, Mohamed H Mabrouk, Mootaz Abo_Elnor</i>	

SS-07: REMOTE SENSING (I)

ULTRA-WIDE BAND MICROSTRIP ANTENNA FOR 4G APPLICATIONS	287
<i>Mohamed Fathy Abo sree, Muhammad Aly Ibrahim, W. Swelam, Mohamed H. Abd El-Azeem, Hadia El Hennawy</i>	
DETECTION OF TARGETS WITH SMALL APPARENT DOPPLER FREQUENCIES IN LFM CW RADARS	296
<i>Fathy M Ahmed</i>	
AUTOMATED VEHICLE DETECTION IN SATELLITE IMAGES USING DEEP LEARNING.....	304
<i>Ahmad Mansour, Ahmed Hassan, Wessam M Hussein, Ehab Said</i>	
LFM-PC RADAR EVALUATION IN PRESENCE OF JAMMING USING SYSTEMVUE.....	312
<i>Mohamed Samir Abdel Latif Soliman, A. Mansour</i>	
DESIGN AND IMPLEMENTATION PATCH ANTENNA WITH DIFFERENT FRACTAL SHAPE	318
<i>A. M. M. A. Allam, Mohamed Fathy Abo Sree, Muhammad Aly Ibrahim</i>	

SS-08: COMMUNICATIONS (I)

A GENERIC ANALYTICAL FORMULA FOR RANGE SIDE-LOBES CANCELLATION FILTERS IN PULSE COMPRESSION PHASE CODED WAVEFORMS	326
<i>Ibrahim M Metwally, Abd El Rahman H Elbardawiny, Fathy M Ahmed, Hazem Z Fahim</i>	
PERFORMANCE OF LTE DOWNLINK COMMUNICATION SYSTEM IN PRESENCE OF ELECTRONIC WARFARE SPOT JAMMING	338
<i>Gamal H. Shabana, Ehab M. Shaheen</i>	
SOFT SECTORED FRACTIONAL FREQUENCY REUSE IN LTE-ADVANCED NETWORKS.....	348
<i>Eman AbdelNaby, Ihab A. Ali, Ahmed M. Abd El – Haleem, Hesham F. A. Hamed</i>	

SS-09: GUIDANCE, NAVIGATION & CONTROL (II)

SIMULATION AND MODELLING OF FLIGHT MISSILE DYNAMICS AND AUTOPILOT ANALYSIS	358
<i>Mohamed M Kamel, Karim M Ali, Mohammed A H Abozied, Yehia Z Elhalwagy</i>	
IMPLEMENTATION AND VALIDATION OF AUTOPILOT DESIGN FOR VERTICAL MISSILE SYSTEMS	369
<i>K M Ali, M Abozied, I Arafat, Y Elhalwagy</i>	
DESIGN AND VALIDATION OF A SLIDING MODE DISTURBANCE OBSERVER-BASED CONTROL FOR A CUBESAT NANO-SATELLITE.....	381
<i>Amr M. Hassan, Ayman A. ElBadawy</i>	

SS-10: CHEMICAL APPLICATIONS (II)

PERFORMANCE, MECHANICAL AND THERMAL PROPERTIES OF DOUBLE BASE ROCKET PROPELLANT INCLUDING COPPER OXIDE AS BURNING RATE MODIFIER	393
<i>Nour Abdel-Ghani, Ahmed Elbeih, Farag Helal, Sara M. Hammad</i>	
COMPOSITE SOLID ROCKET PROPELLANT BASED ON GAP POLYURETHANE MATRIX WITH DIFFERENT PLASTICIZERS	399
<i>Islam K. Boshra, Ahmed Elbeih, Hosam E. Mostafa</i>	
INVOLVING PETN EXPLOSIVE INTO POLYURETHANE POLYMER MATRIX FOR REACTIVE ARMOUR APPLICATIONS	406
<i>Mohamed Elnogomy, Tamer Elshenawy, Ahmed Elbeih, Mostafa Radwan, Mohamed Yehia, Ahmad Baraka, Mohamed A. Elsayed, Mohamed Gobara</i>	
CHARACTERISTICS OF A PASTE EXPLOSIVE (EPX-P20) USED IN EXPLOSIVE BOLTS FOR SPACECRAFT'S APPLICATIONS	412
<i>Ahmed Elbeih, Mahmoud Abdelhafiz, Ahmed K. Hussein, Tamer Z. Wafy, Tamer Elshenawy, Ahmad Baraka, Mohamed A. Elsayed, Mohamed Gobara</i>	

SS-11: PROPULSION & POWER (I)

ANALYTICAL AND NUMERICAL STUDIES OF MASS FLUX DISPERSED FROM TAPERED SWIRL ATOMIZER WITH VARIOUS NOZZLE CUT PROFILES	419
<i>Hatem Kayed</i>	
PARAMETRIC STUDY FOR REDUCING EMISSION CHARACTERISTICS USING DIFFERENT COMPUTATIONAL SCHEMES.....	428
<i>Hatem Kayed</i>	
THERMAL AND COMBUSTION CHARACTERISTICS OF A DOUBLE RING BURNER WITH DIFFERENT SWIRLING FLOW PATTERNS	445
<i>H E Saad, M Kamal, A Adel</i>	
SIMULATOR DESIGN FOR LOW PRESSURE PLASMA DISCHARGES IN PLANAR GEOMETRY	458
<i>S Radwan, H Saleh, M Bourham</i>	
STUDY OF COLD SPRAY AND COMBUSTION STABILITY OF EFFERVESCENT ATOMIZER	464
<i>Safwat A. Wilson, Gaber M. Asar, Eslam M. Elshahawy</i>	

SS-12: REMOTE SENSING (II)

FEATURE EXTRACTION FROM HIGH RESOLUTION SATELLITE IMAGES USING K-MEANS AND COLOUR THRESHOLD APPROACH	479
<i>Ahmed S ELsharkawy, Mahmoud Abdalla</i>	

PART 2

AUTOMATED UNSUPERVISED CHANGE DETECTION TECHNIQUE FROM RGB COLOR IMAGE	491
<i>M Gomaa, E Hamza, H Elhifnawy</i>	

A ROAD MAP TO THE DETECTION PERFORMANCE OF LFM-PC SEARCH RADARS WITH CFAR DETECTORS.....	500
<i>Mohamed Samir Abdel Latif Soliman</i>	
DETECTION IMPROVEMENT OF OFF-PIN TARGETS IN FMCW RADARS	516
<i>Mohamed G Shehata, Fathy M Ahmed, Sameh Ghanim, Hazem Zakaria</i>	

SS-13: HYDRAULICS & FLUID POWER

CONDITION-BASED MONITORING OF A SMALL CENTRIFUGAL PUMP BY VIBRATION ANALYSIS	526
<i>M Abd-Elaal, M Lotfy, T Nabil, A Eldomiaty</i>	
VIBRATION CAUSED BY SWING CHECK VALVE CLOSURE	539
<i>Aly M El-Zahaby, Mohamed Y Zakaria, Yasser A F El-Samadony, Ibrahim A Ismail</i>	
BLACK-BOX MODELLING OF GAS TURBINE ENGINE'S ELECTROHYDRAULIC FUEL METERING SYSTEM.....	556
<i>M A Fadel, M A Metwally, W M Elmayyah, I A Elsherif</i>	
INFLUENCE OF EXIT CONFIGURATION ON THE FLOW FIELDS AND OSCILLATION CHARACTERISTICS INSIDE AND OUTSIDE THE FLUIDIC OSCILLATOR	568
<i>Ahmed M Abdalnaim, Ahmed A Emara, Hany A Moneib</i>	

SS-14: AUTOMATIC CONTROL SYSTEMS

MODELING AND CONTROL OF UNSTABLE MECHANICAL SYSTEMS USING CONTROL MOMENT GYRO (CMG).....	585
<i>A A El-Aal, M Roustom, M M Hegaze, M Ibrahim</i>	
CONTROLLER PARAMETER TUNING USING ACTOR-CRITIC ALGORITHM.....	596
<i>Ayman Elshabrawy M Ahmed</i>	
INTELLIGENT FEEDBACK STABILIZATION OF MIMO SYSTEMS BASED ON ADDITIVELY DECOMPOSABLE PROPERTY	604
<i>Mohamed M. Elkhatab</i>	
CONTROL OF MASTER SLAVE ROBOTICS SYSTEM USING OPTIMAL CONTROL SCHEMES.....	616
<i>Sara A Rashad, Mohamed Sallam, A M Bassiuny, A M Abdel Ghany</i>	

SS-15: UNMANNED SYSTEMS

PID VS. BACKSTEPPING CONTROL FOR COOPERATIVE QUADROTORS UNMANNED AERIAL VEHICLES	628
<i>M. Mahfouz, A. Taïmour, Mahmoud M. Ashry, G. Elnashar</i>	
RELIABILITY PREDICTION OF ON-BOARD SUBSYSTEM SATELLITE BY MONTE CARLO METHODOLOGY	651
<i>Said H. Zoalfakar, Rehab E. El Badawi</i>	
AGILE MISSION OPTIMIZATION FOR A CONSTELLATION OF EARTH OBSERVATION SATELLITES	662
<i>A M Abbas, K T Meselhy, W S Moughith, A A Omer</i>	
NOVEL FUNCTIONALIZATION TREATMENT OF MWCNTS FOR UNMANNED AERIAL VEHICLE STRUCTURE	673
<i>Alaa Alawy, Mohamed Abdlghany, Tamer Wafy, Ahmed Hassan</i>	

SS-16: CHEMICAL APPLICATIONS (III)

THEORETICAL AND EXPERIMENTAL STUDY OF UNDERWATER EXPLOSION PERFORMANCE OF SELECTED EXPLOSIVE COMPOSITIONS	685
<i>Ahmed Hawass, Ahmed Elbeih, Hosam E. Mostafa</i>	
THERMAL BEHAVIOUR OF MWCNT/AMMONIUM PERCHLORATE PARTICLES	697
<i>M Yehia, Hosam E Mostafa, Tamer Z Wafy, Mahmoud Abdelhafiz</i>	
CRYSTAL STRUCTURE AND OPTICAL PROPERTIES OF 1D-BI BASED ORGANIC-INORGANIC HYBRID PEROVSKITE.....	706
<i>Mohamed F. Kandeel, Seham K. Abdel-Aal, Ashraf F. El-Sherif, H. S. Ayoub, Ahmed S. Abdel-Rahman</i>	

MECHANICAL BEHAVIOUR OF RUBBER HYBRID COMPOSITES.....	719
<i>Bassant Hany Mousa, Ramadan El gamsy, Mohamed Hazem Abdel Latif</i>	

SS-17: COMMUNICATIONS (II)

DESIGN AND IMPLEMENTATION OF NEW SECURITY ARCHITECTURE FOR WIRELESS NETWORK.....	727
<i>Mohammed M. Mahaba, Mohammed H. Megahed, Atef Ghalwash, Mohammed Abu Rezka</i>	
ENHANCED GRAYSCALE IMAGE TRANSMISSION OVER HF CHANNEL.....	741
<i>Ahmed S. Mashaly, Tamer Mekkawy</i>	
LOW-COST STEERABLE ANTENNA FOR SATELLITE APPLICATIONS	750
<i>M. Wady, W. Swelam, Mohamed H. Adel Azeem</i>	
DESIGN AND IMPLEMENTATION OF LTE WIDE BAND COUPLER.....	756
<i>A. M. M. A. Allam, Mohamed Fathy Abo Sree, Muhammad Aly Ibrahim</i>	

SS-18: PROPULSION & POWER (II)

TESTING AND EVALUATION PROGRAM OF LAB. SCALE HYBRID PROPULSION SYSTEM.....	762
<i>Ah. EL-S Makled</i>	
FIRING TEST AND EVALUATION OF COAXIAL PULSED PLASMA THRUSTER	777
<i>M A Othman, Aly M Elzahaby, Ah El-S Makled, M Khalil</i>	
NUMERICAL PERFORMANCE INVESTIGATION OF A THRUST-OPTIMIZED NOZZLE AT DIFFERENT ALTITUDES	791
<i>M. G. AbuElkhier, S. Shaaban, Mahmoud Y. M. Ahmed</i>	

SS-19: GUIDANCE, NAVIGATION & CONTROL (III)

WI-FI BASED INDOOR LOCALIZATION USING TRILATERATION AND FINGERPRINTING METHODS.....	800
<i>Abd Elgwad M. El Ashry, Bassem I. Sheta</i>	
MOTION CONTROL OF AN AIRCRAFT ELECTRO-HYDRAULIC SERVO ACTUATOR.....	820
<i>M Z Fadel, M G Rabie, A M Youssef</i>	
MOBILE ROBOT POSITION ESTIMATION USING EULER-MARUYAMA ALGORITHM	831
<i>Mohamed G Abd Elfatah, Hany Nasry Zaky, M Gharib</i>	

SS-20: MATERIALS & STRUCTURE (II)

STRUCTURAL BEHAVIOUR OF INFLATABLE PVC FABRIC CYLINDRICAL TUBES.....	839
<i>Sherif Okda, Wael Akl, Adel Elsabbagh</i>	
A FINITE ELEMENT SOLUTION OF BERGAN-WANG PLATE MODEL	848
<i>Kamal Hassan, Ehab Ali, Mohammad Tawfik</i>	
DESIGN OPTIMIZATION FOR A THREE-LAYERS SHRINK-FITTED PRESSURE VESSEL EXPOSED TO VERY HIGH PRESSURE	862
<i>Ossama R. Abdelsalam</i>	

SS-21: MODELLING & SIMULATION

AIRCRAFT PROTECTION FOR COMPLEX THREAT PLATFORMS THROUGH INTEGRATED EWOS APPLICATION	876
<i>R Rudd-Orthner, L S Mihaylova</i>	
WASTE REDUCTION BY LINEAR PROGRAMING OPTIMIZING	886
<i>Sameh A Salah Eldein, Nahed Sobhi</i>	
MODELLING AND SIMULATION OF 3DOF PARALLEL MANIPULATOR USING ARTIFICIAL NEURAL NETWORK	900
<i>Abdelrahman Youssef, Amgad M Bayoumy, Mostafa Rostom, Farid A Tolbah</i>	
NUMERICAL SIMULATION OF THE STOCHASTIC BURGERS' EQUATION USING MLMC AND CBC ALGORITHM.....	910
<i>Shady A Nagy, Mohamed A El-Beltagy</i>	

A PROPOSED INDEX TO ASSESS COMMONALITY AMONG AIRCRAFT PRODUCT FAMILIES	918
<i>Eman A. Heikal, Amin K. El-Kharbotly, Mohammed M. El-Beheiry</i>	

SS-22: COMMUNICATIONS (III)

ICI AND PAPR ENHANCEMENT IN MIMO-OFDM SYSTEM USING RNS CODING.....	930
<i>M I Youssef, A E Emam, M Abd Elghany</i>	
CHAOS MODULATION IN SEMICONDUCTOR LASER WITH OPTOELECTRONIC FEEDBACK	943
<i>Raghad I Ibrahim, Kais A M Al Naimie, Sameer Kh Yaseen</i>	
LTE WIDE BAND METAMATERIAL ANTENNA.....	949
<i>M.A.M.K. Ezzat, Prof.Dr.Eng. A.M. Allam, Dr. Eng. D.E. Fawzy</i>	
OUTDOOR RF SPECTRAL STUDY AVAILABLE FROM CELL-PHONE TOWERS IN SUB-URBAN AREAS FOR AMBIENT RF ENERGY HARVESTING.....	958
<i>Omar M AbdelGhany, Ayman G Sobih, Ayman M El-Tager</i>	

SS-23: PROPULSION & POWER (III)

SPRAY COMBUSTION CHARACTERISTICS OF EFFERVESCENT ATOMIZER INSIDE EXPERIMENTAL FURNACE	967
<i>Safwat A. Wilson, Gaber M. Asar, Eslam M. Elshahawy</i>	
VAPORIZATION-CONTROLLED SIMPLIFIED MODEL FOR LIQUID PROPELLANT ROCKET ENGINE COMBUSTION CHAMBER DESIGN	984
<i>H Belal, Ah El-S Makled, M A Al-Sanabawy</i>	
DESIGN OF HHO CELL AS ENERGY SOURCE FOR ELECTRIC VEHICLES.....	998
<i>Mahmoud M.A. Sayed, Marwa S. Shalaby, Wafa Rady, Wessam Hussien, Mohamed Magdy, K. El-Sabagh, A. Mohamed, A. Nour Eldin, F. Maher, M. Osama</i>	
INVESTIGATION THE EFFECTIVENESS OF USING HEAT PIPE ON THE TEMPERATURE UNIFORMITY DISTRIBUTION OVER THE SC EQUIPMENT PANEL.....	1006
<i>M Abdou, Aly M Elzahaby, M Khalil</i>	

SS-24: REMOTE SENSING (III)

IMPROVED PERTURB AND OBSERVE MAXIMUM PEAK POWER TRACKING FOR SOLAR SATELLITE SYSTEMS.....	1021
<i>Kareem Adel Mohamed, Mohamed Zakareya, Karim Hassan Youssef, Hatem Awad Khater</i>	
OPTIMIZED PLANAR TERAHERTZ YAGI-UDA ANTENNA USING HYBRID GSA-PSO OPTIMIZATION ALGORITHM.....	1032
<i>A Megahed, K R Mahmoud, A Shaker</i>	
ENHANCING THE PERFORMANCE OF CNN-BASED BLIND IMAGE STEGANALYSIS APPROACH USING MULTI-GPU TESLA P100.....	1037
<i>Eslam M Mustafa, Mohamed A Elshafey, Mohamed M Fouad</i>	
DESIGN, SIMULATION AND IMPLEMENTATION OF LOW COST MICROSTRIP ARRAY ANTENNA FOR KU-BAND SATELLITE SYSTEM	1047
<i>Mohamed H Hassouna, W. Swelam, Abdel Naser Fawzy Mohamed, Mohamed H. Abdel Azeem</i>	
DESIGN AND IMPLEMENTATION OF AN ADVANCED RADAR SIGNAL PROCESSOR WITH WAVEFORM GENERATOR AND BIST UNIT ON A SINGLE FPGA CHIP	1054
<i>Ahmed M. Abdel Razek, Fathy M. Ahmed, Hazem Kamel, Wael Mahfouz, K. H. Moustafa</i>	

SS-25: AERODYNAMICS & MECHANICS OF FLIGHT

UNSTEADY NUMERICAL ANALYSIS OF DRAG ON NON-WINGED HYPERSONIC VEHICLE DURING RE-ENTRY	1064
<i>Mohamed S Abdel-Gawad, Mostafa S Khalil, Mahmoud Y M Ahmed</i>	
PERFORMANCE ANALYSIS FOR AERIAL-TOWING SYSTEM	1075
<i>Mostafa Khalil</i>	

MODELING AND PREDICTION OF AERODYNAMIC CHARACTERISTICS OF FREE FALL ROTATING WING BASED ON EXPERIMENTS	1086
<i>Mohamed Y. Zakaria, Carlos R. dos Santos, Abdallah Dayhoun, Flávio D. Marques, Muhammad R. Hajj</i>	
SPECULATION OF LOCAL AERODYNAMIC LOADS ON HELICOPTER ROTOR BLADE IN FORWARD FLIGHT.....	1101
<i>Abdallah Dayhoun, Mohamed Y. Zakaria, A. M. Elshabka, O. E. Abdelhamid</i>	
FLIGHT DYNAMIC MODEL FOR LOW EARTH ORBIT SATELLITES.....	1110
<i>Hossam M. I. Alshamy, Ah. El-S. Makled, Y Elhalwagy, Hossam Hendy</i>	
Author Index	