



## Conference Program

### Conference - Day 1

Tuesday, 13<sup>th</sup> February 2024 (Grand Hall, SQU)

08:00 - 08:45	Registration	
08:45 - 08:50	Recitation of Holy Quran	
08:50 - 09:00	Welcome Address by the Dean	
09:00 - 09:10	Opening Remarks by the Conference General Chair	
09:10 - 10:00	Awards & Recognition Signing Cooperation Agreements	
10:00 - 10:30	Exhibition Opening & Drones Show	
10:30 - 11:00	Tea/Coffee Break	
11:00 - 11:45 (35 min + 10 min Q&A)	<p><b>Keynote Presentation (Al Faham Hall)</b>  <b>Title: Research on Perception, Guidance, Navigation and Control (PGNC) Autonomy for Unmanned Vehicles</b>            Prof. Nabil Aouf, Director of the Autonomy of Systems Centre (ASC),            Co-Director of the London Space Institute (LSI), City University of London</p>	
	<p><b>Parallel Session # 1</b>            (Al Faham Hall)            Chair: Dr. Said Al-Abri</p>	<p><b>Parallel Session # 2</b>            (Meeting Room M2)            Chair: Dr. Ahmed Al-Maashri</p>
11:45 - 12:05 (15 min + 05 min Q&A)	Improved Navigation System of Marine Unmanned Robot Based on Sensor Fusion by <i>M. Radmanesh and S. Darabi</i>	Faster Image Deblurring for Unmanned Aerial Vehicles by <i>V. Sinoglazov, K. Lesohorskyi and O. Chumachenko</i>
12:05 - 12:25 (15 min + 05 min Q&A)	Flight Dynamics and Control of UAS-S4 and S45 by <i>R. Botez</i>	SP-N and FN Hardware Implementation for Lightweight Algorithms in IoT Devices by <i>A. Abdelli, W.E. Youssef, L. Khriji and M. Mohsen</i>
12:25 - 12:45 (15 min + 05 min Q&A)	D2DTracker: A framework for enabling real-time trajectory prediction for agile drone-to-drone tracking via adaptive model selection by <i>M.A.M. Abdelkader, A.S. Al-Batati, I. Jarraya and A. Koubaa</i>	Challenging YOLO and Faster RCNN in Snowy Conditions: UAV Nordic vehicle dataset (NVD) as an example by <i>H. Mokayed, A. Nayeibiastaneh, L. Alkhaled, S. Sozos, O. Hagner and B. Backe</i>
12:45 - 13:05 (15 min + 05 min Q&A)	Software for UAS control and navigation support using the centered meteorological dataspace by <i>M. Ivanytskyi, Y. Znakovska and Y. Averyanova</i>	Using AI-enhanced UAVs to detect and size marine contaminations by <i>O. Eldirdiry, N. Nasiri, A. Al-Maashri, H. Bourdoucen, J. Ghommam, A. Saleem; G. Al-Rawas, A. Al-Kamzari and A.C. Ammari</i>
13:05 - 14:15	Lunch Break	



جامعة السلطان قابوس  
Sultan Qaboos University

2<sup>nd</sup> International Conference on Unmanned Vehicle Systems

المؤتمر الدولي الثاني لأنظمة المركبات غير المأهولة  
12-14 February 2024, Sultan Qaboos University  
١٤-١٢ فبراير ٢٠٢٤، جامعة السلطان قابوس



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2024

Parallel Session # 3 (Al Faham Hall) Chair: Dr. Jawhar Ghomam		Parallel Session # 4 (Meeting Room M2) Chair: Dr. Nasra Al-Maskari
<b>14:15 - 14:35</b> (15 min + 5 min Q&A)	Hierarchical Geometric Control Design for a Slung Load System by <i>M.A.A. Al Lawati and A. Lynch</i>	Cross-layer Bayesian Network for UAV Health Monitoring by <i>F. Ahmed and M. Jenihhin</i>
<b>14:35- 14:55</b> (15 min + 5 min Q&A)	The design of tracking trajectory system for an underactuated unmanned surface vehicle by using an adaptive neuro-fuzzy sliding mode control by <i>Soroush Vahid and Hossein Akbari</i>	Trustworthy device identifiers for unmanned aircraft and other mobile things by <i>R. Moskowitz, S. Card, A. Wiethuechter, S. Khan and A. Gurto</i>
<b>14:55 - 15:15</b> (15 min + 5 min Q&A)	Dynamic modeling and sliding mode control of an over-actuated quadrotor with variable hedral angle of propeller axes by <i>A.K. Gavani, A. Talaeizadeh, S. Heidarzadeh, A. Alasty and H. Nejat</i>	Unveiling the shadows: Leveraging current drone detection vulnerabilities to design and build a stealth drone by <i>A.K. Al-Ali, F.A. Ahmed, S.W.F. Rizvi and N.M. Qassmi</i>

Conference Banquet Tuesday, 13th February 2024	
<b>19:00 - 19:10</b>	Welcome Remarks
<b>19:10 - 20:30</b>	Gala Dinner

Conference - Day 2 Wednesday, 14th February 2024 (Grand Hall, SQU)	
<b>08:15 - 09:00</b> (35 min + 10 min Q&A)	<b>Keynote Presentation (Al Faham Hall)</b> <i>Title: Towards agile swarms of UAVs in the wild</i> Dr. Martin Saska Czech Technical University in Prague
<b>09:05 - 10:30</b>	<b>Panel Discussion (Grand Hall)</b> <b>Panelist:</b> H.E. Dr. Ali Shidhani, Undersecretary for Communications and Information Technology at Ministry of Transportation, Oman Government Prof. Nabil Aouf, City University of London, UK Dr. Abdelhakeem Al-Ismaili, CEO, Oman Horizon Prof. Davide Saramuzza, University of Zurich, Switzerland <b>Moderator:</b> Dr. Ahmed Al-Maashri, Sultan Qaboos University
<b>10:30 - 11:00</b>	<b>Tea/Coffee Break</b>



<p><b>Invited Talk (Al Faham Hall)</b> <b>Title: Deployment of Beyond Visual Line of Site Remotely Piloted Aircraft Systems in PDO</b> Eng. Ahmed Tabook, Geomatics Discipline Lead, PDO, Oman</p>		
<p><b>11:00 - 11:30</b> <b>(25 min + 05 min Q&amp;A)</b></p>		
<p><b>Parallel Session # 5</b> <b>(Al Faham Hall)</b> Chair: Dr. Ibrahim Al-Naimi</p>		<p><b>Parallel Session # 6</b> <b>(Meeting Room M2)</b> Chair: Dr. Hossein Askarian</p>
<p><b>11:40 – 12:00</b> <b>(15 min + 5 min Q&amp;A)</b></p>	<p>Long endurance and continuous flight UAVs -model-based design approach by <i>W. Skarka and K. Mateja</i></p>	<p>Application of digital documentation in vernacular architecture studies by <i>A. Al-Hashim and N.Benkari</i></p>
<p><b>12:00 – 12:20</b> <b>(15 min + 5 min Q&amp;A)</b></p>	<p>Solar powered UAV design: Leveraging minimal surfaces in additive manufacturing by <i>C.G. Gascón, P. Castelló-Pedrero and J.A.G. Manrique</i></p>	<p>A novel SCD11 CNN model performance evaluation with inception V3, VGG16 and ResNet50 using surface crack dataset by <i>R.W. Anwar, A. Hussain, K.N. Qureshi and A. Aslam</i></p>
<p><b>12:25– 12:45</b> <b>(15 min + 5 min Q&amp;A)</b></p>	<p>A mission-aware battery charging algorithm for unmanned aerial vehicles by <i>C. Huang, H. Cheng, K. Hu and Y.S. Lin</i></p>	<p>AUVs' distributed mission planning system for effective underwater chlorophyll sampling by <i>S. MahmoudZadeh, A. Yazdani, Y. Kalantari and B. Bekir</i></p>
<p><b>12:50 – 13:10</b> <b>(15 min + 5 min Q&amp;A)</b></p>	<p>Single-switch high step-down cuk-based PFC rectifier for lightweight electric vehicles battery charger by <i>M.H. Samandzadeh, M.H. Mohammadi, I. Askarian and H.A. Abyaneh</i></p>	<p>A state-of-the-art analysis of pesticide spraying on infected plants using IOE-Equipped UAV's operational state by <i>B. Ahamed, G. Tamarlasi, F. Kareem</i></p>
<p><b>13:15 – 14:30</b> <b>Lunch Break</b></p>		
<p><b>Parallel Session # 7</b> <b>(Al Faham Hall)</b> Chair: Dr. Hassan Al-Lawati</p>		<p><b>Parallel Session # 8</b> <b>(Meeting Room M2)</b> Chair: Dr. Lazhar Khrijj</p>
<p><b>14:30 – 14:50</b> <b>(15 min + 5 min Q&amp;A)</b></p>	<p>Formal verification and security assessment of the drone remote identification protocol by <i>S. Khan, G.S. Gaba, F. Boeira and A. Gurtov</i></p>	<p>Human acceptance of autonomous mobility: A literature review by <i>D.O. Hafiz</i></p>
<p><b>14:55 - 15:15</b> <b>(15 min + 5 min Q&amp;A)</b></p>	<p>Supporting metaverse applications with reconfigurable intelligent antennas (MARIA) by <i>E. Yaacoub</i></p>	<p>Artificial Intelligence: A supervised convolution neural network model for effective detection of weed and Non-weed images by using an autonomous robot in agricultural fields by <i>V. Bhaskar, M. Reddy, R. Kumpati and W. Skarka</i></p>
<p><b>15:20 - 15:35</b> <b>(15 min + 5 min Q&amp;A)</b></p>	<p>Shadow Rider Heavy Class UGV: Upgrading Armored Combat Vehicles with Autonomous Capabilities by <i>Eng. Serkan Balbay</i></p>	<p>Solar-Powered UAVs: A systematic Literature Review by <i>L.S. Aldhafari, O.K. Al Abri and A.A Khan</i></p>