



Tarek N. Dief
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Mechanical and Aerospace, COE
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Education	Thesis	University	Year
Ph.D., IGSES	Adaptive Flight-Path Control of Kite Power System.	Kyushu University, Japan	2014-2017
MSc., Aerospace	Design And Manufacturing of Quad-Rotor with Autopilot.	Cairo University, Egypt	2012-2014
BSc., Aerospace	System Dynamics and Control (Ranked: 2 nd).	Cairo University, Egypt	2007-2012

HONORS AND AWARDS

- Graduate Excellence Award, Kyushu University. [2017]
- Japanese Government Scholarship (MEXT), Kyushu University. [2014–2017]
- Provost's Graduate Fellowship, Cairo University. [2012–2014]
- Engineering Best Mechanical Engineering Project Award, Egyptian Engineering Day (EED). [2012]
- Engineering Best Graduation Project Award, Egyptian Engineering Syndicate (EES). [2012]
- Engineering Best Graduation Project Award, Cairo University. [2012]
- Engineering Excellence Award, Cairo University. [2012]
- Dean's Honor List, Cairo University. [2007–2012]

WORK EXPERIENCE

- **Assistant Professor of Mechanical and Aerospace | UAE University, Al Ain, UAE** [Aug. 2021 – Present]
 - Teaching and research in Space and Aerospace technology.
 - Supervising graduate and undergraduate students.
- **Postdoctoral Fellow | University of Alberta, Edmonton, Canada** [Aug. 2020 – Aug. 2021]
 - remote health monitoring and rehabilitation of patients with neurological conditions to minimize the risk of COVID-19 spread in Canadian hospitals
 - Collaborative project with PROTX company.
- **Airplane Development Engineer | PD Aerospace Space company (JAXA) LTD., Nagoya, Japan** [July 2019 – July 2020]
 - Design and develop algorithms required for airplane X06 control system.
 - Code software for control system of experiment of airplane X06.
 - Integrate, validate and test X06 software and electronic components.
 - Design, support and conduct X06 flight test.
 - Assist in space plane assembly.
 - Coordinate with suppliers for outsourced.
- **Postdoctoral Fellow | Kyushu University, Fukuoka, Japan** [Oct. 2017 – Jul. 2019]
 - Researcher assistant professor for Master students, control systems.
 - Managing a team of 6 MSc and PhD students to build and develop the 10-kW kite power project.
 - Design and built the control unit (KCU) for stabilizing the kite during flight.
 - Model and simulate model for variable-tether-length airborne system.
 - Build a measurement unit and wireless communication system to measure the kite's position and attitude then send these data to the ground station.

PROFESSIONAL MEMBERSHIPS AND AFFILIATIONS

- **Member:** IEEE (Institute of Electrical and Electronics Engineers).
- **Member:** AIAA (American Institute of Aeronautics and Astronautics).
- **Licensed Professional Engineer:** Egyptian Syndicate.

RESEARCH AND SCHOLARLY WORKS

Dr. Tarek is a leading expert in Airborne Wind Energy (AWE), with his pioneering research published in top-tier international journals and conference proceedings. His work addresses complex sustainability challenges in AWE through innovative approaches, including the application of system identification algorithms to assess uncertainties in wind speed and direction, the development of dynamic models for AWE systems, and the design, manufacturing, and testing of lightweight kite and fixed-wing systems. Notably, Dr. Tarek's research lab is recognized as a pioneering center for AWE research in the Middle East, marking the first substantial research effort in this area, particularly in the UAE.

In addition to his work in AWE, Dr. Tarek has made significant advancements in autonomous flight technologies for a range of drones, including quadrotors, octocopters, and UAVs. His research effectively bridges the gap between theory and practice, including a noteworthy collaboration with GAL AMMROC in the UAE to design UAVs using 3D printing technology, aimed at enhancing the local UAV industry and spurring further research and development.

Dr. Tarek's research influence is reflected in his ResearchGate metrics, with 16,400 reads and a score of 389.8, as well as his Google Scholar metrics, which include 286 citations, an h-index of 10, and an i10-index of 10. His Scopus index of 8 further underscores his significant impact in these specialized fields. Internationally recognized, he has been invited to disseminate his findings at scholarly and industrial events and has served as a visiting professor at McMaster University, Canada.

Dr. Tarek's research has attracted substantial internal and external grants, totaling approximately 3.33 million AED and 192,300 CAD, and he has been directly involved in eleven research projects. His collaborative efforts extend to institutions such as TU Delft in the Netherlands, McMaster University in Canada, and several others.

Dr. Tarek has presented his work at fourteen (14) international research conferences through oral and poster presentations, either as the corresponding author, presenter, or co-author. He has published eighteen (18) articles in international journals, with 88% of his journal articles appearing in Q1 Quartile Journals as classified by Scopus and SJR. Over the past five years, he has maintained a publication rate of two to three journal articles per year, increasing to three articles per year in the last two years. Ten of these publications were co-authored with undergraduate or graduate students from Cairo University, Kyushu University, and UAEU.

Dr. Tarek's research covers key areas such as system dynamics of drones and UAVs, satellite navigation and control, and advanced frame design and manufacturing using 3D printing technology. His work is distinguished by strong collaborative ties with national and international scholars, including those at Khalifa University in the UAE, Kyushu University in Japan, McMaster University in Canada, the University of Freiburg in Germany, and TU Delft in the Netherlands. Additionally, he has significant partnerships with UAEU faculty members and professionals from various sectors within the UAE's industry, enhancing the scope and impact of his research.

Currently, Dr. Tarek co-/supervises eleven (11) graduate students at UAE University, serving as the main advisor for three Ph.D. students and three M.Sc. students, as well as the co-advisor for one Ph.D. student and four M.Sc. students. Among these, one M.Sc. student graduated in Fall 2023, with three others expected to complete their degrees in AY 2024-2025, and two in AY 2025-2026. His commitment to education and research ensures that his work will continue to influence the field of aerospace engineering and AWE for years to come.

1 - JOURNAL PUBLICATIONS

Table 1: List of Journal Papers.

No.	Paper Description	Contribution	Affiliation	Quart.	Cite Score	IF
J1	Robust Twistor-Based Spacecraft Relative Pose Estimation Using Unscented Kalman Filter, <i>accepted Astrodynamics</i>	Co-author (co-supervised MSc student)	UAEU	Q1	6.9	2.75
J2	Elhesasy, M., Khader, R., Dief, T.N. , Kamra, M.M., Okasha, M. and Alnuaimi, S.K., 2024. Experimental Identification of the Translational Dynamics of a Novel Two-Layer Octocopter. Drones, 8(7), p.286.	Corresponding author	UAEU	Q1	5.6	5.4

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Table 1: (continued)

No.	Paper Description	Contribution	Affiliation	Quart.	Cite Score	IF
J3	Atallah, M., Okasha, M., Dief, T.N. and Jallad, A.H., 2023. Optimal consensus control for multi-satellite assembly in elliptic orbit with input saturation. Acta Astronautica, 208, pp.82-90.	Co-author (co-supervised MSc student)	UAEU	Q1	7.2	3.66
J4	Elhesasy, M., Dief, T.N. , Atallah, M., Okasha, M., Kamra, M.M., Yoshida, S. and Rushdi, M.A., 2023. Non-linear model predictive control using CasADi package for trajectory tracking of quadrotor. Energies, 16(5), p.2143.	Corresponding author	UAEU	Q1	6.2	3.5
J5	Haseeb, S.A., Ahmad, Z., Dief, T.N. , Alnuaimi, S.K., Sultan, T., Hayat, K., Younis, M.R. and Zoppi, M., 2023. Fixture layout optimization of sheet metals by integrating topology optimization into genetic algorithm. Applied Sciences, 13(7), p.4395.	Corresponding author (different area with my PhD student)	UAEU	Q1	5.3	2.92
J6	Atallah, M., Okasha, M., Dief, T.N. and Omar, F., 2022. Model Predictive Framework for Guidance and Control of a Multi-Satellite Assembly in Elliptic Orbit. International Review of Aerospace Engineering, 15(6), pp.308-320.	Co-author (co-supervised MSc student)	UAEU	Q1	3.8	1.966
J7	Abdollah, V., Dief, T.N. , Ralston, J., Ho, C. and Rouhani, H., 2021. Investigating the validity of a single tri-axial accelerometer mounted on the head for monitoring the activities of daily living and the timed-up and go test. Gait	Co-author (contribution percentage is provided)	University of Alberta	Q1	4.3	2.786
J8	Rushdi, M.A., Dief, T.N. , Yoshida, S. and Schmehl, R., 2020. Towing test data set of the Kyushu University kite system. Data, 5(3), p.69.	Co-author	Kyushu University	Q2	3.5	2.99
J9	Rushdi, M.A., Rushdi, A.A., Dief, T.N. , Halawa, A.M., Yoshida, S. and Schmehl, R., 2020. Power prediction of airborne wind energy systems using multivariate machine learning. Energies, 13(9), p.2367.	Co-author (contribution percentage is provided)	Kyushu University	Q1	4.7	3.47
J10	Dief, T.N. , Fechner, U., Schmehl, R., Yoshida, S. and Rushdi, M.A., 2020. Adaptive flight path control of airborne wind energy systems. Energies, 13(3), p.667.	1 st author	Kyushu University	Q1	4.7	3.47
J11	Rushdi, M.A., Dief, T.N. , Halawa, A.M. and Yoshida, S., 2020. System identification of a 6 m2 kite power system in fixed-tether length operation. International Review of Aerospace Engineering, 13(4), pp.150-158.	Co-author	Kyushu University	Q2	3.3	2.279
J12	Dief, T.N. , Fechner, U., Schmehl, R., Yoshida, S., Ismaiel, A.M. and Halawa, A.M., 2018. System identification, fuzzy control and simulation of a kite power system with fixed tether length. Wind Energy Science, 3(1), pp.275-291.	1 st author	Kyushu University	Q1	6.9	3.8

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Table 1: (continued)

No.	Paper Description	Contribution	Affiliation	Quart.	Cite Score	IF
J13	Dief, T.N. , Kamra, M.M. and Yoshida, S., 2017. Modeling, System Identification, and PID-A Controller for Tethered Unmanned Quad-Rotor Helicopter. <i>Int. Rev. Aerosp. Eng</i> , 10, pp.215-223.	1 st author	Kyushu University	Q1	3.3	2.66
J14	Dief, T.N. and Yoshida, S., 2017. System identification and adaptive control of mass-varying quad-rotor. <i>EVERGREEN Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy</i> , 4(1), pp.58-66, 2017	1 st author	Kyushu University	Q1	4.3	4.25
J15	Dief, T.N. and Yoshida, S., 2016. System identification for quad-rotor parameters using neural network. <i>EVERGREEN Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy</i> , 3(1), pp.6-1.	1 st author	Kyushu University	Q1	4.3	4.25
J16	Dief, T.N. , Kassem, A. and El Baioumi, G., 2014. Modeling and attitude stabilization of indoor quad rotor. <i>International Review of Aerospace Engineering (IREASE)</i> , 7(2), pp.43-47.	1 st author	Cairo University	Q1	1.2	1.53
J17	Ali, H., Abdelhady, M.G. and Dief, T.N. , 2014. Modelling and Control design of rover vehicle using classic and adaptive control. <i>vsg</i> , 10, p.13.	Corresponding author	Cairo University	Q1	1.2	1.53
J18	Dief, T.N. , Kassem, A.H. and El Baioumi, G.M., 2014. Modeling, robustness, and attitude stabilization of indoor quad rotor using fuzzy logic control. <i>Int. Rev. Aerospace Engin</i> , 7, pp.197-201.	1 st author	Cairo University	Q1	1.2	1.53

2 - Conference proceedings

2024

1. Kamra, M., and **Tarek N. Dief**. "Streamlining Academic Planning in Engineering Education: a Case Study of Innovative Software Implementation at UAEU." In *EDULEARN24 Proceedings*, pp. 2305-2305. IATED, 2024.
2. **Tarek N. Dief**, and M. Kamra. "Enhancing Academic Planning for Mechanical and Aerospace Engineering Students: Development of an Intuitive Student Version of In-House Academic Planning Software." In *EDULEARN24 Proceedings*, pp. 2306-2306. IATED, 2024.
3. Atallah, Mohammed, Mohamed Okasha, **Tarek N. Dief**, and Farag Omar. "Guidance and Control Systems for Multi-Satellite Assembly using Decentralized Nonlinear Model Predictive Control." In *E3S Web of Conferences*, vol. 477, p. 00022. EDP Sciences, 2024.

2023

1. **Tarek N. Dief**, Shouq Almazrouei, Shaima Alshamsi, Aysha Alfalahi, Mohamed Okasha, Mohamed Kamra, and Farag Omar. "Autonomous Flight Control for Drones using Instrumented Gloves Technology." In *AIAA AVIATION 2023 Forum*, p. 4147. 2023.
2. Alneyadi, Maitha, Shamma Alaryani, Rehema Asifewe, Imane Hemdoui, Aizat Aasim, Mohamed Okasha, Mohamed Kamra, **Tarek N. Dief**, Abduselam Mohammedhaddish, and Maitha AlGhaithi. "Interactive Graphical User Interface for Performance and Flight Dynamics Analysis of Battery-Powered Unmanned Aerial Vehicles." In *AIAA AVIATION 2023 Forum*, p. 4394. 2023.

- Atallah, Mohammed, Mohamed Okasha, **Tarek N. Dief**, and Mohamed Kamra. "Twistor-Based Relative Navigation of Satellite Rendezvous in Close Proximity Operations Using Unscented Kalman Filter." In AIAA AVIATION 2023 Forum, p. 4150. 2023.
- Shashati, Mahmoud, Salem Al Zeyoudi, Osama Al Khatib, Abdoalrahman Hakim, Wan Faris Aizat Wan Aasim, Mohamed Okasha, and **Tarek N. Dief**. "Design and Fabrication of a Solar Powered Unmanned Aerial Vehicle (UAV)." In 2023 Advances in Science and Engineering Technology International Conferences (ASET), pp. 1-10. IEEE, 2023.
- Alkatheeri, Anoud, Karim Kamalaldin, Mohamed Okasha, Haitham Elshimy, and **Tarek N. Dief**. "Design and Implementation of Attitude Control System for Gnsas 6U Cubesat." In IGARSS 2023-2023 IEEE International Geoscience and Remote Sensing Symposium, pp. 384-387. IEEE, 2023.
- Mohamed, Elhesasy, **Tarek N. Dief**, Mohamed Kamra, Saeed K. Alnuaimi, Mohamed Okasha, Roland Schmhl. "Flight Path Optimization for Airborne Wind Energy Applications Using Multiple Tethered Aircraft." (2023).

2022

- Atallah, Mohammed, Mohamed Okasha, **Tarek N. Dief**, and Farag Omar. "Model Predictive Control-Based Guidance and Control System for Simultaneous Multi-Satellite Assembly in Proximity Operation." In 2022 13th International Conference on Mechanical and Aerospace Engineering (ICMAE), pp. 114-124. IEEE, 2022.
- Atallah, Mohammed, Dhabiya Alkalbani, Maha Alsheryani, Moza Albedwawi, Reem Alshehhi, Reem Almeqbaali, Mohamed Okasha, and **Tarek N. Dief**. "CANSAT Design and Implementation for Remote Sensing Applications." Applied Research and Smart Technology (ARSTech) 3, no. 2 (2022): 56-63.

2020

- Tarek N. Dief**, Mostafa Rushdi, Amr Halawa, and Shigeo Yoshida. "Hardware-in-the-Loop (Hil) and Experimental Findings for the 7 kW Pumping Kite Power System." In AIAA Scitech 2020 Forum, p. 1244. 2020.
- Rushdi, Mostafa, Ahmed Hussein, **Tarek N. Dief**, Shigeo Yoshida, and Roland Schmehl. "Simulation of the Transition Phase for an Optimally-Controlled Tethered VTOL Rigid Aircraft for Airborne Wind Energy Generation." In AIAA Scitech 2020 Forum, p. 1243. 2020.

2018

- Tarek N. Dief**, Mostafa A. Rushdi, and Shigeo Yoshida. "Modeling and Control of Kite Power System." In Grand Renewable Energy Proceedings Japan Council for Renewable Energy (2018), p. 137. Japan Council for Renewable Energy, 2018.

RESEARCH GRANTS

Dr. Tarek has a sustained record of attracting internal and external research grants totaling approximately (3.33M AED + 192,300 CAD \$) millions (since AY 2021-2022 & excluding consultancy grants/contracts). He has been directly involved in a total of eleven (11) research projects. Details on the acquired research grants are given below. The fund is a part of a collaboration between different association such as, UAE faculty members, Renewable Energy Center in the UAEU, NSSTC Space Center in the UAEU, TU Delft University in the Netherlands, McMaster University in Canada.

Table 2: List of Research Grants since AY 2021-2022.

No.	Project Title	Type	Role	Source	Amount	Years
RG. 1	Adaptive-Flight-Path Control for Airborne Wind Energy Systems Operated in Park Configurations	Internal	PI	Strategic	750,000 (AED)	2024-2028
RG. 2	Autonomous Tethered VTOL Aircraft for Airborne Wind Energy Applications	Internal	PI	StartUp	400,000 (AED)	2022-2024
RG. 3	Design and Control Drone with Arm Control for Emergency Applications	Internal	PI	SURE+	40,000 (AED)	2023-2024

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Table 2: (continued)

No.	Project Title	Type	Role	Source	Amount	Years
RG. 4	Using UAV Drones To Scan The Agricultural Soil's Characteristics.	Internal	PI	SDGs	40,000 (AED)	2022-2023
RG. 5	Autonomous Flight Control for Drones using Instrumented Gloves Technology	Internal	PI	SURE+	50,000 (AED)	2022-2023
RG. 6	Alliance Grant (Adaptive Flight Path Control for Airborne Wind Energy)	External	CO-PI	NSERC	192,300 (CAD \$)	2024-2027
RG. 7	Robust Multiscale Design Optimization of Additively Manufactured Lightweight UAVs Employing Micro-Architected Lattice Materials	Internal	CO-PI	StartUp	400,000 (AED)	2023-2025
RG. 8	Innovative Hardware and Software Approaches for Enhancing the Testing and Validation of Nanosatellite Attitude Determination and Control Systems	Internal	CO-PI	UPAR	850,000 (AED)	2024-2028
RG. 9	Advancing Sustainable Aviation: Optimizing Design and Control of Blended Wing UAVs for Enhanced Performance and Stability	Internal	CO-PI	UPAR	399,000 (AED)	2024-2026
RG. 10	Development of a novel CFD approach for predicting multiphase flow enhanced by machine learning	Internal	CO-PI	StartUp	400,000 (AED)	2024-2026

SUPERVISION OF GRADUATE STUDENTS

Supervision of Graduate Students at UAE University

Dr. Tarek is currently supervising eleven (11) graduate students (i.e., M.Sc. and Ph.D.) at UAE University. He is the main advisor for three (3) Ph.D. students and the co-advisor for one (1) other. Additionally, he is the main advisor for three (3) M.Sc. students and the co-advisor for four (4) others. Among these M.Sc. students, one (1) graduated in Fall 2023, three (3) are expected to complete their degrees in AY 2024-2025, and two (2) in AY 2025-2026.

Table 3: Supervision of Graduate Students

Student Name	Degree	Thesis Title	Role	Status
1 - Pritti Paul	PhD	Advancements in Generator Technology for Enhanced Efficiency in Airborne Wind Energy Systems (tentative title)	Main advisor	2023-present (In progress)
2 - Badar Ali	PhD	Adaptive-Flight-Path Control for Airborne Wind Energy Systems Operated in Park Configurations (tentative title)	Main advisor	2024-present (In progress)
3 - Yahya Khurshid	PhD	Adaptive Morphing Wing Designs for Enhanced UAV Performance in Airborne Wind Energy Applications (tentative title)	Main advisor	2024-present (In progress)
4 - Wan Aizat	PhD	Design of Quadcopter with Crack Mapping capabilities using Thermal and RGBD Cameras	Co-advisor	2022-present (In progress)

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Table 3: (continued)

Student Name	Degree	Thesis Title	Role	Status
5 - Moataz Afify	MSc	Design of Path Tracking Control of Quadrotor	Main advisor	2022-present (In progress)
6 - Mohamed Elhesasy	MSc	Autonomous Tethered VTOL Aircraft for Airborne Wind Energy Applications	Main advisor	2023-present (In progress)
7 - Dana Alnuaimi	MSc	Modeling and Autonomous Control System for a Delivery Drone	Main advisor	2023-present (In progress)
8 - Mohamed Ataalla	MSc	Decentralized Guidance, Navigation and Control for Multi-Satellite Assembly in Proximity Operations	Co-advisor	2021-2023 (Completed)
9 - Anoud Alkatheeri	MSc	Design and Implementation of Attitude Control System for GNSSAS 6U CubeSat	Co-advisor	2022-present (In progress)
10 - Aysha Alshamsi	MSc	Development and Simulation of Navigation Systems for VTOL (Vertical Take-Off and Landing) UAVs	Co-advisor	2023-present (In progress)
11 - Abdulrahman Elazazi	MSc	Integrating Machine Learning with CFD for Superior Multiphase Flow Predictions (<i>tentative title</i>)	Co-advisor	2024-present (In progress)

Publications with Graduate Students in the UAEU.

• Journal Publications

1. Robust Twistor-Based Spacecraft Relative Pose Estimation Using Unscented Kalman Filter (**Accepted - Astrodynamics**)
2. **Elhesasy, M.**, Rashed Khader, Dief, T.N., Mohamed M. Kamra, Mohamed Okasha, and Saeed K. Alnuaimi. "Experimental Identification of the Translational Dynamics of a Novel Two-Layer Octocopter." *Drones* 8, no. 7 (2024): 286.
3. **Atallah, M.**, Okasha, M., Dief, T.N., and Jallad, A.H., 2023. "Optimal consensus control for multi-satellite assembly in elliptic orbit with input saturation." *Acta Astronautica*, 208, pp.82-90.
4. **Elhesasy, M.**, Dief, T.N., Atallah, M., Okasha, M., Kamra, M.M., Yoshida, S., and Rushdi, M.A., 2023. "Non-linear model predictive control using CasADi package for trajectory tracking of quadrotor." *Energies*, 16(5), p.2143.
5. **Atallah, M.**, Okasha, M., Dief, T.N., and Omar, F., 2022. "Model Predictive Framework for Guidance and Control of a Multi-Satellite Assembly in Elliptic Orbit." *International Review of Aerospace Engineering*, 15(6), pp.308-320.

• Conference Papers

1. **Elhesasy, M.**, Dief, T.N., Kamra, M., Alnuaimi, S.K., Okasha, M., and Schmehl, R., 2024. "Flight Path Optimization for Airborne Wind Energy Applications Using Multiple Tethered Aircrafts." In 10th International Airborne Wind Energy Conference (AWEC 2024).
2. **Atallah, M.**, Okasha, M., Dief, T.N., and Omar, F., 2024. "Guidance and Control Systems for Multi-Satellite Assembly using Decentralized Nonlinear Model Predictive Control." In *E3S Web of Conferences* (Vol. 477, p. 00022). EDP Sciences.
3. **Alkatheeri, A.**, Kamalaldin, K., Okasha, M., Elshimy, H., and Dief, T., 2023, July. "Design and Implementation of Attitude Control System for GNSSAS 6U Cubesat." In *IGARSS 2023-2023 IEEE International Geoscience and Remote Sensing Symposium* (pp. 384-387). IEEE.
4. **Atallah, M.**, Okasha, M., Dief, T.N., and Kamra, M., 2023. "Twistor-Based Relative Navigation of Satellite Rendezvous in Close Proximity Operations Using Unscented Kalman Filter." In *AIAA AVIATION 2023 Forum* (p. 4150).
5. **Atallah, M.**, Alkalbani, D., Alsheryani, M., Albedwawi, M., Alshehhi, R., Almeqbaali, R., Okasha, M., and Dief, T.N., 2022. "CANSAT design and implementation for remote sensing applications." *Applied Research and Smart Technology (ARSTech)*, 3(2), pp.56-63.
6. **Atallah, M.**, Okasha, M., Dief, T.N., and Omar, F., 2022, July. "Model predictive control-based guidance and control system for simultaneous multi-satellite assembly in proximity operation." In 2022 13th International Conference on Mechanical and Aerospace Engineering (ICMAE) (pp. 114-124). IEEE.

**Tarek Dief** Edit

PhD, Kyushu University · Assistant professor at United Arab Emirates University

Abu Dhabi, United Arab Emirates | [Website](#)*Current activity*

Research Interest Score ————— 389.8

Citations ————— 257

h-index ————— 11

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Citations

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95

Recommendations

→ ---

Research Interest Score: **389.8**

Score breakdown

- 22.83% Citations
- 5.772% Recommendations
- 43.06% Full-text reads
- 28.34% Other reads

Compared to all ResearchGate members

Your Research Interest Score is higher than 83% of ResearchGate members.

Compared by date of first publication

Your Research Interest Score is higher than 92% of ResearchGate members who first published in 2014.

Compared by research area

TEACHING, MENTORING, & ADVISING

1 Publications in Peer-Reviewed Pedagogical Journals

An educational paper has been accepted to an educational journal related journal. The submitted paper details are as follows:

- **Tarek N. Dief**, Farag K. Omar, Saeed K. Alnuaimi, Mohamed M. Kamra, Practical Learning in Mechatronics Education: A Case Study on Post-Pandemic Rover Projects. Interntaion Review of Aerospace Engineering (IREASE).

2 Presentations at International Education Conferences

There are two educational conference presentations offered by Dr. Tarek: one where he is the first author and another where he is the corresponding author. The details are as follows:

1. **Dief, T.N.**, and M. Kamra. "Enhancing Academic Planning for Mechanical and Aerospace Engineering Students: Development of an Intuitive Student Version of In-House Academic Planning Software." in EduLearn24 proceedings, pp. 2306-2306. iated, 2024. **Link:** <https://library.iated.org/view/DIEF2024ENH>

2. Kamra, M., and **Dief, T.N.**, "Streamlining Academic Planning in Eengineering Education: a Case Study of Innovative Software Implementation at UAEU." in EduLearn24 proceedings, pp. 2305-2305. iated, 2024.
link: <https://library.iated.org/view/kamra2024str>

3 Grants Awarded for Teaching Innovation

The teaching funds I received are mainly provided to support teaching innovation. After submitting a proposal and undergoing an evaluation, the awarded projects receive funding. All funded projects have produced excellent outcomes, documented by videos.

Table 4: List of Teaching Grants AY 2021-2024

No.	Project Title	Type	Role	Source	Amount (AED)	Years
TG. 1	Autonomous Flight Control for Drones using Instrumented Gloves Technology	Internal	PI	SURE+ 2022	50,000	2022-2023
TG. 2	Design and Control Drone with Arm Control for Emergency Applications	Internal	PI	SURE+ 2023	40,000	2023-2024
TG. 3	Using UAV Drones To Scan The Agricultural Soil's Characteristics	Internal	PI	SDGs 2022	40,000	2023-2024
TG. 4	Human Detection with IR Thermal Images using a Quadrotor	External	PI	BOEING 2022	10,500	2022-2023
TG. 5	Flight-Path Optimization for Multi-Unmanned Aerial Vehicles (UAVs)	External	PI	BOEING 2023	7,000	2023-2024

4 Teaching Load and Diversity of Courses

The total workload of Dr. Tarek, from AY 2021-2022 to AY 2023-2024, averaged **25.55** credit hours per academic year. Since joining UAEU in AY 2021-2022, he has taught *thirteen (13) different courses* for both the mechanical and aerospace programs with 24 classes. The total number of students enrolled in Dr. Tarek's courses over the 3 academic years, excluding the graduation projects, and postgraduate students, is *635 students with an average of 211 students per academic year*. The details of courses taught over the 3 years are detailed below:

Table 5: Workload per Semester through AY 2021-2024

AY	2021-2022			2022-2023			2023-2024			Avg.
Semester	1 st	2 nd + Summ.	Total	1 st	2 nd	Total	1 st	2 nd	Total	Per AY
Workload	10.91	13.57 + 3	27.48	14.66	9	23.66	11	14.5	25.5	25.55

Table 6: List of courses that have been taught with their frequency from Fall 2021 to Spring 2024

No.	Course	2021-2022	2022-2023	2023-2024
1	MECH 210 Measurement and Instrumentation lab	X(4)		
2	AERO 220 Aerospace Lab 1	X(2)	X(2)	
3	MECH 310 Dynamics	X(3)		
4	MECH 409 Dynamic Systems and Control	X(1)	X(5)	X(2)
5	AERO 501 Selected Topics in Aerospace Engineering			X(1)
6	MECH 532 Design of Mechatronics Systems	X(1)		X(2)
7	AERO 585 Graduation Project I			X(1)

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Table 6: (continued)

No.	Course	2021-2022	2022-2023	2023-2024
8	MECH 585 Graduation Project I	X(1)	X(1)	X(1)
9	MECH 590 Graduation Project II	X(1)	X(1)	X(1)
10	MECH 614 Advanced Control Systems			X(1)
11	MECH 690 MSc Thesis		X(2)	X(2)
12	MECH 800 Dissertation Doctoral Research			X(1)
13	MECH 900 Comprehensive Exam			X(1)

Undergraduate Students Project Supervision

Table 7: Undergraduate Students Project Supervision

Student Name(s)	Project Title	Year	Project Type
Adil Acheere Yahyia Badran Dream Tanashu Fitsum Mekonnen	Design and Control for Vertical Take-Off and Landing (VTOL) System	2023-2024	Capstone (GP)
Shouq Almazrouei Aysha Almarzooqi Aamena Alshehhi Mariam Alshamsi	Flight-Path-Optimization for Multi Unmanned Aerial Vehicles (UAVs)	2023-2024	Capstone (GP)
Shaima Alshamsi Mira Alblooshi Mouza Alalawi	Design and Control of an Airship for Long-Endurance Flight	2022-2023	Capstone (GP)
Mohamed Murad Rashed Khader Hazza Alseraihi Faisal AlJaberi	Human Detection with IR Thermal Image using a Drone	2022-2023	Capstone (GP)
Dhabiya Alkalbani Maha Alsheryani Reem Alshehhi Moza Albedwawi Reem Almeqbaali	CanSat Design and Implementation for Remote Sensing Applications	2021-2022	Capstone (GP)
Shouq Almazrouei Sara Alkalbani Nouf Alblooshi Aamena Alshehhi Mariam Alshamsi	Design and Control Drone with Arm Control for Emergency Applications	2023-2024	SURE Plus
Shouq Almazrouei Shaima Alshamsi Aysha Faraj Alfalahi	Autonomous Flight Control for Drones using Instrumented Gloves Technology	2022-2023	SURE Plus

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Table 7: (continued)

Student Name(s)	Project Title	Year	Project Type
Osama Alkhatib Abdoalrahman Hakim Salem Alzeyoudi Mahmoud Shashati Adam Khasawneh	Using UAV Drones To Scan The Agricultural Soil's Characteristics	2022-2023	SDGs

Industrial Training

Table 8: List of Student Enrollment under my academic advising

Semester	Student ID	Student Name
Summer 2022	201703577	Maitha Hamdan Saeed Nasser Alghaithi
	201735012	Noor Jawdat Ameen
	201709050	Latifa Matar Ali Matar Alneyadi
Summer 2023	201815170	Rashed Khader Ajamy Mahmoud Khader
	201800061	Shouq Matar Khalfan Almazrouei
	201901954	Shaima Ali Mohammed Alshamsi
	201803107	Mohammed Helal Mohammed Alkaabi
	201808606	Mohammed Saeed Matar Alshamsi
Summer 2024	202008613	Abdulrahman Ebrahim Omar Alblooshi
	202007156	Ahmed Saeed Salem Almazrouei
	202081232	Ali Ibrahim Rashid Alsalami
	202008282	Buti Abdulrahman Abdulrahim Aljneibi
	202007205	Rashed Rashed Obayed Aldhanhani
	202007159	Salem Saeed Salem Almazrouei
	202003774	Saeed Saeed Mohammed Alshamsi
	201903666	Abdulla Ismail Fairouz Alharthi
	201806945	Saif Saif Mohammed Alnuaimi

Table 9: Student Enrollment under my training supervision

Semester	Student ID	Student Name
Fall 2023	201701514	Fatima Alzaabi
	201811215	Meera Alshamsi
Summer 2024	201950306	Fitsum Mekonnen

PhD committees

Dr. Tarek has served as an internal examiner for PhD student graduation theses in the Electrical Department, a comprehensive examiner for PhD students, and a prospectus examiner for PhD students

- **Comprehensive Examiner:** Revathi Ramakrishnan and Wan Faris Aizat
- **PhD Dissertation Examiner:** Omsalama Mubarak
- **Prospectus Examiner:** Vyshak Sureshkumar

Academic Plan Advising

As an academic advisor, Dr. Tarek has overseen a growing number of undergraduate students in Mechanical and Aerospace Engineering, advising 20 students in the 2021-2022 academic year, 65 in 2022-2023, and 66 in 2023-2024. This substantial advising responsibility is notable, considering that the Mechanical and Aerospace Engineering (MAE) department accounts for about 40% of the College of Engineering's student population, which totals approximately 1,400 students. Dr. Tarek is dedicated to offering prompt and precise guidance to students.

UNIVERSITY AND COMMUNITY SERVICES

Table 10: Positions, Duties, and Years of Service

No.	Position	Role	Level	Years of Service
1	Industry walk event.	member	College	AY 23-24
2	Grade Appeal and fact finding committees	Member	College	AY 22-24
3	PhD Dissertation, Prospectus and Comprehensive examiner for four (4) PhD students	Member	College	AY 22-24
4	Student Activities AIAA	Chair	Department	AY 22-24
5	Continues Quality Improvements (CQI)	Chair	Department	AY 23-24
6	Minor propulsion	Member	Department	AY 22-23
7	Aerospace Focus Group	Member	Department	AY 22-24
8	Scheduling Aerospace Program (AEROSPACE)	member	Department	AY 23-24
9	Faculty and Staff Hiring	Member	Department	AY 23-24
10	ABET Progress Reports of Aerospace Program	Member	Department	AY 21-22
11	Dynamics and Control Focus Group	Member	Department	AY 21-24
12	PhD Graduate Committee	Member	Department	AY 22-24
13	CAA Progress Reports of Aerospace Program	Member	Department	AY 21-24
14	Computer and IT	Member	Department	AY 22-23
15	Equipment committee	Member	Department	AY 23-24
16	Academic Advisor for Undergraduate Students	Advisor	Department	AY 23-24
17	Seminar Class MECH660: Presentation "Airborne Wind Energy"	Guest Speaker	Department	AY 23-24
18	Curriculum	Member	Department	AY 23-24
19	Senior Design Projects	Member	Department	AY 23-24
20	Publicity and Outreach	Member	Department	AY 22-23
21	Graduating students and alumni	Member	Department	AY 22-23

CONSULTANCY & ADVISORY SERVICES

As the chair of the UAEU section of the American Institute of Aeronautics and Astronautics (AIAA), Dr. Tarek has actively promoted and supported student engagement in the research of drone and UAV technologies, which are of strategic interest to the UAE. His leadership has been crucial in inspiring students to enhance their capabilities by translating theoretical knowledge

into practical prototypes. This effort has not only advanced educational enrichment but also facilitated the dissemination of scholarships and research findings from notable aerospace organizations. Additionally, he has rigorously applied international standards across all design phases of graduate projects and postgraduate research, ensuring adherence to globally recognized benchmarks and enhancing the academic rigor of these initiatives. This work has led to attracting international universities and companies for collaboration, as follows:

Table 11: List of National & International Collaborators

No.	Collaborator	Category	Country
1	TU Delft	University	Netherlands
2	University of Freiburg	University	Germany
3	McMaster University	University	Canada
4	Boeing	Company	USA
5	PD Aerospace Space Company - JAXA	Company	Japan
6	EDGE - Halcon	Company	UAE
7	GAL AMMROC	Company	UAE

PRESENTATIONS AT SCHOLARLY & TEACHING EVENTS

Dr. Tarek has contributed to the organization of many professional workshops/activities off-campus summarized below:

Table 12: List of Professional Workshops Off-Campus

No.	Activity Title	Organizer	Location	Year
E 1	COE, UAEU Pavilion and Workshop (Expo 2020)	Dubai Expo 2020	Dubai, UAE	2022
E 2	Drone Experts Workshop	Dubai Police HQ	Dubai, UAE	2022
E 3	Alain Flight Tests	Alain Sportplex Club	Alain, UAE	2022 - present
E 4	NextGen Leaders - Roundtable Nomination Form	Dubai Airshow	Dubai World Center (DWC), Dubai, UAE	2023
E 5	Abu Dhabi Air Show 2022	Air Expo Abu Dhabi	Abu Dhabi, UAE	2022
E 6	Dubai Air Show 2023	Dubai Airshow	Dubai, UAE	2023
E 7	NSSTC Visit	AIAA, UAEU	Alain, UAE	2023
E 8	NSSTC Visit	AIAA, UAEU	Alain, UAE	2024
E 9	Canada Flight Test	McMaster University	Ontario, Canada	2023
E 10	Government Innovation Lab for Traffic and Roads Agency	Dubai RTA	Dubai, UAE	2022

REVIEWING AND EDITORIAL ACTIVITIES

Dr. Tarek has contributed extensively as a referee for a variety of international journals and conference proceedings, reviewing a total of 10 assignments. Below is a list of journals that have been assigned/reviewed over the past 3 years.

Table 13: Summary of Journals and Assigned Papers

No.	Journal	Quartile	No. of Assigned Papers
1	Renewable and Sustainable Energy Reviews	Q1 (5%)	1
2	IEEE Transactions on Vehicular Technology	Q1 (5%)	1
3	Drones	Q1	3
4	Sensors	Q1	1
5	Applied Sciences	Q2	1
6	Vehicles	Q2	1
7	Process	Q2	1
8	Entropy	Q2	1

Moreover, He has membership of Scientific/Technical/Review Committees or Advisory Board of International Conferences:

1. **Reviewer Committee member:** The TORQUE2024 Scientific Committee in Florence (ITALY); (1) abstract review and (3) conference proceeding.
2. **Reviewer Committee member:** UAE Graduate Students Research Conference (UAEGSRC'2024), Al Ain, UAE, 2024.

EXTRACURRICULAR ACTIVITIES

- Consistently received 'Excellent' ratings in the annual and biannual performance evaluation cycles.
- Member of the College of Engineering Grade Appeal Revision/Evaluation Committee since 2022. Participated in two grade appeal committees and one fact-finding committee.
- Initiated collaboration between the University of California (UCL) and UAEU's College of Engineering for industrial training, enabling undergraduate students to take their industrial training at UCL. The initiative is ongoing with several meetings held.
- Attended a meeting with the Ministry of Defence at UAEU to explore collaborative opportunities.
- Awarded the Kyushu University Engineering PhD Award in September 2017.
- Awarded the RIAM Fellowship at Kyushu University, Japan, in April 2018.
- Awarded the NRSEC Fellowship at the University of Alberta, Canada, in August 2020.
- Participated in College of Engineering events at the UAEU Pavilion (Expo 2020) with undergraduate and graduate students.
- Collaborated with Al-Ain Sportlex Club management to facilitate flight tests for undergraduate students using drones and UAVs.
- Partnered with AMMROC GAL to provide consultancy services and training opportunities for undergraduate students.
- Represented the College of Engineering at the Maritime Sustainability Research Center event in Abu Dhabi.
- Initiated collaboration with VOLAR, a Hong Kong-based company, in the field of electric Unmanned Aerial Vehicles (e-UAVs).
- Contributed to the development of an advising tool for undergraduate students in the College of Engineering, improving the accuracy of academic planning.
- Attended a workshop organized by Dubai Police with undergraduate students to present their projects and exchange expertise with industry professionals.
- Represented the College of Engineering at IDEX 2023 as part of the UAEU section, showcasing one of six projects from the entire university to engage students in cutting-edge technology.
- Invited to brainstorming workshops by Dubai RTA to discuss the future utilization of drones in various sectors.
- Served as a guest speaker for the Seminar Class MECH660 (Fall 2023 & Spring 2024) on the topic "Airborne Wind Energy."
- Contributed to a one-day symposium on Aerospace Innovations: Materials, Manufacturing, and Aerodynamics for undergraduate and postgraduate students at UAEU during the academic year 2023-2024.
- Appointed as an Airplane Development Engineer at PD Aerospace Company (a subsidiary of JAXA) in Japan.