

Curriculum vitae

Professor Mou'ad A ALTarawneh

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Professional Profile

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- Dynamic and Professional in applied physics, material science, and nanomaterials with a proven record of establishing self-sustaining, multidisciplinary research programs.
 - Expert in end-to-end management of research funding, from securing competitive grants to strategic resource allocation.
 - Author of high-impact publications in top-tier journals, advancing the fields of experimental material physics and Nanotechnology.
 - Extensive experience in long-term financial modeling and budget management for large-scale, multi-stakeholder projects.
 - Expert in bridging theoretical physics with advanced laboratory research to foster high-quality instructional environments.
 - Demonstrated excellence in teaching undergraduate and graduate curricula aligned with international academic standards.
 - Lead supervisor for graduate research projects, providing rigorous practical training and professional advising to the next generation of physicists.
 - Strategic contributor to university growth through departmental leadership, administrative service, and community engagement

Professional Skills

- Proficient in the International Computer Driving License (ICDL) program, with knowledge of both IT and AI tools

- Expert in database tools and online teaching with excellent research skills and the ability to plan and organize tasks effectively.
- Demonstrated teaching skills for undergraduate and postgraduate students with experience supervising for thesis for postgraduate and PhD students as well as managing undergraduate research final projects.
- Experienced with various research methodologies and possess extensive skills. Ability to efficiently prioritize and organize tasks to meet deadlines while also demonstrating exceptional research skills.
- Proactive in problem solving, using a creative approach to solution discovery.
- Strong interpersonal skills with flexibility to work extended hours and excellent interpersonal skills
- Experienced with experimental research and follows safe workplace practices and procedures in accordance with health and safety regulations.
- Experienced at multitasking and successfully completing projects, as well as short- and long-term strategic financial planning and budget management, with a track record of leading and managing organizational improvements.

Education

- PhD of Science Degree in Physics (Material Science, Nanomaterials), School of Applied Physics, Material Science Program, University Kebangsaan Malaysia, Malaysia, 2010
- Dissertation: "Thermoplastic Natural Rubber Composites Reinforced with Nanoclay, Carbon Nanotubes and Hybrid Nanoclay-Carbon Nanotubes"
- Master of Science Degree in Physics (Material Science), Mutah University, Jordan, 2005
- Bachelor of Science Degree in Physics, Mutah University, Jordan, 2002
- General Secondary Education Certificate Examination, Scientific Stream, Ja'far bin Abi Talib School, Jordan, 1998

Academic / Teaching Experience

- Full Professor, Department of Physics, College of Science, Al-Hussein Bin Talal University, Ma'an, Jordan. (8/2/2022 - Present)
 - Conducting advanced physics courses and research in Material Science, Nanomaterials.
 - Mentoring and advising undergraduate and graduate students on research projects.
- Associated Professor, Department of Physics, College of Science, Al-Hussein Bin Talal University, Ma'an, Jordan. (8/2/2017 - 8/2/2022)
 - Taught advanced physics courses and supervised research in Material Science, Nanomaterials.
 - Advised and guided undergraduate and graduate students on research projects.

- Senior Lecturer, Department of Physics, College of Science, Al-Hussein Bin Talal University, Ma'an, Jordan. (8/2/2015 - 8/2/2017)
 - Taught physics courses and supervised research projects for undergraduate students.
 - Worked collaboratively with research groups within and outside of the university.
- Senior Lecturer, School of Applied Physics, Faculty of Science and Technology, University Kebangsaan Malaysia, Malaysia. (1/1/2011 - 30/1/2015)
 - Mentored and advised undergraduate and graduate students on research projects.
 - Conducted research in Material Science, Nanomaterials and published scientific papers in peer-reviewed journals.
- Head of Department of Physics, College of Science, Al-Hussein Bin Talal University, Ma'an, Jordan. (1/9/2016 - 1/9/2018)
 - Managed and supervised the work of department staff and faculty members.
 - Prepared and managed budgets for departmental activities and programs.
 - Developed and implemented strategies for enhancing academic and research excellence.
- Visitor Lecturer, Physics course in English (Physics 1 and Physics 2) for undergraduate students in their first year. Mutah University, Jordan. (2003 - 2005)
 - Taught introductory physics courses in English for first-year undergraduate students.
 - Supervised laboratory sessions for the physics course.
- Laboratory Supervisor for Physics Science for undergraduate students in their first year. Mutah University, Jordan. (2003 - 2005)
 - Supervised laboratory sessions for the physics course.
 - Assisted students in conducting experiments and recording data.
- Taught Physics, Chemistry, and Science in high schools under the Ministry of Science Education, Jordan. (2002 - 2006)
 - Taught physics, chemistry, and science courses to high school students.
 - Prepared lesson plans and designed assessments to evaluate student learning.

Area of Research

- Material Science
- Polymer Nanocomposites
- Thermoplastic Natural Rubber
- Carbon Nanotubes
- Graphene/Graphene Oxide/Graphene Nanoplates
- Polymer Blending

- Natural fiber reinforced composites
- Advanced Materials
- Bio-composite
- Applied Physics
- **I have ability to teach these courses.**
 - The science and engineering of materials
 - Materials science for engineers
 - Nanotechnology
 - Solid state
 - Polymers Science and Technology
 - Atomic and molecular physics
 - Modern physics
 - Advance Modern physics
 - Properties of matter
 - Classical mechanics 1 & 2
 - Thermodynamic
 - Quantum Mechanics
 - Electromagnetic Theory
 - Electronics
 - Mathematical physics 1 & 2
 - physics 1 and physics 2
 - Mathematic 1 and Mathematic 2
 - Polymer physics
 - Plasma physics
 - Optics 1& 2
 - Special topics

Experience Instruments Included:

- Polarized Light Microscopy
- Differential Scanning Calorimeter (DSC)

- Thermal Gravimetric Analysis (TGA)
- Dynamic Mechanical Analysis (DMA)
- Tensile Machine
- Impact Machine
- Thermal Conductivity Instruments
- Internal Mixer, Extruder Mixer and Injection Moulding
- Transmission Electron Microscope (TEM)
- Scanning Electron Micrograph (SEM)
- Fourier Transform Infrared Spectroscopy (FTIR)
- Atomic Force Microscopy (AFM)
- X-ray diffraction analysis (XRD)
- X-ray Fluorescence (XRF)

Completed/ On-going research project / Consultancies

- Science fund Grant 03-01-02-SF0059
- UKM-OUP-NBT-29-142/2011
- UKM-OUP-FST-2011
- UKM-GUP-2011-161
- UKM-OUP-2012-135
- UKM-DLP-2012-029
- FRGS/1/2012/SG07/UKM/01/1
- GUP-2012-084
- DLP-2014-034
- FRGS/1/2014/SG06/UKM/01/2
- DIP-2016-023
- DIP-2018-031
- FRGS/1/2019/TK05/UKM/02/3

Research Student Supervision

- 8 students at PhD level and 25 students at master's level, many undergraduates for project dissertations beginning 2010 until now.

Reviewing Activities:

- Composites, Part B
- Journal of Applied Polymer Science
- Composites Science and Technology
- Polymers for Advanced Technologies
- Journal of Reinforced Plastics and Composites
- Journal of Thermoplastic Composite Materials
- Journal of Industrial & Engineering Chemistry Research
- Journal of Polymer Bulletin
- Silicon Journal
- Optical Materials
- Chemical Engineering Journal
- Science and Engineering of Composite Materials (SECM)
- Advances in Materials Science and Applications (AMSA)

Editor in Journal:

- The Scientific Research Journal (SRJ) (ISSN: 1675-7009), published by Universiti Teknologi MARA (UiTM), Malaysia
- Journal of Modern Polymer Chemistry and Materials.

Publications / JOURNAL

- **Mou'ad.A.Tarawneh**, Ing Kong, Sahrim Hj. Ahmad, Rozaidi Rasid, S.Y.Yahya, Lih Jiun Yu, Moayad Husein Flaifel. Magnetic properties of thermoplastic natural rubber nanocomposites reinforced with carbon nanotubes. World journal of engineering, Vol 5, No 4. 1019.2008
- **Mou'ad.A.Tarawneh**, Sahrim Hj. Ahmad, S.Y.Yahya,Rozaidi Rasid. The Effect of Ultrasonic Treatment on The Tensile Properties of Thermoplastic Natural Rubber (TPNR) Nanocomposites. Journal of solid-state science and technology, Volume 17, No1, 37-43.2009
- **Mou'ad.A.Tarawneh**, Sahrim Hj. Ahmad, S.Y.Yahya,Rozaidi Rasid. Effect of Ultrasonic Treatment on The Tensile and Impact Properties of Thermoplastic Natural

- Rubber Nanocomposites Reinforced With Carbon Nanotubes. Journal of American Institute of Physics (AIP). Volume 1136, 71-75.2009
- Mohamad M. Milad, Sahrim Hj. Ahmad, S.Y.YAHYA. **Mou'ad.A.Tarawneh.** Mechanical and Magnetic Properties of Thermoplastic Natural Rubber Naocomposites Filled With Barium Ferrit. Journal of American Institute of Physics (AIP). Volume 1136, pp. 46-50.2009
 - Sahrim Ahmad, A.Aziz Mohamed, Jaafar Abdullah, Hafizal Yazid, M.Dahlan, Rozaidi Rasid, W. Saffiey W.Abdullah, Mahathir Mohamad, Rafhayudi Jamro, M.Hamzah Harun, **Mou'ad A.T.** Application of image and X-ray microtomography technique to quantify filler distribution in thermoplastic-natural rubber blend composites. Journal of American Institute of Physics (AIP). Volume 1212, pp 139-145.2009
 - Sahrim Haji Ahmad; **Mouad, A. T.**; Mohamed, A. A.; Jaafar Abdullah; Hafizal Yazid; Wan Saffiey Wan Abdullah; Rafhayudi Jamro; Faridah Idris; Haniza Yazid; Rozaidi Rasid. Image analysis of filler dispersion in TPNR composites. Instrumentation Related to Nuclear Science and Technology (S46). 41 (24). 2009.
 - **Mou'ad. A. Tarawneh,** Sahrim Hj. Ahmad, S. Y. Yahya, Rozaidi Rasid, Yew Chin Hock, and Hazwani Binti Halim. Tensile and Impact Properties of Thermoplastic Natural Rubber (TPNR) Filled with Carbon Nanotubes (MWNTs), Journal of American Institute of Physics (AIP). Volume 1250, 213-216.2010
 - **Mou'ad.A.Tarawneh,** Sahrim Hj. Ahmad, Rozaidi Rasid, S.Y.Yahya, Lng Kong Mechanical Properties of Thermoplastic Natural Rubber (TPNR) Reinforced With Multi-Walled Carbon Nanotubes (MWNTs). Journal of Solid State Science and Technology Letters, Vol. 17, No 1&2 (2010) 70-76.
 - **Mou'ad.A.Tarawneh,** Sahrim Hj. Ahmad, Rozaidi Rasid, S.Y.Yahya. Mechanical Properties of Thermoplastic Natural Rubber (TPNR) Reinforced With Different Types of Carbon Nanotube. Journal of Sains Malaysiana, Vol 40, No. 7, 725-728, 2011.ISSN 0126-6039
 - Lee Yip Seng, Sahrim HJ. Ahmad, Rozaidi Rasid, Se Yong Eh Noum, Yew Chin Hock & **Mou'ad A. Tarawneh.** Effects of LNR on Mechanical Properties of Liquid Natural Rubber Toughened Epoxy Composite. Journal of Sains Malaysiana, Vol 40, No. 7, 679-683, 2011.
 - **Mou'ad.A.Tarawneh,** Sahrim Hj. Ahmad, Rozaidi Rasid, S.Y.Yahya and Se Yong Eh Noum. Thermal Behavior of a MWNT Reinforced Thermoplastic Natural Rubber Nanocomposite. Journal of Reinforced Plastic and Composites 30(3) 216–221.2011.

- **Mou'ad.A.Tarawneh**, Sahrim Hj. Ahmad, Rozaidi Rasid, S.Y.Yahya, Se Yong Eh Noum. Enhancement of the Mechanical Properties of Thermoplastic Natural Rubber Using Multi-walled Carbon Nanotubes, Journal of Reinforced Plastic and Composites. 30(4) 363–368.2011. ISSN 0731-6844.
- **Mou'ad.A.Tarawneh**, Rozaidi Rasid, S.Y.Yahya, Se Yong Eh Noum. The Enhancement of Properties of TPNR/Clay Nanocomposites by Using Ultrasonic Treatment. Journal of Reinforced Plastic and Composites. 30(6) 524–532.2011. ISSN 0731-6844
- **Mou'ad.A.Tarawneh**, Sahrim Hj. Ahmad, S.Y.Yahya, Rozaidi Rasid. Mechanical and Thermal Properties of Thermoplastic Natural Rubber (TPNR) Nanocomposites Treated with Ultrasonic. Journal of Advanced Materials Research, Volumes 264 – 265, page 973-978. (2011). ISSN 978-3-03785-053-4
- **Mou'ad.A.Tarawneh** and Sahrim.H. Ahmad, Thermoplastic Natural Rubber (TPNR) Composite Reinforced With Nanoclay, MWNTs and Hybrid Nanoclay-MWNTs, Journal of Reinforced Plastic and Composites. Volume 30, number 20, 1745-1752. (2011). ISSN 0731-6844
- Safwat A. Mahmoud, Shereen Alshomer, **Mou'ad A. Tarawneh**, Structural and Optical Dispersion Characterisation of Sprayed Nickel Oxide Thin Films. Journal of Modern Physics, 2011, 2, 1178-1186
- Ku Zarina KU AHMAD, Sahrim HJ. AHMAD, **Mou'ad A.Tarawneh**, Prakash R. APTE. Optimization of Tensile Properties of Epoxy/nanoclay/MWNT nanocomposites by Taguchi Method, Journal of Advanced Materials Research Vol. 428 (2012) pp 3-6
- Sahrim Hj. Ahmad, **Mou'ad.A.Tarawneh** , Yu Lih Jiun, Shamsul Bahri, A.R, Mechanical Properties of TPNR-MWNTs-OMMT Hybrid Nanocomposites. Journal of Advanced Materials Research .Vol 501(2012) pp (194-198).
- Yu Lih Jiun, Sahrim Hj. Ahmad, **Mou'ad.A.Tarawneh**,Kong Long, Microwaves Absorbing properties of Nickel-Zinc Ferrite/ Multiwalled carbon nanotubes thermoplastic Natural Rubber Composites. Journal of Advanced Materials Research Vol 501(2012) pp (24-28).
- **Mou'ad.A.Tarawneh**, Sahrim Hj. Ahmad, Ku Zarina K.A, Norita Hassan, Thermal Conductivity, Thermal Diffusivity and Specific Heat of TPNR Hybrid Nanocomposites At different Temperatures. Journal of Advanced Materials Research.Vol.576(2012) pp.(296-299)

- H. Norita, S. H. Ahmad, N. Muhamad, M. A. Omar, H. N. Azlina and **Mou'ad a. Tarawneh**. Investigations on Metal Injection Molding of 316L SS Using Thermoplastic Natural Rubber (TPNR) Binder as a New System. *Journal of Advanced Materials Research*. Vol. 576 (2012) pp.(150-153)
- Ku Zarina KU AHMAD, Sahrim HJ. AHMAD, **Mou'ad A.Tarawneh**, Application of taguchi's approach in the optimization of tensile properties of epoxy nanoclay/MWNTs nanocomposites. *Journal of Advanced Materials Research*. Vol.576 (2012) pp. (256-259).
- K.Z.K Ahmad, S. HJ. Ahmad, **M. A. Tarawneh** P.R. Apte, Evaluation of Mechanical Properties of Epoxy/Nanoclay/Multi-Walled Carbon Nanotube Nanocomposites using Taguchi Method, *Journal of Procedia Chemistry*. 2012. Volume 4, Pages 80–86.
- **Mou'ad.A.Tarawneh**, Sahrim Hj. Ahmad , Ku Zarina K.A, Ibrahim N. Hassan, and Shamsul Bahri A.R , The Enhancement of Properties of TPNR-MWNTs-OMMT Hybrid Nanocomposites by Using Ultrasonic Treatment. *Journal of Sains Malaysiana* .Volume 42 (4) 2013.
- **Mou'ad.A.Tarawneh**, Sahrim Hj Ahmad. The Effect of Ultrasonic Treatment and Gamma Radiation on the Thermal Conductivity of TPNR Hybrid Nanocomposites. *Journal of Advanced Materials Research* Vol. 626 (2013) pp.(29-33)
- **Mou'ad.A.Tarawneh**, Sahrim Hj. Ahmad, Rozaidi Rasid, S.Y.Yahya, Kin-tak Lau, Ing Kong. Sonication Effect on the Mechanical Properties of MWNT Reinforced Natural Rubber. *Journal of Composite Materials*. 2013, 47(5) 579–585.
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- **Mou'ad A.Tarawneh**, Sahrim Hj.Ahmad, Ku Zarina K. A. The Effect of MWCNTs on the Rubber-Toughened Epoxy Nanocomposites. *IEEE. 2012 IEEE Colloquium on Humanities, Science & Engineering Research (CHUSER 2012)*, December 3-4, 2012, Kota Kinabalu, Sabah, Malaysia. 2013 pp.(810-813).
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- **Mou'ad A Tarawneh**, Dalila Shahdan, and Sahrim Hj. Ahmad. Investigation on the Effect of NiZn Ferrite on the Mechanical and Thermal Conductivity of PLA/LNR Nanocomposites. *Journal of Nanomaterials*. Volume 2013 (2013), Article ID 306961.
- **Mou'ad. A. Tarawneh**, Sahrim Hj. Ahmad, A.R. Shamsul Bahri& S.N. Surip. The Effects of Gamma Irradiation on Mechanical Properties of TPNR Hybrid Nanocomposites. *International journal of Composite Interfaces* (Volume 21, Issue 4:281-286. 2014
- **Mou'ad A Tarawneh**, Sahrim Hj Ahmad, Yu Lih Jiun, Radwan Dweiri, Ibrahim N. Hassan. Morphology and Mechanical Properties of NiZn ferrite/ Thermoplastic Natural Rubber Composite. *Journal of Advanced Materials Research* Vol. 925: 308-312. 2014
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- **Mou'ad. A. Tarawneh** & Sahrim Hj. Ahamd. Characterization and properties of PLA/ENR/MWCNTs nanocomposite. *Communications in Information Engineering. E-COMMERCE, E-BUSINESS AND E-SERVICE*. Page 195-198. 2014 Taylor & Francis Group, London, ISBN 978-1-138-02646-9
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- Ruey Shan Chen, Mohd Hafizuddin Ab Ghani, Sahrim Ahmad, Mohd Nazry Salleh, **A Tarawneh Mou'ad**. Rice husk flour Biocomposites Based on Recycled High-Density Polyethylene/Polyethylene Terephthalate Blend: Effect of High Filler Loading on Physical, Mechanical and Thermal Properties. *Journal of Composite Materials*. Vol 29(10), 1241-1253.2014.
- Ruey Shan Chen, Mohd Hafizuddin Ab Ghani, Mohd Nazry Salleh, Sahrim Ahmad and **Mou'ad A. Tarawneh**. Mechanical, water absorption, and morphology of recycled polymer blend rice husk flour biocomposites, *Journal of Applied Polymer Science.*, 132, 41494. 2015

- **Mou'ad. A. Tarawneh**, Sahrim Hj. Ahmad, Ibrahim N. Hassan, Ruey Shan Chen, O. Al-Banawi. Characterizations and Morphology of MWCNTs-SiC Nanoparticles Reinforced PLA/NR/LENR Composites. *Journal of Advanced Materials Research* 2015. Vol. 1107, pp 108-112. 2015
- Amamer Musbah Redwan, Khairiah Haji Badri, and **Mou'ad A. Tarawneh**. The Effect of Aluminium Hydroxide (ATH) on the Mechanical Properties and Fire Resistivity of Palm-Based Fibreboard Prepared By Pre-Polymerization Method. *Journal of Advanced Materials Research*.2015. Vol. 1087, pp 287-292.2015
- Ibrahim N. Hassan, Faszly Rahim, Sharina Abu Hanifah, **Mou'ad A. Tarawneh**, Bohari M. Yamin. Synthesis, Characterization, Spectroscopic and X-Ray Diffraction Studies of a Novel Pair of Thiourea Derivatives of 2-morpholin-4-yl-ethylamine. *ASIAN Journal of Chemistry*. Vol 27, No 10. PP. 3711-3715. 2015
- Ibrahim N. Hassan, **Mou'ad A. Tarawneh**, Bohari M. Yamin. Synthesis, Spectral and Single-Crystal Analyses of New Derivative of 4-Amino-N-benzylpiperidine. *ASIAN Journal of Chemistry*. Vol 27, No 12. PP. 4457-4460. 2015
- **Mou'ad.A.Tarawneh**, L.J. YU, Musab A.Tarawni, Sahrim Hj. Ahmad, O. Al-Banawi, Mohammad A.Batiha. High Performance Thermoplastic Elastomer (TPE) Nanocomposite Based on Graphene Nanoplates (GNPs). *World Journal of Engineering*. 12(5) 437-442. 2015
- Siti Norasmah Surip, Wan Nor Raihan Wan Jaafar, **Mou'ad.A.Tarawneh**, Nur Naziha Azmi. Mechanical Properties of Polylactic Acid (PLA) Green Composites Reinforced By Kenaf Bast and Core Fibers. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)* ISSN: 2278-3075, Volume-5 Issue-5. 2015.
- **Mou'ad.A.Tarawneh**, Adilah Mat Ali, Sahrim Hj. Ahmad, L.J. YU. Influence of Multiwalled Carbon Nanotubes Content on Thermal Conductivity of Polyactic Acid/Liquid Natural Rubber Nanocomposite. *World Journal of Engineering*. Volume 13 · Number 1. pp1–5· 2016.
- Adilah Mat Ali, Sahrim Hj Ahmad*, Mou'ad A.Tarawneh. Effect of Multi Walled Carbon Nanotubes on Thermal Conductivity of Polylactic acid Nanocomposite. *Malaysian Journal of Analytical Sciences*. Vol 20 No 5 (2016): 1084 – 1089.

- **Mou'ad .A. Tarawneh**, Sahrim Ahmad, Ruey Shan Chen. Mechanical, thermal, and electrical properties of graphene oxide–multiwalled carbon nanotubes-filled thermoplastic elastomer nanocomposite. *Journal of Elastomers and Plastics*. 49 (4), 345-355. 2017.
- Ruey Shan Chen, Sahrim Ahmad, Sinyee Gan, Mohd Nazry Salleh, Mohd Hafizuddin Ab Ghani, **Mou'ad A. Tarawneh**. Effect of polymer blend matrix compatibility and fibre reinforcement content on thermal stability and flammability of eco-composites made from waste materials. *Thermochimica Acta*. Volume 640, 20 September 2016, Pages 52–61.
- MAM Al-Tarawni, AAA Bakar, ARM Zain, **AT Mou'ad**, SH Ahmad. Optimizing an integrated waveguide modulator for sensitive low-frequency alternating-current electric-field sensors. *Optical Engineering* 56 (6), 067101. 2017
- MAM Al-Tarawni, AAA Bakar, ARM Zain, **AT Mou'ad**, SH Ahmad. Improvement of integrated electric field sensor based on hybrid segmented slot waveguide. *Optical Engineering* 56 (10), 107105. 2017.
- Mohammed Al-Tweissi, **Mou'ad A. Tarawneh**, M.Q. Owaidat, Monther Als Boul. Optical Characterization of Thin Films Poly (Ethylene Oxide) Doped with Cesium Iodide. *Journal of Nano- and Electronic Physics*. Vol. 10 No 5, 05016(4pp) (2018).
- **Mou'ad A. Tarawneh**, Ruey Shan Chen, Sahrim Hj Ahmad, Musab A. M. Al-Tarawni, S.A. Sarairoh. Hybridization of a thermoplastic natural rubber composite with multi-walled carbon nanotubes/silicon carbide nanoparticles and the effects on morphological, thermal, and mechanical properties. *Polymer Composites*. Vol 40 (S1), pp E695-E703. 2019
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- Lih-Jiun Yu, Sahrim Hj Ahmad, **Mou'ad A Tarawneh**, AR Shamsul Bahri, Elango Natarajan, Chun Kit Ang. Magnetic, thermal stability and dynamic mechanical properties of beta isotactic polypropylene/natural rubber blends reinforced by NiZn ferrite nanoparticles. *Defence Technology*. 15 (6), 958-963 2019

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- Sherin A Saraireh, Mohammednoor Altarawneh, **Mouad A Tarawneh**. Adsorption and dissociation of the methanethiol (CH_3SH) molecule on the Fe(100) surface. *Surface and Interface Analysis*. Volume 52, Issue 4, 156-166.2020
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