الخطة البحثية لقسم التقنيات الكهربائية للعام الدراسي ٢٠١٨ - ٢٠١٩ و ٢٠١٩ - ٢٠٢٠

ت	اسماء الباحثين	اللقب العلمي	الشهادة	موقف النتاج	جهة النشر	العام الدراسي	عنوان النتاج	ملخص عن النتاج
1	محمود حاكم عناد	مدرس مساعد	ماجستير	منشور	IOP Conferanc Series Materials Science and Engineering	2019-2020	An improved Performance of Segmentation Evaluation Based on Feature Extraction using Kinect Sensors	Kinect sensor suggestions new viewpoints for the advance and application of inexpensive, portable and easy-to-use indication less motion capture skill. The goal of this work is to estimate accuracy of the Kinect cameras for full body motion investigation. This study developed an application that of using multiple depth and RGB Kinect sensors for that reasonable system that prepared with multi-depth of sensing was used in this work. Additional application confirmed the Kinect camera validity the evaluated of postural control and different images of biomedical for segmentation skin lesions. In this work, multi-depth assessment and segmentation are conjointly addressed using RGB input image under Median filter with post-processing. Compared with our algorithm outputs an organized-to-use highly suitable for creating 3D Kinect sensors with pre and post-processing steps. The multi-depth extracted image features have higher measurement and accuracy. The results are dealing out the depth and RGB picture with segmentation evaluation depend on feature extraction technique to enhance accuracy.
	د.مهند حسن علي	استاذ مساعد	دكتوراه					
	د.حيدر خضير لطيف	مدرس	دكتوراه					
2	د.مهند حسن علي	استاذ مساعد	دكتوراه	منشور	Indonesian Journal of Electrical Engineering and Computer Science	2019-2020	Study of impact of art performance level of blue laser technology applications and its control	we present an enhancement in blue laser diodes with new factors and applications for modern technology such as underwater telecommun-ications , bio-sensor and bio-medical systems etc. Years of advance meanwhile have much enhanced laser performance, and extremely improved their diversity, making lasers significant parts in scientific research, telecommunications , engineering, bio-medical imaging, materials working, and a swarm of other applications. This article viewing how laser technology has progressed to chance application requirements. The enhanced blue laser building diagrams to get a peak efficiency % at room temperature with modification. Moreover, we have as well estimated electro-optical performance packing of blue laser diodes been significantly various associated to GaAs laser method and novel developments and performances are required to enhance the optical power from anther laser diodes. Researchers need enhanced approaches to accurately make new the blue laser applications to use control of modern experimental measurements and optical communication.
	محمود حاكم عناد	مدرس مساعد	ماجستير					
	د.جاسم محمد جاسم	مدرس	دكتوراه					

the report of this problem by developing (Asymmetry, Border, Colour, Dimeter and Evolution) ABCDE skin lesions boundary technique with a healthy control pointer function, which is based on colony bees' scheme (ABC). The estimated performance parameters and calculation times are equivalent or improved than above-mentioned approaches. This all-ABCDE application is planned to be informal navigate for the end user, which is imperious for the final democratization of such medical diagnostic classifications. The resulting segmentation can be used as an input to test the skin lesions are benign, suspicions and melanoma classification system	ABCDE Evaluated the Model for Decision by Dermatologists for Skin Lesions using Bee Colony.	2019-2020	IOP Conferanc Series Materials Science and Engineering	منشور	دكتوراه	استاذ مساعد	د.مهند حسن علي	3
					ماجستير	مدرس مساعد	محمود حاكم عناد	
This experiment was conducted in an agricultural field in Hindiah district in the Secret province of Karbala, in a silt loam soil during the year 2019, to study the effect of tow types of plows the sweep and chisel plow (factor1) and tow types of pulverization equipment Rotavator and spring pulverization (factor1) on Beans growth and some technical indicators for machinery unit. The effect of these tow factors and the interactions between them on Slippage percentage, practical productivity,	The effect of tillage and pulverization equipment on beans growth and some technical indication for machinery unit).	2019-2020	IOP Conference Series: Earth and Environmental Science	منشور	ماجستير	مدرس	خالد زمام عامر	4
					ماجستير	مدرس مساعد	خالد حتوم صوين	
The CAD design of Power Amplifiers requires an accurate non-linear modelling solution. Generally, this is provided by state function (I-V, Q-V) model formulations. These typically require time consuming measurement procedures for model extraction and verification. Look-up table a-wave based behavioral models, i.e. the Cardiff Model, extracted directly from measurement data provide for a robust alternative, addressing both simulation accuracy and model extraction time. The challenge is identifying, in a time efficient manner, the appropriate load-pull impedance space, that ensures the model coefficients are accurately extracted. This paper outlines an automated approach addressing this requirement, that exploits the novel features of emerging high-speed load-pull measurement systems to identify and then measure directly load-pull power contours. The automated approach reduces significantly the number of required measurements, hence the measurement time, compared with the traditional approach while also ensuring an accurate Cardiff Model is extracted. The approach is demonstrated on a on a 10W packaged Cree HFET.	Automating the Accurate Extraction and Verification of the Cardiff Model via the Direct Measurement of Load-Pull Power Contours	2018-2019	IEEE MTT International Microwave Symposium (IMS)	مقبول و منشور	دكتوراه	مدرس	ذوالفقار حميد عبدالرضا	5
					دكتوراه	مدرس مساعد	عزام عصام الراوجي	
					دكتوراه	استاذ	Johannes Benedikt	
					دكتوراه	-	James Bell	
					دكتوراه	استاذ	Paul Tasker	

This paper investigates and compares the use of nonlinear test-set models for an effective and accurate operation of active load-pull systems. The results demonstrate a simple-to-implement and yet robust technique to align the generator and receiver reference plane with a minimum set of required measurements. With only 14 measurements a high agreement between target and measured load points was achieved with an average error less than 0.1 dB over a 70dB dynamic range. An increase in modeling complexity has therefore yielded no improvement. To compare the results, a behavioral model was employed, and it is shown that a high order of model complexity is required to achieve the same level of accuracy. The presented work provides, for the first time, a practical and effective method for the modeling of test-set nonlinearities, hence allowing a cost-effective implementation of active load-pull systems that operate power amplifiers within a gain compression region.	On the Effective Modeling of the Test-Set Non-linearity	2018-2019	Microwave Measurement Conference (ARFTG)	مقبول و منشور	دكتوراه	مدرس	ذوالفقار حميد عبدالرضا	6
					دكتوراه	مدرس مساعد	عزام عصام الراوجي	
					دكتوراه	-	Syed S. Anera	
					دكتوراه	استاذ	Johannes Benedikt	
					دكتوراه	-	James Bell	
					دكتوراه	استاذ	Paul Tasker	
This paper demonstrates a novel approach to reduce the density of load-pull measurements that are required to populate a high-density Cardiff behavioural model coefficient look-up table, versus input drive signal, covering a large dynamic range. The presented approach investigates the use of coefficient interpolation to achieve this objective using a recently published re-formulation of the Cardiff behavioural model. This approach provides global interpolation functions for the model coefficients with respect to input drive level (|a 11 |). It is shown that this approach can provide for accurate interpolation of load-pull behaviour over a 2-4 dB power range. This knowledge can be used to reduce the number of measurements necessary, hence the time duration required, to populate the Cardiff behavioural model look-up table, without compromising accuracy when used in CAD simulations. The techniques are demonstrated on a 10W packaged Cree HFET.	Global Behavioural Model Generation Using Coefficients Interpolation	2019-2020	IEEE MTTS International Microwave Symposium (IMS)	مقبول و منشور	دكتوراه	مدرس	ذوالفقار حميد عبدالرضا	7
					دكتوراه	مدرس مساعد	عزام عصام الراوجي	
					دكتوراه	استاذ	Johannes Benedikt	
					دكتوراه	-	James Bell	
					دكتوراه	استاذ	Paul Tasker	

This paper presents a new technique for identifying the mixing structure, model coefficients and therefore model order of the Cardiff behavioral model for phase related non-linearities. The technique employs a two-tone measurement approach and the Fast Fourier Transform (FFT) to be able to observe the mixing structure above the noise floor of the measurement system. Spectral tone visibility explicitly requires model coefficient inclusion for accurate (NMSE < -40dB) data fitting, which is verified by comparing model fitting of full and truncated model formulations. The identified maximum phase model order from two-tone measurements, for annuli on the Smith Chart, is shown to be accurate for Continuous Wave (CW) measurements.	Cardiff Behavioural Model Analysis using a Two-Tone Stimulus	2019-2020	IEEE Topical Conference on RF/Microwave Power Amplifiers for Radio and Wireless Applications (PAWR)	مقبول و منشور	دكتوراه	مدرس	عزام عصام الراوجي	8
					دكتوراه	مدرس مساعد	ذوالفقار حميد عبدالرضا	
					دكتوراه	-	Syed S. Anera	
					دكتوراه	استاذ	Johannes Benedikt	
					دكتوراه	-	James Bell	
					دكتوراه	استاذ	Paul Tasker	
This paper presents a new measurement and data analysis approach for both identifying the required Cardiff behavioural model complexity and directly extracting the associated model coefficients, Kp,h,m,n . The technique developed utilizes a multi-tone measurements approach. Load-pull measurements are performed using an engineered multi-tone active load-pull excitation, A21(t), that is chosen for its ability to identify the required model complexity. Fast Fourier Transforming (FFT) the device response, B 21 (t), allows the respective model mixing order contributions to be directly observed above the noise floor of the measurement system. Formulating the Cardiff behavioural model in the frequency domain, with this selected multi-tone stimulus, also allows for the first time the direct extraction of the model coefficients.	Behavioural Model Extraction using Novel Multitone Active Load-pull	2019-2020	IEEE MTTS International Microwave Symposium (IMS)	مقبول و منشور	دكتوراه	مدرس	عزام عصام الراوجي	9
					دكتوراه	مدرس مساعد	ذوالفقار حميد عبدالرضا	
					دكتوراه	استاذ	Johannes Benedikt	
					دكتوراه	استاذ	Paul Tasker	
					دكتوراه	-	James Bell	
The paper presents a novel reformulation of the Continuous Class-F (CCF) mode by including an I-V knee scaling equation in the drain current waveform. The device's knee region scales down the waveform and distorts the ideal flat performances especially when the device is in compression. The output power and drain efficiency are no longer constant across α variation in the CCF mode. Instead, symmetrical performances across α space are simulated and measured showing drain efficiency is at peak when α is at its extreme: +1 or -1. 10W GaN HEMT broadband PA (1.7 GHz to 2.7 GHz) is designed by restricting phase rotation of 2 nd harmonic impedances within α=-1 ranges across bandwidth. The manufactured PA achieved 11.3W-18.4W Pout and 65.7%-83.4% DE. When operated with 10MHz LTE signal with 7.6dB PAPR at 2.7 GHz, the PA achieved ACPR levels of -53.6/-54.6 dBc after DPD.	High-Efficiency Broadband PA Design Based on Continuous Class-F Mode with Compression	2019-2020	IEEE MTTS International Microwave Symposium (IMS)	مقبول و منشور	دكتوراه	مدرس	Syed S. Anera	10
					دكتوراه	مدرس مساعد	ذوالفقار حميد عبدالرضا	
					دكتوراه	-	Sattam Alsahali	
					دكتوراه	-	James J. Bell	
					دكتوراه	-	Roberto Quaglia	
					-	-	Munawar Kermalli	
					دكتوراه	استاذ	Paul J. Tasker	
					دكتوراه	استاذ	Johannes Benedikt	

This study highlights the main contributions for the single phase to ground faults on distribution networks field throughout a last three decades from classic methods to heuristic methods. The surveys about76 papers that are published in the field, the quantity of existing methods for each method is determined andcategorized. The study includes graphs and tables explaining the frequency of each single phase to ground faultsmethods and so that, researchers in the same field can be used this paper as a guideline for their research.	Methods in Single Phase to Ground Faults on Power Distribution Systems	2018-2019	Journal of Engineering and Applied Sciences	مقبول ومنشور	دكتوراه	استاذ	1Dur Muhammad Soomro	11
					دكتوراه	مدرس	د. عدنان حسن طوفان	
					ماجستير	مدرس مساعد	فريال ابراهيم جبار	
	Optimization of detection single line to ground fault based on (ABCNN) algorithm	2020-2019	3rd international conference on engineering and computing	مقبول ومنشور	دكتوراه	استاذ	1Dur Muhammad Soomro	12
					دكتوراه	مدرس	د. عدنان حسن طوفان	
					ماجستير	مدرس مساعد	فريال ابراهيم جبار	
								13
								14
								15