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# REDEFINING ENGINEERING

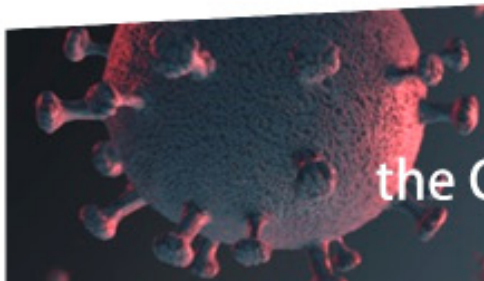


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Special topic:  
**E-Learning, COVID-19,  
the Challenges and Way Forward**



# welcome

## COLLEGE OF ENGINEERING

### BULLETIN TEAM

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# Research Clusters and Activities



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College of Engineering

College of Engineering is the most recently established academic division in Universiti Malaysia Pahang. The academic staff come from various faculties in UMP. Each of them has different specialisations and talents, which are extremely beneficial to shape the future of College of Engineering. Research clusters are multidisciplinary and organised based on the academic departments available in the college. The research clusters aim at harnessing the academic facilities and laboratories available in the college and aligned to the strategic centres of excellence established by the university. Each cluster works for fundamental research and develops a strategic plan for external national and international grants which organise itself in creating critical mass skills, scholarly publications and research based on students' experience. One element in the DNA of College of Engineering is Discovery, which is to uncover new scientific knowledge. To achieve this goal, the College of Engineering has formed five research clusters and eleven research groups. Each research group is led by a head and these heads work together as a team to discover new scientific boundary. Meanwhile, a number of research groups are clustered in one research cluster based on the nature of the research groups. The research cluster is further managed by its own head. The research clusters and heads are as follows:

- Materials Research Cluster - Dr Doh Shu Ing
- Chemical Research Cluster - Assoc Prof Dr Cheng Chin Kui
- Electronics Research Cluster - Dr Muhammad Izhar Ishak
- Energy Research Cluster - Assoc Prof Dr Wan Azmi Wan Hamzah
- Industry Research Cluster - Ir Dr Zamri Mohamed



Materials Research Cluster consists of:

- Materials in Civil Engineering, Concrete Technology, Highway Engineering and Nanomaterial in Civil Engineering Research Group
- Smart Materials and Nanotechnology Research Group
- Advanced Materials Engineering and Computation (AMEC) Research Group
- Materials Science (Laser Processing, Surface Engineering, Metallurgy Tribology, Thermal Fatigue) Research Group

Chemical Research Cluster consists of:

- Food, Energy and Water Sustainability Research Group

Electronics Research Cluster consists of:

- Artificial Intelligence and Biomimetic Mechatronic (AiBM) Research Group
- Applied Electronics and Computer Eng. Research Group
- Internet-of-Things, Data Analytics and Wireless Research Group

Energy Research Cluster consists of:

- Energy Efficiency Research Group
- Energy Storage, Energy Harvesting, Electric Vehicles, Soft Computing Research Group

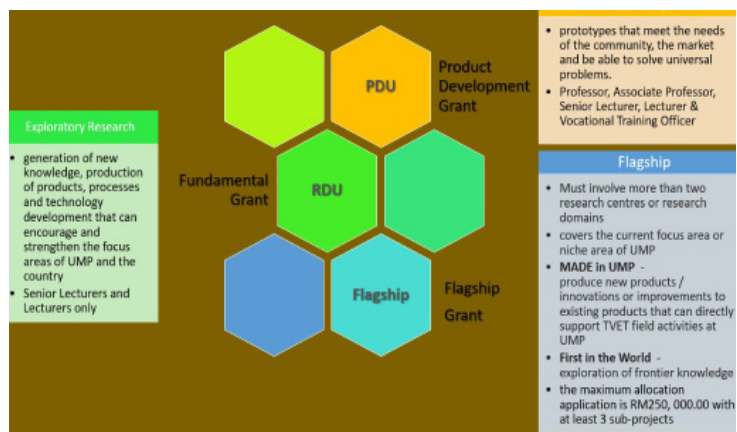
Industry Research Cluster consists of:

- Industrial Systems and Engineering Research Group

# Research Activities

## Research Grants

Research grants are instrumental to the Engineering staff, community and postgraduate students in many aspects. It is apparent that research grants help researchers in enhancing the basic knowledge and supporting those with high impact and innovative idea/ projects enabling them to come out with emerging technologies for the industry and community. Additionally, the number of scientific articles published by the researchers help to expand scientific knowledge which ultimately contribute to the nation's economic growth.



## Research Activities

### Research Outputs: CITREX 2020 Exhibition Participation (STAFF)

No	INVENTION TITLE	APPLICANT	AWARDS
1	A NOVEL MICROFLUIDICS KIT FOR SEAWATER DESALINATION	HAYDER A. ABDUL BARI	GOLD
2	NANOSILICA-MODIFIED ASPHALT MIXTURE	KHAIRIL AZMAN MASRI	GOLD
3	ENHANCED DRYING PERFORMANCE OF PIPER NIGRUM IN A SWIRLING FLUIDIZED BED DRYER	AHMMAD SHUKRIE MD YUDIN	GOLD
4	EMULSIFICATION OF HEAVY CRUDE OIL USING A NOVEL SUNFLOWER OIL BASED SURFACTANT FOR PIPELINE TRANSPORTATION	ABDURAHMAN HAMID NOUR	GOLD
5	INFAWRAP DEVICE FOR NEONATES	MOHD AZRUL HISHAM MOHD ADIB	GOLD
6	THE POTENTIAL OF FENUGREEK SEED EXTRACT FOR HEALTH, ENVIRONMENT AND ECONOMIC EXTRACTED VIA MICROWAVE TECHNOLOGY	ABDURAHMAN HAMID NOUR	GOLD
7	RENEWABLE SOLAR ENERGY AND RAINWATER HARVESTING FOR ENVIRONMENT SUSTAINABILITY	NADIATUL ADILAH BT. AHMAD ABDUL GHANI	SILVER
8	WASTE PLASTIC IN ASPHALT-GREEN ROAD	RAMADHANSYAH PUTRA JAYA	SILVER
9	HIGH TEMPERATURE FATIGUE/WEAR SIMULATOR	SYARIFAH NUR AQIDA BINTI SYED AHMAD	SILVER
10	DIGESTIVE ENZYME FOR POULTRY FROM PINEAPPLE WASTE	JUN HASLINDA BINTI HJ. SHAR-IFFUDDIN	SILVER
11	G-WEIGHT CRETE : FUTURE FOR FUTURE	SAFFUAN BIN WAN AHMAD	SILVER
12	THE PERFORMANCE OF ULTRASONIC-ASSISTED MEMBRANE ANAEROBIC SYSTEM (UMAS) IN TREATMENT OF SUGARCANE MILL EFFLUENT (SCME)	ABDURAHMAN HAMID NOUR	SILVER
13	SURGICAL DRILLING TECHNIQUE FOR THERMAL NECROSIS PREVENTION	AHMAD RAZLAN BIN YUSOFF	SILVER
14	ENVIRONMENTAL FRIENDLY REFINISH NANO PAINT	WAN AZMI WAN HAMZAH	SILVER
15	EFFICIENT LUBRICANT FOR HYBRID CAR AIR-CONDITIONING	WAN AZMI WAN HAMZAH	SILVER
16	INLINE REFORMED GAS GENERATION FOR COMBUSTION STABILITY OF CNG FUELED SI ENGINE	FTWI YOHANESS HAGO	SILVER
17	ENHANCED DRYING PERFORMANCE OF COCOA BEAN IN A SWIRLING FLUIDIZED BED DRYER	AHMMAD SHUKRIE BIN MD YUDIN	BRONZE
18	GREEN APPLICATION OF GROUND COOLING PIPE FOR IMPROVING ENERGY SAVING IN BUILDING	MOHD YUSOF BIN TAIB	BRONZE
19	ONLINE MACHINE CONDITION MONITORING FOR DOWNTIME COST REDUCTION	MEBRAHITOM ASMELASH GEBRE-MARIAM	BRONZE
20	DEVELOPMENT OF VIRTUAL INSTRUMENTATION FOR VIBRATION ANALYSIS IN PREDICTIVE MAINTENANCE AND CONDITION BASED MONITORING	MOHD FIRDAUS BIN HASSAN	BRONZE
21	SED-EPR MODEL FOR PREDICTING SEDIMENT LOAD IN RIVERS WITH MINING ACTIVITIES	NADIATUL ADILAH BT. AHMAD ABDUL GHANI	BRONZE
22	BRADY-TACHY HEARTOMOTIVE DEVICE FOR MIRCOSLEEP DETECTION	MOHD AZRUL HISHAM BIN MOHD ADIB	BRONZE
23	NOVEL MICROFLUIDICS KIT FOR SIMULATING AND TESTING BLOCKED VESSELS USING NATURAL ADDITIVES	HAYDER A. ABDUL BARI	BRONZE
24	MICROWAVE-ASSISTED EXTRACTION OF $\beta$ -SITOSTEROL FROM WASTE COCOA SHELLS	MOHD SABRI BIN MAHMUD	BRONZE
25	BITUMINOUS SHORT KENAF FIBER	KHAIRIL AZMAN BIN MASRI	BRONZE
26	SOLUTION APPLICATION IN REDUCTION OF FREE FATTY ACID IN CRUDE PALM OIL	MOHD SABRI BIN MAHMUD	BRONZE