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## TABLE OF CONTENT

<b>DESIGN CATEGORY</b>	<b>Pages</b>
1. INTELLIGENT ESSENTIAL OIL EXTRACTION SYSTEM	2
2. DEVELOPMENT OF AN ELECTRONIC EDUCATIONAL KIT FOR LEARNING CONTROL PRINCIPLE SUBJECT; BLOCK DIAGRAM	3
3. E-TOURISM ATLAS: A WEB-MULTIMEDIA TOURISM MAPPING SYSTEM AND MOBILE APPS IN MALAYSIA	4
4. MTXbrooch: FINE METAL AND TEXTILE ARTS FOR MODERN CONTEMPORARY BROOCH	5
5. RULER MATH	6
6. BOOK POINT	7
7. EMOQUEST : BEST PRACTICE VISUAL EMOTIONAL TECHNIQUES SURVEY IN TEACHING AND LEARNING AS AN INNOVATIVE APPROACHES USING MOBILE APPLICATIONS	8
8. MODEL KIT I-BO	9
9. GUNA –GUNA	10

## INNOVATION CATEGORY

10. WALKING AROUND IMPROVEMENT KEYS (WALKS)	12
11. A-DAM –ALAT BERMAIN, BERZIKIR DAN BERDOA	13
12. GAMEBOX: ALTERNATIVE THERAPY TO IMPROVE AUTISM’S THINKING AND MENTAL ABILITY	14
13. PENGHAYATAN DAN KEBERKESANAN PENGGUNAAN MULTIMEDIA DALAM KURSUS MAGNUM OPUS MELAYU DI UNIVERSITI MALAYSIA KELANTAN	15
14. REHAL TOOLKIT	16
15. BASIC ISLAMIC LEARNING (BIL) BOARD GAME	17
16. EZH2O-Citrullus	18
17. TEJA – ECO INDIKATOR	19
18. ARLITAR: AUGMENTED REALITY FOR BASIC CIRCUIT LEARNING MODULE	20
19. COOLING PAD TEMPERATURE MONITORING SYSTEM USING ARDUINO (CPTM)	21
20. AUGMENTED REALITY BASED APPLICATION FOR CHEMISTRY EDUCATION (ARCHEM)	22
21. DUAL-MODE DISTILLATION ESSENTIAL OIL EXTRACTION SYSTEM WITH STFPID	23
22. HOBP (HYDROGEL OF BANANA PEEL) : UTILIZATION OF BANANA PEEL WASTE AS A BASIC MATERIAL FOR ECO-FRIENDLY HYDROGEL PLANTING MEDIA	24

# INNOVATION

## CATEGORY

# DUAL-MODE DISTILLATION ESSENTIAL OIL EXTRACTION SYSTEM WITH STFPID

**Zuraida Muhammad<sup>1</sup>, Nadiah Ismail<sup>1</sup>, Zakiah Mohd Yusoff<sup>2</sup>, & Mohd Hezri Fazalul Rahiman<sup>3</sup>**

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This product offers the popular steam and hydro distillation in a single unit. The product design is tailored to suite domestic and household application. It comes in a counter- top easy-to-use unit, with a compact and presentable look. The efficiency is promising and it even conserves more energy as compared to its industrial counterparts. With selectable dual-mode distillation, the product covers broad spectrum of raw materials to be extracted. Top performance when this product designs including with self - tuning fuzzy PID controller(STFPID) to control temperature of induction heating system to provide the good quality of extraction. Targeted at low-income community or even cottage industries, this system is designed and developed with minimal cost in mind. The parts are easily replaceable with standard components available in the market. This effort might indirectly help us to preserve and promote Malaysian invaluable herbs globally.



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