

CELEBRATING  
COMMERCIALISATION  
YEAR 2014

# iiindex 2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

invention  
innovation  
& design  
exposition 2014

INNOVATEUR  
wannabe!  
2014

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UNIVERSITI TEKNOLOGI MARA  
MALAYSIA

*Bridging  
the valley of death :  
advancing the  
commercialisation  
of research*

RESEARCH BOOK

# iiindex2014

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innovation  
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**RESEARCH INNOVATION BUSINESS UNIT**  
UiTM-MTDC Technopreneur Centre, Universiti Teknologi MARA  
40450 Shah Alam, Selangor Darul Ehsan, MALAYSIA  
Tel : +603-5544 2747/2748/2750  
Fax : +603-5544 2790

Web : [www.iiindex.com.my](http://www.iiindex.com.my)  
Email : [iiindexuitm@gmail.com](mailto:iiindexuitm@gmail.com)



## FOREWORD

The Honourable Minister of Science, Technology and Innovation (MOSTI) has launched 2014 as Malaysia Commercialisation Year 2014 (MCY2014) with the theme Science Technology and Innovation (STI) for Wealth Creation. In line with this theme, Invention, Innovation, Design & Exposition 2014 (iidex2014) is an annual exposition organized by UiTM and is the ultimate platform to highlight and commercialise new inventions and innovations. Researchers and inventors will exhibit their products which cater to the needs and wants of the community and the country.

The iidex2014 creates a new dimension by fusing two competitive concepts, a competition among innovative products and a competition to invite Innovateur Wannabes to perform live pitching of their products to the audience. The iidex2014 focuses on comprehensive commercialization and creating opportunities for entrepreneurs to carry out R&D as well as to provide avenue to commercialise their products. Through expositions such as iidex2014, MOSTI hopes to inculcate the culture of commercialisation of new technology designed and created by Malaysians.

I wish to congratulate all the participants of the iidex2014 and this is the opportunity for all researchers to show their ideas and exhibits their products and creativity. Apart from showcasing their products, innovators will have the opportunity to provide a window to the industry for business matching during the exposition.

Tan Sri Dato' Sri Sallehuddin Mohamed  
Pro-Chancellor, Universiti Teknologi MARA

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## NAILS BINDING IKAT TEXTILE DESIGN

Firdaus Binti Hj Mhd Jakin, Effa Izzwanna Binti Mohamad Nor, Norwani Binti Md Nawawi  
Faculty of Art & Design, UiTM Shah Alam, Selangor.  
Email: [firdausjakin@gmail.com](mailto:firdausjakin@gmail.com)

Tie-dye is believed to have been practiced early in history by people in many parts of the world and in Malaysia it is called "kain plangi". "Kain Plangi" is the first batik which existed in the 17th century in Malaysia. Binding Ikat is a resist-dyeing method of patterning fabric created by withholding dye on certain area of the fabric. It consists of binding certain parts of the cloth in such way that when it is dyed, the dye is unable to penetrate into these areas and the method and effect of resist dyeing are various. The design effect based on the experiment conducted where the outcome of design patterns produced is influenced by the type of nails. The fabric used also play a big influence over the final result of the design pattern. The result of experiments conducted clearly shows that design patterns differ depending on nail size play a crucial role in these experiments. The design effect produced using tie-dye technique is unlimited and unpredictable. The material used for binding also influences the process of producing the binding ikat design because it can prevent colours from penetrating into other area. Then the selection of different types of fabric is another influence on the design. These areas are visible results seen on fabric cotton, chiffon and calico. Design pattern on cotton and chiffon are full and compact while the colours are bright and different with calico fabric where the design pattern produced on this cloth are sparse while the colours are dull to poor absorption. The colours are one of the main components in the creation of design pattern tie-dye technique. The colours give varieties to the design patterns produced through the experimental process intermixing colours, different design pattern were then created. In addition, the fishing lines used for tying process and applying different types of technique also can give differences of the ikat design. The design was formed and may look like spider web or diamond pattern. The fishing line is the core material used for tying the fabric in the experiment and named binding ikat or tie-dye technique. This can be seen on the design pattern created on the fabric in the shape circle and white lines. The design is created when any string was tied for tying onto the fabric which prevented the colours from absorption. Hence the bind surface will remain as white to reveal the original base colour. At the end of the experiment, it was observed that there are interesting design pattern produced using various types binding technique including size and type nails used. The result can to generate idea by introducing a new product and artwork. This provides exposure to Malaysians on the aesthetic and the beauty of "kain plangi" as an aspiring design to create artwork. The design can be anything about the pattern of Islam especially the fashion, soft furnishing, artwork and etc. The design produced different and unplanned design patterns.