



### Professor Keiji Tanaka of Kyushu University named APS Fellow

Japan – The American Physical Society (APS) has elected Keiji Tanaka, Professor in the Department of Applied Chemistry at Kyushu University, as a Fellow of the society for his contributions to the field of physics... [Read more on page 52](#)

### Migration critical to survival of dolphin populations genetic study shows

United Arab Emirates – An international team of researchers from United Arab Emirates University, Murdoch University, University of New South Wales, University of Western Australia and University of Hawaii has conducted an analysis of dolphin genes that revealed information about their past migrations... [Read more on page 66](#)



### AI-powered WiseEye: How wise is it?

Hong Kong – Small defects in garments reflect big problems in quality control. Defects may come from fabrics. In the textile industry, one of the challenges is to ensure that defect free fabrics are used to produce high-quality products. While fault detection relying on the naked eye is rather inconsistent and inefficient, automated systems can be expensive and unreliable....

[Read more on page 35](#)

### ITMO University scientists analyse gaming behaviour to predict players' gender

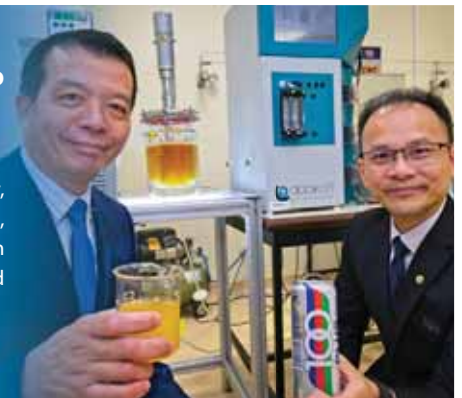
Russian Federation – ITMO University researchers managed to determine players' gender based on the data garnered via an online gaming platform. They were one of the first to apply machine learning to analyse a large body of gaming data....

[Read more on page 46](#)

### F&N and Nanyang Technological University set up joint lab to develop new ingredients and greener packaging

Singapore – Nanyang Technological University, Singapore (NTU Singapore) and Fraser and Neave, Limited (F&N) have jointly opened a laboratory in Singapore to develop innovative products and recipes for its range of beverage products....

[Read more on page 41](#)



Thermodynamic properties of hevein investigated by Lobachevsky University scientists

[Read more on page 62](#)

Battle against antibiotic resistance

[Read more on page 67](#)

Demystifying electric cars

[Read more on page 70](#)

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## AI-powered WiseEye: How wise is it?



*Prof. Calvin Wong explains that the WiseEye system is equipped with a camera that can move back and forth on a weaving machine to capture images of the whole width of woven fabric*

**Hong Kong** – Small defects in garments reflect big problems in quality control. Defects may come from fabrics. In the textile industry, one of the challenges is to ensure that defect free fabrics are used to produce high-quality products. While fault detection relying on the naked eye is rather inconsistent and inefficient, automated systems can be expensive and unreliable.

Prof. Calvin Wong of the Institute of Textiles and Clothing at The Hong Kong Polytechnic University has discovered an impactful solution for the industry. He led the Apparel Artificial Intelligence Research Team to integrate AI, big data and deep

learning technologies in development of the WiseEye, an intelligent fabric fault detection system.

But exactly how smart is WiseEye? It can detect some 40 common fabric defects on different weaving structures in solid colours with exceptionally high accuracy at a resolution of up to 0.1 mm/pixel.

WiseEye was tested in a manufacturing environment for over six months with remarkable success. The total loss and wastage due to faulty textiles was reduced by 90 percent. Considerable savings and improvement in production efficiency

were also achieved.

“WiseEye is not only a technological breakthrough that meets industry needs; it also marks a significant milestone in the quality control automation for the traditional textile industry,” Prof. Wong remarked.

The WiseEye system comprises various components that perform different functions: A high-powered LED light bar that illuminates the fabric and a high-resolution charge-coupled device camera is mounted on a rail to capture images of the whole width of the fabric during the weaving process.

Thousands of yards of fabric data was stored in the system to train up WiseEye. Captured images during the weaving process are fed into an AI-based machine vision algorithm to detect fabric defects. An associated computer system then receives the real-time information to generate analytical statistics and alerts as necessary.

The research team plans to further develop the system to detect defects in fabrics with complicated patterns such as stripes and checked patterns. The ultimate goal is to improve the quality of textiles and clothing for consumers.