



UPM researchers to send optic fibre samples to space

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TWO optic fibre samples built by three Universiti Putra Malaysia (UPM) researchers will make their way to space next year to detect space radiation outside and inside the International Space Station (ISS).

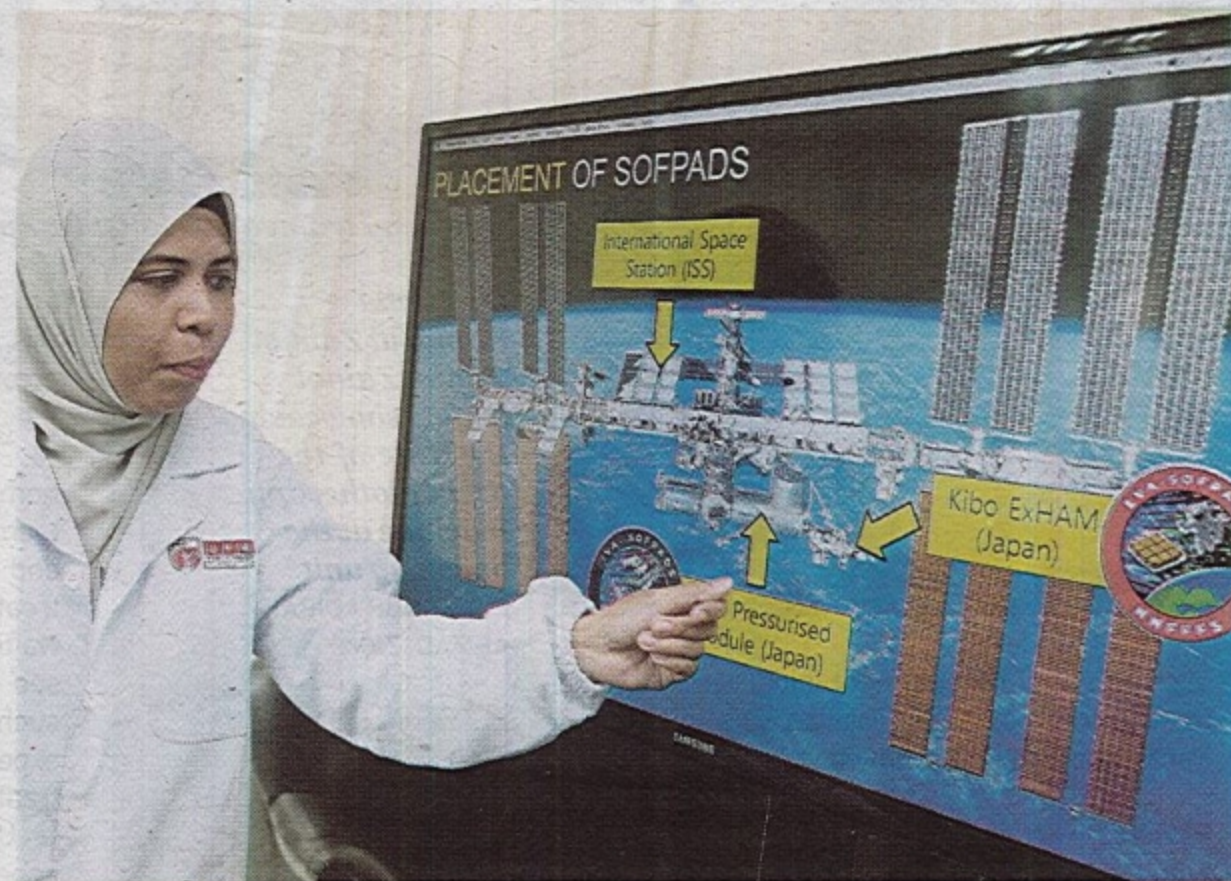
The three researchers, who took one and a half years to build E-SOFPADS and I-SOFPADS (Smart Optical Fibres for Passive Dosimetry in Space), are Dr Noramaliza Mohd Noor, Associate Professor Dr Fathinul Fikri Ahmad Saad, both from the Centre for Nuclear Diagnostic Imaging, and Dr Nizam Tamchek from the Faculty of Science.

At a media briefing at the Faculty of Medicine and Health Sciences, UPM, recently, Noramaliza said these samples are capable of observing fibre optic reactions to radiation astronauts were exposed to while working on the ISS.

"Astronauts who worked on the ISS are exposed to high levels of radiation and at risk of contracting cataracts, osteoporosis, cancer and skin burns.

"Also, sometimes, when free radicals interact with our body, they will change the structure of our DNA," said Noramaliza, who is also UPM Centre for Diagnostic Nuclear Imaging SOFPADS chief researcher.

The samples will be sent from Japan



Dr Noramaliza Mohd Noor explaining the objectives of the two optic fibre samples — E-SOFPADS and I-SOFPADS — during the media briefing session.

Aerospace Exploration Agency (Jaxa) to ISS in February 2019.

"The E-SOFPADS will be in space for 360 days while the I-SOFPADS will detect radiation within the ISS for 300 days," said Noramaliza, after which, the samples will be returned to UPM for analysis.

She added that the dosimeter of optical

fibres will be exposed in space under various conditions and stored in the Kibo module, a Japanese science module developed by Jaxa for ISS.

"After samples return to Earth, Malaysian researchers will verify the usability of the passive dosimeter in space," she said.

Both E-SOFPADS and I-SOFPADS were

handed over by UPM researchers to Jaxa in Tsukuba, Japan on November 2.

Noramaliza said the sample handover was based on the agreement of Kibo utilisation for long-term material exposure experiment using Exposed Experiment Handrail Attachment Mechanism (EXHAM) on Kibo Exposed Facility, along with inner vehicle experiment in Kibo pressurised module using Passive Dosimeter for Life-science Experiments in Space (PADLES).

It was in October this year that Jaxa and UPM finalised this agreement.

Noramaliza said the experiment was proposed by the UPM researchers to demonstrate utilisation of the SOFPADS, which was organised under the leadership of the National Space Agency (Angkasa).

Jaxa, who acts as only one of the ISS partners in Asian region, hopes that the collaboration of Kibo utilisation with Malaysia will contribute to development of space technologies in the Asia and promote a mutually beneficial relationship among the Asian space agencies.

"If the results of both SOFPAD tests return positive, they can be used in producing spacesuits for astronauts," she added.

The building of the samples was done in collaboration with Universiti Malaya, Multimedia University, Sunway University and Angkasa.