

# L'ORÉAL

## L'Oréal Research and Innovation brings its expertise to the International Space Station

News Release

Clichy, 22 August 2019 - Today the International Space Station welcomes on board Mini-EUSO (Extreme Universe Space Observatory), a next generation telescope that studies earth and space. Mini-EUSO is developed by a research team from Riken (the Japanese Institute of Physical and Chemical Research) in collaboration with L'Oréal Research and Innovation. Thanks to L'Oréal R&I's expertise in skin imaging and data processing, the joint research improves the quality and analysis of images obtained with this telescope.

The observation of space and skin requires sophisticated imaging devices. For space researchers from 16 nations who participated to the EUSO project, the objective was to catch rare phenomena of terrestrial or space origin and create a dynamic map of various events occurring in the earth's atmosphere. To detect and study this unknown matter, cosmic rays or interstellar meteorites that reach the earth, the EUSO group at Riken developed a new detector based on multi-wavelength imaging: <https://jemeuso.riken.jp/missions/mini-euso/>

The aim for L'Oréal was to develop a full-face hyperspectral imager to be used in vivo to better characterize and understand skin features such as color, pigmentation disorders, and skin lesions. The joint work ranged from the development of imaging systems and detectors, to data processing and development of algorithms for feature extraction and identification.

Two devices, one for the skin, one for space were developed in parallel. Although detectors are distinct in aim and realization, many algorithms developed by L'Oréal R&I for skin have also been applied for space. Analyses such as local pattern recognition and image segmentation used to define specific areas on the human face and to determine skin features can equally be applicable to Mini-EUSO data coming from the ISS.

*"The collaboration with L'Oréal has been extremely fruitful and interesting. Working with researchers in a field apparently far from space research has been very stimulating. Indeed, research methodology and data acquisition at L'Oréal shares the complexity and the rigor of our physical research,"* said **Pr. Casolino, Head of the EUSO group at Riken.**

The three year collaboration between Riken and L'Oréal R&I continues to improve the device for skin application and generate enough data to decipher skin physiology and propose high-performance cosmetic products. This collaboration highlights L'Oréal R&I's pioneering role in understanding skin, and its capacity to integrate advanced technologies from other fields of expertise.

### **About Riken**

*RIKEN is Japan's largest and most comprehensive research organization for basic and applied science and a world leader in a diverse array of scientific disciplines.*

*For nearly a century since its foundation in 1917, RIKEN has fostered pioneering, innovative research in fields spanning the entire range of the natural sciences, from developmental biology and neuroscience to quantum physics and computer science.*

*Today, RIKEN encompasses a network of world-class research centers across Japan, with main campuses in Wako, Tsukuba, Yokohama, Kobe and Harima offering state-of-the-art facilities that rank among the best in the world. This high quality, high-performance research environment, combined with a uniquely bottom-up approach to scientific innovation, has enabled RIKEN to foster an environment in which researchers are able to thrive.*

### **About L'Oréal**

*L'Oréal has devoted itself to beauty for over 100 years. With its unique international portfolio of 36 diverse and complementary brands, the Group generated sales amounting to 26.9 billion euros in 2018 and employs 82,600 people worldwide. As the world's leading beauty company, L'Oréal is present across all distribution networks: mass market, department stores, pharmacies and drugstores, hair salons, travel retail, branded retail and e-commerce.*

*Research and innovation, and a dedicated research team of 3,885 people, are at the core of L'Oréal's strategy, working to meet beauty aspirations all over the world. L'Oréal's sustainability commitment for 2020 "Sharing Beauty With All" sets out ambitious sustainable development objectives across the Group's value chain.*

*For more information: <http://mediaroom.loreal.com/en/>*

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