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Multi-wavelength optical spectroscopy for non-invasive assessment of skin hydration

Meha Qassem

City University of London, UK

Skin hydration relates to the state of multiple skin constituents and aspects, and plays an important role in preserving skin integrity. The current standard measurement of skin hydration is based on electrical capacitance probes, but these suffer certain drawbacks as a result of their indirect relationship with dermal water content and need for controlled working environments. In recent years, Near Infrared Spectroscopy (NIRS) has been reported as a possible alternative due to its high sensitivity to hydrogen bonding, accuracy of moisture determination, and direct correlation with water content. Our latest research on the development of multi-wavelength optical sensing for assessment of skin hydration promises rapid-use and more accurate measurements with the convenience of portability and reduced cost.

Speaker Biography

Meha Qassem is a lecturer in Biomedical Engineering in the Research Centre for Biomedical Engineering (RCBE) at City University of London. Her research interests are focused on the areas of optical spectroscopy, bio-sensing, and medical electronics, with various publications in world-class journals relating to these subjects. She has worked extensively in the area of Near Infrared (NIR) Spectroscopy in applications relating to skin hydration and barrier function, as well as in fluorescence and biomedical optics in areas of mental health and hemodynamic monitoring.

e: meha.qassem@city.ac.uk



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