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EMULSIONS STABILIZED BY A NON-IONIC SURFACTANT OR/AND TiO₂ PARTICLES: A MULTISCALE APPROACH TO EXPLAIN THE SENSORY PERCEPTION AND THE RESIDUAL FILM PROPERTIES

Terescenco Daria^a, Savary Géraldine^a, Hucher Nicolas^a, Picard Céline^a

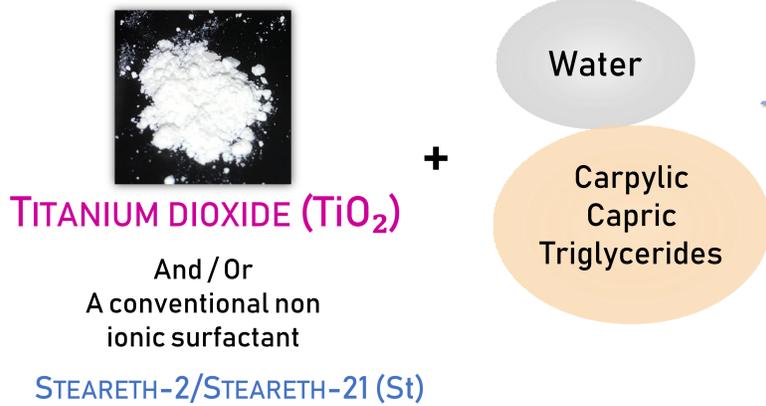
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HOW TO UNDERSTAND THE ROLE OF THE SOLID PARTICLES ON THE EMULSION APPLICATIVE PROPERTIES?

1 BY SELECTING ADAPTED RAW MATERIALS AND DEFINING AN OPTIMAL COMPOSITION OF THE FORMULATED EMULSION

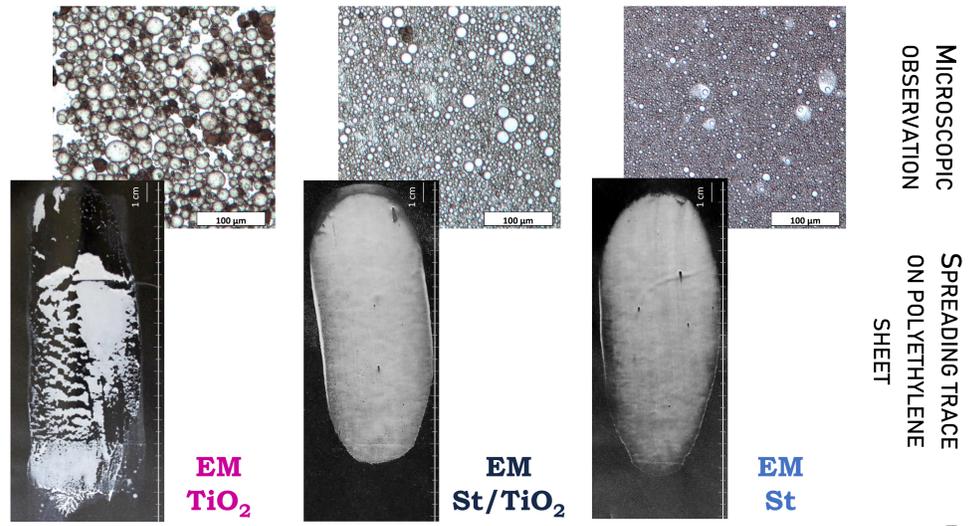
2 BY CONFIRMING THE PHYSICO-CHEMICAL STABILITY OF THE SYSTEMS

Stabilising system:

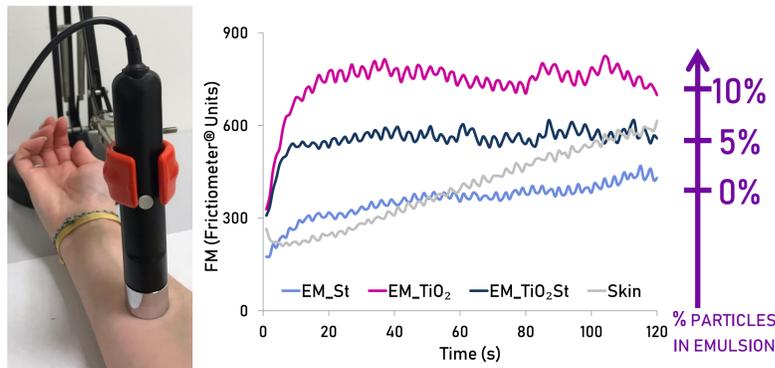


STABLE AND TOTALLY EMULSIFIED SYSTEMS

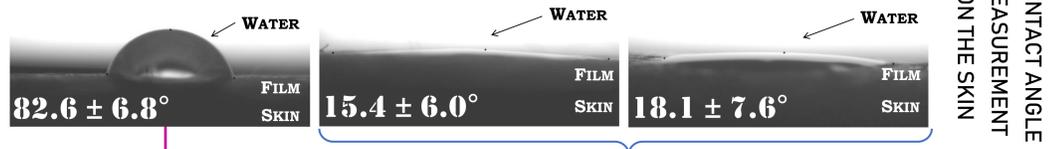
THE DROPLET SIZE AND DISTRIBUTION ARE AFFECTED BY THE EMULSIFYING SYSTEM



3 BY INVESTIGATING THE PROPERTIES OF THE RESIDUAL FILM ON THE HUMAN SKIN AND SYNTHETIC SKIN MODELS



FRICITION PARAMETER INCREASES WITH THE INCREASING QUANTITY OF THE SOLID PARTICLES

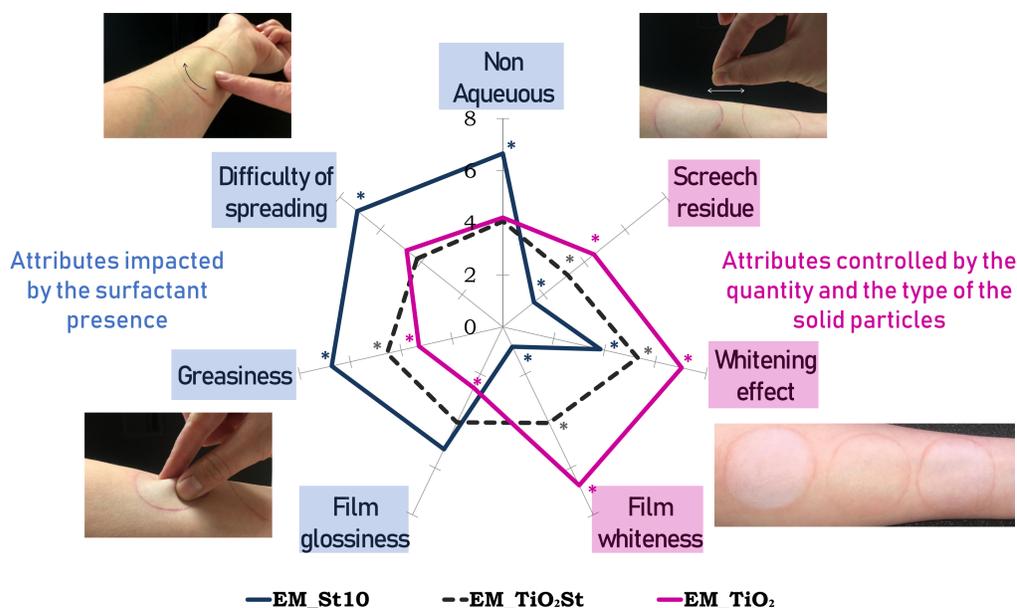


Emulsions containing a conventional surfactant form a highly hydrophilic film.

On the contrary, the emulsion stabilised exclusively by titanium dioxide is more hydrophobic, approaching the values of the human skin.

THE PRESENCE OF THE SURFACTANT IN THE EMULSION GOVERNS THE HYDROPHILIC PROPERTIES OF THE RESIDUAL FILM

4 BY ESTABLISHING THE SENSORY PROFILE OF THE SYSTEMS



CONCLUSION

SOLID PARTICLES PLAY AN IMPORTANT ROLE ON THE APPLICATIVE PROPERTIES OF THE EMULSIONS:

- INDIRECTLY
 - By modulating the droplet organization and distribution with an impact on the spreading;
 - By interacting with other raw materials and by modifying their perception;
- DIRECTLY
 - By leaving a specific white, screechy, hydrophobic residual film after the emulsion application.