## Odile SONNEVILLE-AUBRUN L'OREAL R&I, FRANCE – Advanced Research

Physical-Chemistry & Deposition Science / Science & Process of Formulation Invention Domain

## "Science driven formulation for sustainable & desirable cosmetic products"

Over the last ten years, the cosmetic industry has undertaken an in-depth transformation to propose innovating and desirable products yet being able to reduce its environmental impact across its entire value chain. This transformation has changed the way we design and make our products with sustainability as a fundamental requirement, and still strengthening our commitments for the coming years.

Rigorous scientific approaches and knowledge of our products remain a cornerstone of this shift towards even more sustainable & desirable products.

As a matter of fact, the qualification of our ingredients on key criteria such as origin (biobased, abundancy, circularity), transformation processes... with quantitative indicators is needed to guide formulators, to fix ambitious sustainability targets and to measure our progress. Furthermore, the systematic characterization of our ingredients based on physical and chemical parameters related to application properties and our ability to model them are major assets to realize this green shift for innovative & performing products.

Besides these two aspects, our success relies on a deep understanding of major cosmetic functions such as long lastingness, optical effects, care, sensory...as well as our capacity to control them through the right assembly of ingredients from bulk to deposit.

Finally, the reduction of water consumption upon products usage as well as scientific discoveries on skin and hair raises new formulation challenges to tackle to prepare the future of cosmetics.