



## Report on the 1st Plasma Cosmetic Science Meeting

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Advances in plasma medicine, and particularly those concerning dermatology and microbial decontamination of biological surfaces, have recently led several laboratories to take an interest in the applications of atmospheric pressure cold plasmas to cosmetics (e.g. [1][2][3]), a field in which the use of "physical" principles (e.g. weak current, light, ultrasound, lasers) is more widespread. At the same time, there are already plasma-based systems for skin treatments on the market, many of which use thermal effect mediated by plasmas whose action, linked to local energy delivery and increase in temperature [4], is fundamentally different from that of non-equilibrium cold plasmas. In addition, the treatment using thermal plasmas, usually involve damages to healthy skin (mostly erythema and micro-burns) which should not be sought in the case of daily cosmetic treatments.

Considering the above, it appeared important to discuss what could be transferred from achievements in cold plasma medicine to cosmetics, to clarify the contours of what "plasma cosmetics" can be and to appreciate what are the market needs in this sector. That also extends to decontamination and to packaging for cosmetic products as used plasma medicine sources can also serve to induce surface modifications of interest in this domain. To this end, the first meeting on Plasma Cosmetic Science (IMPCS1) was organized in Orléans, France, in November 2019. In this presentation, after recalling the general context, we will address the main themes dealt with during this meeting and we will set out the main lessons learned from the presentations and discussions concerning the future opportunities for Plasma Cosmetics.

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### References

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