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## Mobile dental photography (MDP): A new era in dental documentation

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## MOBILE DENTAL PHOTOGRAPHY (MDP): A NEW ERA IN DENTAL DOCUMENTATION. WINNER OF BEST OF CLASS TECHNOLOGY AWARD.



During the American Dental Association meeting in Atlanta (October 2017) SmileLite MDP won the Best of Class Technology Award. What is this device and how can we use it in dentistry?

Nowadays, photography is becoming more powerful in dentistry and dentists are trying so hard to take good pictures for different purposes. For that reason a professional camera with all the accessories (ring flash, twin flash, macro-lens...) is needed, but not everyone can afford it or knows how to use it in the right way.

Smart phones have come a long way in digital photography due to the fact that those cameras have some interesting features and characteristics that are beneficial for dental photography:

- 1- Very small aperture due to the small size of the camera and its diaphragm. Therefore, a very high depth of field is achieved on a regular basis.
- 2- Good ISO settings adding more light sensitivity to the camera with low noise.
- 3- Rather good resolution to show small details.
- 4- Large display to preview and view the images, especially when using smart phones with large screens.
- 5- Battery autonomy that allows working for many hours.
- 6- The white balance, exposure, focus, ISO, metering and the shutter speed can be modified manually in some cameras.
- 7- Smart phones are light and easy to operate.



Fig. 1: Anterior picture with black contrastor.

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Since everyone has a mobile phone with a great camera, all our focus in the last two years was to improve the quality of the pictures taken by this simple device, and this is how the MDP (mobile dental photography) idea was born.

Whether we are using a Mobile Phone Camera or a DSLR Camera, the following accessories are always needed:

Mirrors, retractors, contrastors and light.

Light is a fundamental part of photography.

Different types of lighting were tested to achieve the desired outcome.

Two main types of light were chosen: Daylight and an artificial light (Smile Lite).

In the pursuit of a universal color matching system, the Smile Lite (Smile Line, Switzerland) was developed to provide ideal light conditions (5,500 K = daylight) and polarized light in one unique device.

For MDP we were using 1 or 2 Smile Lite devices for one picture. For example to have something equivalent of the twin Flashes for DSLR pictures we can use two Smile Lites, one from each side.

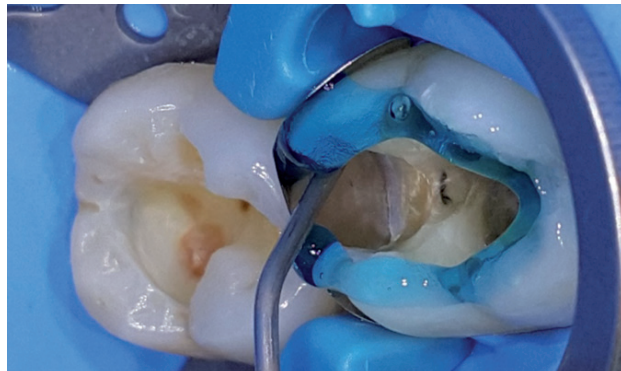


Fig. 2: Posterior picture, direct view.



Fig. 3: Anterior picture with the details of the incisal halo.



Fig. 4: Smile Lite MDP with the diffusers and the polarizer. Made by Smile Line and powered by Styleitaliano.

The main problem with Smile Lite is that you need an assistant to help positioning the light and the pictures are not always reliable because of the distance changing between the two Smile Lites in every picture.

That's how we got the idea to make a new device, with the same light produced by Smile Lite (5500 k), but with a standard distance between the lights, two diffusers and a polarizer. The system is very easy to use and gives repeatable results: This is the new Smile Lite MDP. (Fig: 4,11)

With Smile lite MDP we can take all kind of dental pictures:

Anterior pictures (Fig: 1,3,5,9)

Posterior pictures (Fig: 2,6)

Microphotography

Polarized pictures (Fig: 7)

Double polarized pictures (Fig: 10)

The procedure is so easy:

Plug the Smile Lite MDP, open your mobile camera, zoom, focus, and take the picture, most of the time in Auto Mode.

The results are very promising; by comparing pictures taken with professional cameras (DSLR) and Smile Lite MDP, the difference is getting smaller. (Fig: 8)

With the evolution of mobile cameras, the future of MDP is becoming brighter.



Fig. 5: Anterior picture with diffusers.



Fig. 6: Posterior picture with a mirror.

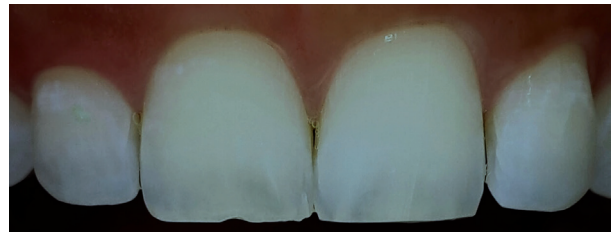


Fig. 7: Polarized picture.

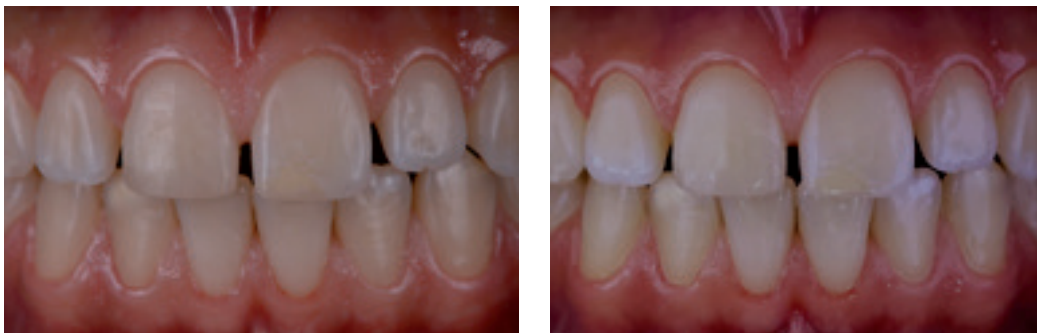


Fig. 8: One of these pictures is taken With Smile Lite MDP, the other one with a professional camera (DSLR). The difference is not obvious.

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Fig. 10: Double polarized picture.

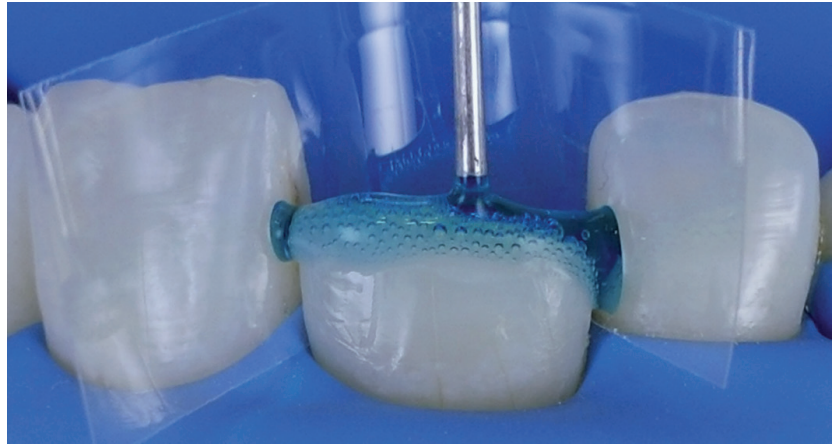


Fig. 9: Anterior picture with Smile Lite MDP during a restorative procedure.



Fig. 11: Smile Lite MDP with the mobile phone in place.



#### Prof. Louis Hardan

He graduated dentistry in 1989 and continued his post-doctoral education at Saint Joseph University. He completed his PhD in oral biology and materials in 2009.

At the present, he is head of the restorative and esthetic department at Saint Joseph University Beirut-Lebanon and owns a private practice in his home town Byblos.

He is an active international Styleitaliano member.

Prof. Hardan has many publications in international journals and has given several lectures on esthetic, restorative dentistry and mobile dental photography.