

## Unique wrinkle reduction treatment with combined fractional diode device and bipolar radiofrequency

Reported by KM Lam 林嘉雯

---

Date: 16 November 2007  
Venue: Conrad Hotel, Hong Kong  
Speaker: Dr. Vince Afsahi,  
President and Clinical  
Dermatologist, South Coast  
Dermatology Institute of Newport  
Beach and Tustin, California, USA  
Organiser: Hong Kong Society of  
Dermatology & Venereology

The demand for non-invasive procedures for skin tightening and wrinkle reduction is increasing. Thus, a variety of light-based therapies have been reported. Although the results are less impressive than those of surgical facelifts, adverse effects are few and post-treatment recovery time is short. A major limitation of light-based therapies is that optical energy is absorbed by epidermal melanin, thus limiting the depth of light penetration, particularly in patients with dark skin. Another limitation is that wrinkles respond minimally to this treatment as collagen contains no chromophores to absorb the light.

To overcome these shortcomings, selective electro-thermolysis, in which electrical energy from radiofrequency (RF) current selectively heats the target tissue without damaging the epidermis, has been introduced. RF current placed on the skin penetrates the epidermis and

moves to tissues that offer high electrical conductivity. Since conductivity varies inversely with temperature, cooling the epidermis guides the RF current to deeper tissues which, when pre-heated, has higher conductivity and thus a greater propensity of receiving the RF current.

The Polaris WR™ Applicator (Syneron Medical Ltd., Yokneam, Israel) is a combination of 900 nm diode laser and RF technologies. The WR applicator can also be found on the Galaxy™, eLaser™, and eMax™. This WR device delivers optical energy to pre-heat the target and RF energy to heat the target (without injuring the epidermis) even more to a temperature that exceeds its therapeutic threshold. This combination of technologies is called electro-optical synergy (ELOS). The Polaris WR has shown efficacy and safety in the treatment of facial rhytides, skin laxity, and skin texture.

### **Learning points:**

Combined fractional diode and bipolar radiofrequency device has been developed to improve facial rhytides, skin laxity and skin texture. It delivers optical energy to pre-heat the target and also radiofrequency energy to heat the target without injuring the epidermis, even more to a temperature that exceeds its therapeutic threshold.