

## 6<sup>th</sup> World Congress on Nanomaterials

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**Nanotheranostics and Human Skin**


A recent article on Photodynamic therapy (PDT) for treating skin infection (in review) considers a range of technologies effective in eradicating microbes without building up new resistance, alongside horizontal and vertical infection control strategies. PDT features in current international dermatological guidelines and is particularly recommended for the treatment of Acne, Warts and Cutaneous Leishmaniasis. However, limitations on sensitivity, specificity and accessibility have been addressed in the literature by conjugation of photosensitisers to cationic molecules, antimicrobial peptides, antibodies, targeted antibiotics and nanomaterials. Nitrous oxide, gold nanorods, polyvalent ligand strategies and their resulting Photodynamic and Photothermal effects are considered. Adjunct illumination

to modulate or monitor treatment with nanomaterials–bioluminescence-is also discussed and more widely researched applications of nanotheranostics reviewed.

### **Speaker Biography**

Alison Mackay studied Physics and Medical Physics culminating in a PhD thesis entitled ‘Estimating Children’s Visual Acuity with Steady-state Evoked Potentials’ then registration with the UK health and care professionals council as a Clinical Scientist. The software she developed and evaluated for her doctorate is now the subject of U.S. patents, and its report is highly cited in the academic literature. In the interim, Alison has worked clinically in Ophthalmology, Urology and Dermatology while performing clinical research, and translational studies into diagnostic methodology.

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