

7th International Congress on Dermatology and Trichology12th World Congress on Women Health, Gynecology and Breast Cancer Research8th International Conference on Psychiatry and Psychological Disorders

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Liquid crystals for lesion deformities

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A miniaturized spectro-polarimetric (SP) imaging system for skin imaging will be presented that uses liquid crystal (LC) devices to control the wavelength and the polarization. When linearly polarized light illuminates the skin, part of it is backscattered by dermal layers and rapidly depolarized by birefringent collagen fibers. As the photon penetrates deeper into the tissue, it will experience more and more scattering events; hence the depolarization depends on the penetration depth. The penetration depth and amount of depolarization depends on the wavelength of the incident light. Hence there is strong polarization and wavelength dependence of light scattered from the skin, meaning that SP imaging is required. LC devices help grabbing polarization and spectral images almost in real time; hence they have the potential of making such biomedical optical imaging systems a reality in clinical usage. Preliminary results of imaging skin abnormalities will be presented and discussed.

Speaker Biography

Aharon holds a PhD in Electro-Optics, Specializing in the field of liquid crystal devices for bio-imaging systems and computational electromagnetism. He was involved in international projects in the field of electromagnetism at the GSI, the particle accelerator in Darmstadt, Germany. While at the Academy of Sciences of the Czech Republic, he contributed to the field of nonlinear fiber optics. His essays and articles based on his research have been published in international scientific journals. He has lectured at several professional conferences and has published over two dozen papers and articles. He was part of a research team at the CTO Department of Elop (Elbit systems), managed projects, and later had a position at the Advance Development Group as part of the CTO of KLA-Tencor USA (Nano and Microelectronics). He managed a futuristic project at the Advanced LAB. He is also the inventor of optical devices such as the DOSI method in his PhD and SGPI and LMB methods in the frame of Patternox. He was Meopta's representative and mediator in Samsung's CTO and LG's CTO - Korea headquarters.

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