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Colin Lewis
Editor

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Introduction

What I find particularly fascinating about our Conference each time (now in its fifth year) is the many diverse ways in which optics and photonics contributes to the fight against terrorism and helps the authorities defeat crime. This year was no exception.

Topics covered ranged from forensics, stand-off detection of explosives and drugs, image enhancement, and optical encryption, to processing and data fusion. Of particular interest is the growth in the development of hitherto 'difficult' spectral regions to access such as THz for the stand-off detection of concealed objects. Since methods for the generation of radiation in this spectral regions has become more accessible, the potential benefits of these technologies are being investigated by groups of scientists around the world. To date, as we have seen, the full value of what the use of this spectral region for security applications remains to be proven.

Raman spectroscopy, despite its lack of sensitivity compared with other spectroscopic techniques, is growing in use for both local and stand-off detection of illicit substances; not least because it provides the opportunity to carry out vibrational spectroscopy through windows.

As part of our conference we include discussion groups and this year we held two on the advances in video analytics (intelligence surveillance) and how to improve long range optical surveillance (i.e., beating the effects of atmospheric turbulence). Video analytics has seen a great deal of resources devoted to it over many years throughout the world, with in many people's view, limited success. Some real successes have, however, emerged into the real world. These include the automatic reading of vehicle number plates (ANPR) which, for example, is used daily for applying the London vehicle congestion charges, and more recently, the remote recognition of faces for access control etc. However, our meeting this year has shown that useable technologies are really beginning to emerge such as the development of robust tracking algorithms and the identification of left luggage. To a large degree these successes can be attributed to the availability of realistic test data such as I-LIDS, the development of which was discussed at our conference.

Achieving better quality images at long range remains challenging, but we are beginning to see real successes at reducing the effects of atmospheric turbulence and thereby increasing the information content that can be extracted from optical images.

Finally, the subject of automatically identifying "suspicious" behaviour at stand-off was discussed; which is a topic that is generating considerable interest around

the world. The jury is still out as to whether the methodologies being pursued offer any real advantages, but we will have to the opportunity to gauge progress at future conferences.

We hope that you enjoy reading these Proceedings and if so look forward to seeing you at our next conference in France September 2010.

Colin Lewis