

## Abstract 4

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### **SIMULTANEOUS DETECTION OF MULTIPLE FLUORESCENT DNA PROBES**

**Pat Pollard, Theresa Wilson, Catherine Hunter, Ruth Hamill, Mirela Coke and Radharkrishna Prabhu**

*School of Life Sciences, The Robert Gordon University, Schoolhill, Aberdeen, Scotland, AB10 1FR*

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Many modern methods of molecular biology rely heavily on fluorophore dyes and this dependence is growing with increasing use of microarrays and real-time PCR. Fluorophores are already used heavily in sequencing, gene analysis and differential display. However, a major disadvantage of fluorophore dyes is that they have broad overlapping spectra which severely limit the number of dyes that can be used simultaneously. Generally, only four or five dyes (DNA probes) can be used at once to interrogate genomic DNA or mRNA and this limitation has led to the development of the extremely expensive microarray technology. The work described here, including example data, addresses this technology limitation through the attachment of multispectral encoded beads (fireballs) to single stranded DNA (ssDNA) for use in some of the main technologies of modern molecular biology.