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Upregulating nano particle based Security Tags

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Ravi is directly involved in the new company selection process at XL TechGroup as well as non-US business development for existing XL TechGroup companies, including TyraTech. He has been with XL TechGroup since February 2004. Ravi is a recognized authority in the field of in-vitro diagnostics. In this regard, from 1985 to 1992, he was the section manager for retroviruses, tumor markers and PCR diagnostics at Hoffman La Roche. Ravi has co-founded a number of companies, including Specialty Biosystems, Inc. a venture of Specialty Labs, one of the largest independent reference laboratories in California, AccuDx Inc. in California, OncQuest in New Delhi, and Specialty Laboratories International inc. He has also been on the advisory board of several private and public organizations, including the World Health Organization. In the academic world, Ravi has been Assistant Professor at the University of Maryland School of Medicine, Associate Professor at the City of Hope Medical Center in California, and Adjunct Professor in Virology at Rutgers University in New Jersey. As a virologist and molecular biologist, Ravi has over 50 refereed publications to his credit. Ravi received his undergraduate training in Biological Sciences from the University of Kerala, India and completed his MSc and Ph.D in Applied Biology [Cancer Research] from Bombay University. He did his postdoctoral training in Genetics at The Jackson Laboratories Bar Harbor, Maine, and in Medical Virology at Duke University in the USA.



ABSTRACT

Authentication of products is a primary requirement for retaining credibility of services and claims. Due to wide spread fraudulent counterfeiting practices throughout the world, customers are commonly tricked to buying inferior quality products which carry "high-end" labels. In spite of government claims on control of counterfeit products, markets in India, China, Thailand, Malaysia, Indonesia and Philippines, just to name a few are filled with brand name products of unknown origin. Advances in sophisticated duplication technologies have average consumer incapable of differentiating the duplications from the original at the time of purchase. The products range from consumer goods to security papers and currencies. Current protection tools such as barcodes, holograms, UV sensitive dyes, magnetic imprint etc have not achieved the expected goals. The reasons are very simple, these technologies are easily duplicated and the security dimensions are limited. There is an unmet need in anti-counterfeiting technology market to have security codes that are invisible to naked eye and are multilayered to prevent easy duplication. AccuDx, a California based technology company has developed technologies and products to meet this market need. Certain rare-earth elements possess unique property of up regulating incident infra-red energy to release visible light to specific spectra. Thus one can create particles that generate different colors such as red, blue, green and yellow. Infra red source can be as simple as our TV remote control. AccuDx has developed unique chemistries that allow particles to interact specifically with different matrices such as paper, polyester, paints, ink etc. thus creating unique and identifiable spectral imprints. For example, by mixing four different nano upregulating phosphates, one can create up to 100 million different codes that are part of the product matrix itself. We have created non-counterfeitable products for security papers, currencies, sports goods, yarn, labels and ink. The advantage of this technology includes ease of application, uniformity within the whole products, non-bleaching and user friendly. The major areas of application in India include security papers, currency, high end textile products, identification documents (personal, automobile, military) and labels.