Complete Print-Read-Decode Prototype of Upconverting Inks for Security Printing

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This research involves developing a complete upconverting-based printing system, including upconverting nanoparticles, ink formulation and printing of inks as covert markings, followed by reading and decoding of the printed covert marks using a smartphone system. The individual system components will be described followed by demonstration of how the individual components are integrated together. In addition, some of the other research projects in SPACT will be discussed.

Jeevan Meruga is a Research Scientist in Materials and Metallurgical Engineering at the South Dakota School of Mines and Technology/SPACT. He got his PhD in 2013 from MET Dept. SDSMT and his Master's in 2009 in Mechanical Engineering and Management from University of Glasgow, Scotland. His areas of expertise are security printing, nanoparticulate ink formulations and characterization techniques and direct-write techniques.

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