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(57) Abstract :
ABSTRACT METHOD FOR MICROFABRICATION OF ONE-DIMENSIONAL (1D) PHOTONIC CRYSTAL LAYERED POINT-OF-CARE DEVICE FOR DETECTION OF BIOMARKER(S) OF RENAL DYSFUNCTION The present invention provides an approach for microfabrication of one-dimensional (1D) photonic crystal array structured point-of-care (POC) medical device for detection of low molecular weight biomarkers (Creatinine/Cystatin C/BTP/B2M), indicative of renal damage. The present invention chooses novel inorganic material combinations of low (Al_2O_3/SiO_2) and high (Cu_2O/CuO) refractive indices are optimized for physico-chemical conditions to ensure transparency in the required wavelength range of metabolic analytes, robustness with resistance to environmental parameters and easy fabrication by spin-coat method reusability with multiple passes/cycles, cost-effectiveness and material conservation, stability and reproducibility of analytical sensitivity, and point-of-care device in the affordable range and hence technology penetration to lower economic strata of the society.

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