My Resilient Journey in Harnessing DNA Nanotechnology and Nanomaterials for Next-Generation Diagnostics

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This talk will detail my resilient journey in the field of DNA nanotechnology and nanomaterials, highlighting my commitment to advancing next-generation diagnostics. Throughout my research career, I have navigated diverse international landscapes, collaborating with esteemed scientists and institutions across multiple countries. My research combines DNA nanotechnology, materials science, analytical and supramolecular chemistry to design DNA-based nanoswitches that mimicking Nature's switching mechanisms, undergo conformational changes upon specific binding with the cognate targets, enabling their detection. Using advanced synthetic biology tools like CRISPR and innovative nanomaterials, I design hybrid systems with enhanced sensing capabilities, applicable to diagnostics, cell imaging, and drug delivery. Through my experiences, I hope to encourage others to embrace the power of persistence in the pursuit of knowledge and discovery.