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Posters

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**NOVEL TECHNOLOGICAL SOLUTIONS FOR CURRENT
CHALLENGES IN BIOTECHNOLOGICAL, ENVIRONMENTAL,
DIAGNOSTIC DEVICE AND SENSORS INDUSTRIES SECTORS:
EFFECTIVE DELIVERY OF TEMPERATURE-SENSITIVE
BIOLOGICALLY ACTIVE MATERIALS (ENZYMES, CELLS,
BIOTHERAPEUTICS, PHAGES) AND POLYMERS ON THE METAL
SURFACES AND SUBSTRATE**

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Abstract

Localized delivery of temperature-sensitive biologically active materials (enzymes, cells, biotherapeutics, phages) on the surfaces of devices are technologically challenging. Many of the limitations associated with realizing the full potential of localized delivery are process related. We present summary of existing to date industry related challenges and preliminary results that demonstrate the efficacy of a novel coating technique- a versatile, single-step, controllable process- that utilizes the incident kinetic energy of impinging particles, dissipated as transient heat at a surface during shot peening, to form a wide variety of coating compositions including bioactives and polymers/polymer-based composites/ into coatings on substrate surfaces. Our preliminary results demonstrate that thermally sensitive agents remain active and potent through the process. Such technology could be exploited and will benefit greatly for various environmental and biotechnological applications.
