Biodegradable 3D-Printed Scaffold coated with Biopolymer and Insect repellent, method of preparing and uses thereof

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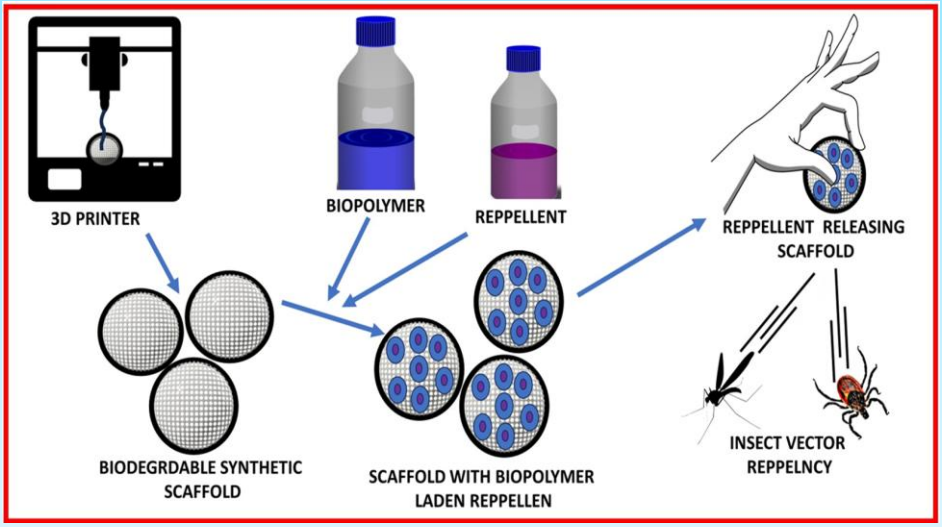
About the Technology: Biopolymer encapsulated sustained release of Mosquito repellent coated on a 3D printed bio-scaffold.

Technology ID: PM-TT-IM-2026-Apr-55
Lead Inventor: Dr. Paramasivan Rajaiah
Institute: ICMR - National Institute Of Vector Control Research
Technology Domain: Medical Device
Disease Area (Broad): Vector Borne disease - Dengue, Malaria, Zika.

Need and utility of the Technology from Public health perspective: The biodegradable 3D-printed scaffold offers a safer, long-lasting mosquito repellency solution without direct skin contact, supporting effective prevention of mosquito-borne diseases in public health settings.

Technology Readiness level (TRL):

TRL-4: Validated at in house laboratory



Validation Status and Study Outcome:

- Inhouse Validation –Complete
- Efficacy Outcome: Showed significant spatial repellency, with reduced mosquito attraction and improved repellency compared to commercially available formulations.

Market Potential: Growing demand for safer, long-lasting, and skin-friendly mosquito repellents creates strong potential for adoption in public health.

Unmet need: Lack of safe, long-lasting mosquito repellents that avoid direct skin application , especially for vulnerable populations.

Publication: NA

IP Filing: Patent Application-No. 202511082847