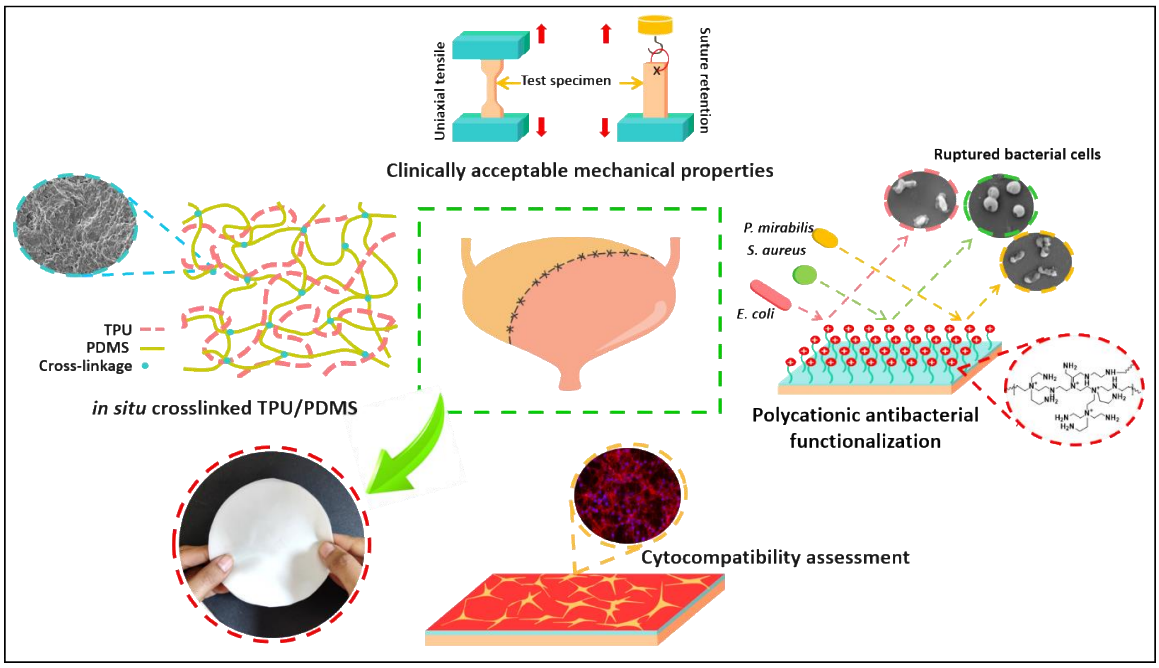
Swati Sharma, Anil Mandhani, Suryasarathi Bose, Bikramjit Basu, Dynamically crosslinked polydimethylsiloxane-based polyurethanes with contact-killing antimicrobial properties as implantable alloplasts for urological reconstruction; **Acta Biomaterialia** (2021).

Graphical Summary



Significance/Impact

A large population of patients in the world suffers from urinary bladder-associated irreversible physiological disorders. The current gold standard for bladder reconstruction, an autologous gastrointestinal graft, is proven not to be an ideal substitute in the clinic. This recent work demonstrates that the dynamically crosslinked biocompatible polymeric blend (poly dimethyl siloxane-based polyurethanes, TPU-PDMS) and the novel synthesis protocol to induce polycation grafted non-exhaustive contact-killing surfaces against uropathogens, have a significant clinical prospect in reconstructive urology. As an 'off-the-shelf' alloplastic substitute, these blends can be used for the surgical treatment of bladder carcinoma, refractory overactive bladder, interstitial cystitis, etc.