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Antibacterial and Physical Properties of Smart Materials with Novel pH-Sensitive Compounds

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Deadline for manuscript submissions:
closed (30 April 2024)

Message from the Guest Editor

In recent decades, the use of antibiotics has taken a significant step toward preventing the propagation of bacterial pathogens. However, the rise of multidrug-resistant bacteria poses a new challenge that contributes to higher treatment failure. Progress has been made toward alternative therapeutics toward bacterial infections, including a number of pH-responsive compounds that have the ability to provide targeted and controlled antibacterial activity. Smart materials with antimicrobial efficacy are especially advantageous as they generate local stimuli-responsive antibacterial activity. Such materials may be a new approach to treat bacterial infection locally with reduced amounts of antibacterial agents, thus enhancing antibacterial stewardship and alleviating the risk of antibacterial resistance. In addition to the enhanced antimicrobial properties of these novel compounds, it is important to consider their physical impacts on the materials they are carried or used with as well. They need to be used without compromising the basic physicomechanical characteristics of materials.

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Message from the Editor-in-Chief

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Journal Rank: JCR - Q2 (Chemistry, Multidisciplinary) / CiteScore - Q1 (Chemistry (miscellaneous))

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