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Development of innovative coatings for antibiofilm medical devices

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The impact for public health of medical device-related infections has received considerable attention over the last decade. Clinical signs of most of these infections clearly suggest that they are caused by microbes colonizing the implant surface and nearby tissues. The subsequent microbial biofilm formation aids the development of antibiotic resistant microrganisms and compromises the device functionality. A revision surgery is therefore frequently required adding healthcare costs to those already required for taking care of the infection. The enormous advances achieved in the last decades in polymer sciences together with therapeutic innovations hold the promise to meet the need of improving patient experience associated with device implants. Particularly, novel, high-performance polymer systems with antimicrobial or antifouling properties have been lately developed. The application of these materials as coatings for medical devices has demonstrated in some cases to offer a protection towards microbial colonization and biofilm formation. In this talk, an overview of innovative materials and technologies facing with biofilm-based medical device-related infections will be provided and how our group is addressing this issue will be presented.

Biography

Iolanda Francolini has obtained her degree in Industrial Chemistry in 2000 from the Sapienza University of Rome. In 2003, she was a Visiting Scientist at the Center for Biofilm Engineering, Montana, USA. In 2005, she has obtained PhD degree in Chemical and Industrial Processes at the Sapienza University of Rome. She currently serves as a Lecturer in the Science and Technologies of Polymers at the Sapienza University of Rome and performs research on antimicrobial polymers. She has published more than 45 papers in reputed journals and has been serving as an Editorial Board Member for *International Journal of Molecular Science*.

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