Non-toxic multifunctional (fluorescent and magnetic) silica nanoparticles for living cell observation and manipulation via external stimuli.

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COVID-19 has significantly changed society and our future directions in healthcare forever. Instead of a healthcare system focussed on hospital-centric care, technologies are moving to more at-home healthcare for the improved prevention, diagnosis, and treatment of diseases. Nanotechnology has been front and center in this transition, as well as in all aspects of COVID-19. From improved masks to surfaces that can resist SARS-CoV-2 attachment to diagnostic kits to therapies and even for currently available vaccines, nanomaterials have played a critical role. This talk will cover all of these advances and how nanotechnology is playing a role in the future of improved healthcare to avoid the next pandemic. It will also emphasize how nanotechnology is being used to combat SARS-CoV-2 variants.

Biography

Thomas J. Webster's (H index: 104; Google Scholar) degrees are in chemical engineering from the University of Pittsburgh (B.S., 1995) and in biomedical engineering from RPI (Ph.D., 2000). He has served as a professor at Purdue (2000-2005), Brown (2005-2012), and Northeastern (2012-2021) Universities and has formed over a dozen companies who have numerous FDA approved medical products currently improving human health. He has directed numerous international centers in biomaterials and has graduated over 200 students with over 750 peer-reviewed publications. Prof. Webster is a fellow of over 8 academic societies and is a SCOPUS highly cited researcher (top 1% citations for materials science and mixed fields) as well as a Public Library of Science (PLoS) World Top 2% Scientist by Citations in all fields.

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