GUEST EDITORIAL

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Nanotechnology and nanoscience are expected to revolutionize or at least dramatically improve the performance of many materials that are used in different areas of our daily lives. The scope ranges from classical engineering materials that are reinforced by nanomaterials, for example, carbon nanotubes, to completely new developments. The combinations or new developments outperform classical engineering materials in regard to strength, stiffness, and other physical properties. Thus, structures may be designed much lighter and may require less fuel consumption in the transportation industry. Less pollution and less harm for the environment is a direct consequence of such trends. Another typical application is the surface treatment or refinement of surfaces with the aim to improve properties against mechanical wear or to have higher stability against extreme temperatures. Furthermore, new trends are seen in the biomedical or clinical area where applications range from drug delivery to improved resistance against bacteria.

This special section on nanotechnology gathered a few articles at the forefront of research in the above-mentioned areas. I hope that this collection provides a quick overview on recent trends in this emerging field of research.

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