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Nanophysics Applications for Energy Efficiency

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Message from the Guest Editor

Among the current applications of nanotechnology, those that concern the sustainability of our global environment assume a particular prominence, and from them, those related with the paradigm shift in the methods of production and use of energy are vital for our continuity as humans on Earth.

Nanophysics, the core of nanoengineering, is decisively contributing with applications to improve the efficiency of energy generation or to develop new methods of using energy. Some of these interesting ways that are being explored to produce more efficient and cost-effective energy include nanostructures for generating electricity from heat, windmill blades, hydrogen generation and storage, friction reduction, electrochemical devices, reducing the power loss in electric transmission media, greenhouse gas conversion, plasma catalysis, nanocatalysts for radiation-to-steam conversion, energy harvesting, plasmonic cavities, the sequestration of harmful molecules, and green synthetic fuels, among others; they are unique opportunities for innovative devices developed by new synthetic routes to come into play, presenting novel properties.

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Message from the Editor-in-Chief

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