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Name	Christos N. Markides	
Affiliation	Chemical Engineering, Imperial College London	
<h2>Invited Plenary Lecture</h2>		
Presentation Title	Next-generation Hybrid Solar Technologies and Systems: Challenges and Opportunities	
Abstract (Approximately 200 words)	<p>"Making solar energy economical" is widely recognized as a global engineering grand challenge with the potential to enable the transition to a clean and sustainable energy future. By far the highest global growth and new investment in renewable technologies is being experienced by the solar sector. In fact, solar systems are projected to deliver the majority of the world's electricity by 2050. Although most solar technologies today are designed for either electrical power generation (e.g., photovoltaic or PV, and concentrated solar power or CSP) or hot water provision (e.g., solar thermal/hot water systems), solar systems can be used to deliver multiple useful energy vectors, including heating, cooling, clean water, or any combination of the above. In this talk, we will present the underpinning principles of conventional solar technologies, including PV, CSP and solar-thermal, and extend the discussion to more recent options (both collectors and systems), such as hybrid PV-X solar technologies, covering advances from the material to the system level, and discussing their potential, along with the challenges and opportunities of their further development.</p>	
Biographical Sketch (Approximately 200 words)	<p>Christos Markides is Professor of Clean Energy Technologies and Head of the Clean Energy Processes (CEP) Laboratory at Imperial College London. He is also, amongst other, Editor-in-Chief of Applied Thermal Engineering. He specializes in applied thermodynamics, fluid flow and heat/mass transfer processes as applied to high-performance devices, technologies and systems for thermal-energy recovery, utilization, conversion or storage. His research interests include heating, cooling and power, and in particular, solar energy and heat recovery and conversion in diverse applications. He has published >250 journal papers and >300 conference papers on these topics.</p>	