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Next 10 years of light sources

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Synchrotron light sources and free electron lasers (FELs) have established as powerful research tools in various disciplines, as physics, chemistry, biology, materials science, and medicine. During the last decade new developments and advancements, leading to construction of new facilities and upgrades to existing ones, have allowed to further extend their capabilities to drive scientific progress. This paper explores the emerging and future trends and perspectives in synchrotron light sources and FELs, including novel accelerator and component designs and advances in technology, with a perspective over the next decade. The scientific and technological challenges needed for the design and construction are discussed together with the strategies and innovation necessary, also considering how key societal challenges, such as sustainable energy management and advanced manufacturing, are addressed.

Footnotes

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