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This article examined the literatures enlisted in the database of SCI and SSCI on the topics with regard to green technology and low carbon technology innovation from 1994 to 2010. It intends the service with the purpose of helping researchers and practitioners understand what issues or subjects have been addressed in green and low carbon technology innovation and initiate a journey for the next generation of sustainable-oriented research. Some critical discussion and conclusion are as follows: (1) it shows a positive journey of green and low carbon technology innovation. The research of Western Europe and North America is highly advanced compared to other developing countries, especially in terms of new resource and renewable energy technology innovation. (2) The empirical research, such as sample survey and field study with primary data, is prevalent and preponderating over other methods (conceptual, qualitative and formal models research). (3) The research subjects are multi-perspective and multi-disciplinary, covering environment science, management, energy and fuels, economics and social behavior. So far the research fields mainly focus on technology adoption, diffusion, transfer, policy making or implementation, and advanced technology development. New vibrancy of advanced theoretical and methodological research is particularly needed, especially for low carbon technology innovation trajectory, performance evaluation, government policy instrument and multi-level cooperation among enterprises, governments and NGOs. (4) The local governments and NGOs have played a key role on the promotion of low carbon techniques particularly in developing countries such as China. (5) Green and low carbon technology innovation cannot be isolated from the policy or regulation regime, and is becoming a new underpin of current sustainable development coupled with social energy system contributing to control the climate change.

Highlights

- Low carbon technology innovation is a new underpin of sustainable development. □
- Multi-disciplinary research on this topic is becoming convergence out of divergence. □
- Governments and NGOs play key roles in low carbon technology innovation management.

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