

**THE GREEN HYDROGEN RESEARCH LANDSCAPE IN MALAYSIA: A
COMPREHENSIVE BIBLIOMETRIC ANALYSIS (2008-2024)**

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ABSTRACT

THE GREEN HYDROGEN RESEARCH LANDSCAPE IN MALAYSIA: A COMPREHENSIVE BIBLIOMETRIC ANALYSIS (2008-2024)

Reducing Malaysia's heavy dependence on fossil fuels is a key issue, which in turn is a path to a more sustainable future. The national strategic policies, such as the National Energy Transition Roadmap (NETR) and the Hydrogen Economy and Technology Roadmap (HETR), support this energy transition. Particularly, green hydrogen is seen as a powerful and promising solution for decarbonization. However, a better understanding of the existing research is needed to avoid redundant efforts and to ensure direct resources to be invested much more strategically. For this purpose, this study offers a foundational overview of green hydrogen research in Malaysia. An analysis of 129 scholarly articles from 2008 to 2024 shows substantial growth in research output, with a distinct acceleration since 2020. This growth is led by top institutions such as Universiti Kebangsaan Malaysia (UKM), Universiti Teknologi Malaysia (UTM), and Monash University Malaysia. Furthermore, there is a strong research focus on solar-powered hydrogen production, including in-depth studies of photocatalysis and water splitting. This research is supported by a strong domestic research community and the formation of international partnerships, particularly with entities in China. This approach represents a strategic use of one of Malaysia's main natural assets in which its high solar irradiance. At the same time, it is important to note that the research is still in its foundational stages, focusing on fundamental production technologies that align with national energy goals. From this study, the results put forth a very clear and action-oriented map for policy makers, researchers and industry. This map can be used to identify knowledge gaps, foster strategic collaborations, and accelerate the nation's move toward a truly sustainable hydrogen economy.

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