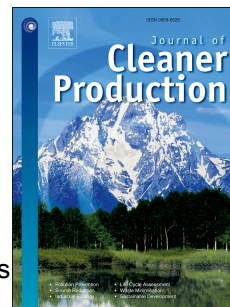


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A comprehensive review of the evolving and cumulative nature of eco-innovation in the chemical industry

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# A comprehensive review of the evolving and cumulative nature of eco-innovation in the chemical industry

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**Keywords:** eco-innovation, environmental innovation, chemical industry, sustainability transitions, environmental change.

**Abstract:** Different bodies of literature have attempted to explain what factors and events drive industries throughout processes of environmental change. The latter is a gradual, historical process of evolution from lower to higher degrees of development. Based on concepts derived from evolutionary economics, greening technological progress and resource-based view of the firm, this article informs the sustainability transitions literature by providing an account of the evolution in the chemical industry's striving for the design, use and production of environmentally sound chemical processes and products based upon eco-innovation. A conceptual model was elaborated depicting five stages of environmental change in the chemical industry in the period 1901-2030. The authors empirically tested this model by conducting a longitudinal computer-aided content analysis of 255 documents addressing different environmental and innovation aspects in this industry in the same period of time. The results of this article advance our modern understanding of the different stages of evolution of the chemical industry in terms of environmental change. Consistent with the conceptual model hitherto presented, the findings of this article highlight a number cumulative of factors that enabled the evolution of the chemical industry throughout time supporting eco-innovation, highlighting the intertwined nature of regulation, innovation, and technological change. It is plausible that the future development of this industry might be shaped by the policy-driven paradigms of sustainability and resource efficiency.

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