

# **Dynamics of Change and Interaction in the Technoscientific Knowledge Structures Underpinning Emerging Technologies – The Case of Ipsc Technologies**

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## **Abstract**

It is well known that science and technology (S&T) are closely intertwined, yet the nature of such interactions is far from being fully understood. In this regard, the S&T interactions of technologies at very early stages of development are of particular interest. Current bibliometric-oriented research on S&T interactions has typically restricted to either publications (co-authorship, etc.) or patents (co-invention, analysis of non-patent references, etc.) as their main units of analysis. At the core of this paper is the perspective that fuller, more holistic, insights into S&T interactions and linkages can be gained through the integration of publications and patents into a single research framework. This paper demonstrates such an approach by constructing and interconnecting co-citation networks derived from publications and patents into a single bibliometric map, also regarded as the technoscientific knowledge structure. For the purposes of this study, induced pluripotent stem cells (iPSC), a newly discovered stem cell species that can be generated by the reprogramming of somatic cells, is used as the empirical case. In particular, this research sets out to explore two main aspects. First, to what extent scientific and technological issues overlap; and, if so, what is the nature of such overlapping. Second, what patterns of activity across technological, scientific, and technoscientific realms can be discerned for countries active in this emerging field. The results of this analysis are expected to provide policy makers with a clearer picture of the intricacies inherent in evolution of a newly emerging field.