

Prospective Plasma Contribution to Fourth Agricultural Revolution

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The third agricultural revolution or the Green Revolution is the period when agrichemicals had been intensively employed and genetically modified crops began to be used, leading to greater output of the products. In spite of the success, the Green Revolution has left our lands over-cultivated and over-used, making them unfit for use in the future and negatively impacting the ecological balance. Industrial nitrogen fixation, for instance, has increased exponentially since the 1940s, and human activity has doubled the amount of global nitrogen fixation [1]. In agricultural systems, fertilizers are used extensively to increase plant production, but unused nitrogen, usually in the form of nitrate, can leach out of the soil, enter streams and rivers, and ultimately make its way into our drinking water [2]. Such large changes in the availability of nitrogen can lead to severe alterations of the nitrogen cycle in both aquatic and terrestrial ecosystems. Hence, we need the fourth agricultural revolution, which supports the use of technology in order to realize sustainable farming. Plasma technology can contribute to solve such issues through the novel and effective ways of agricultural productivity enhancement in an ecofriendly manner [3-6].

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