

# Accepted Manuscript

Recent developments in cold plasma decontamination technology in the food industry

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PII: S0924-2244(17)30717-3

DOI: [10.1016/j.tifs.2018.07.014](https://doi.org/10.1016/j.tifs.2018.07.014)

Reference: TIFS 2275

To appear in: *Trends in Food Science & Technology*

Received Date: 4 November 2017

Revised Date: 14 May 2018

Accepted Date: 12 July 2018

Please cite this article as: Mandal, R., Singh, A., Singh, A.P., Recent developments in cold plasma decontamination technology in the food industry, *Trends in Food Science & Technology* (2018), doi: 10.1016/j.tifs.2018.07.014.

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1 *Review*

2 **Recent developments in cold plasma decontamination technology in the**  
3 **food industry**

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9 **Abstract:**

10 *Background*

11 The advent of the 21<sup>st</sup> century has witnessed a growing demand of safe and nutritious foods.  
12 The food industry is adopting novel non-thermal food processing technologies. Cold plasma  
13 is one such promising non-thermal food processing method which uses charged, highly  
14 reactive gaseous molecules and species to inactivate contaminating microorganisms on foods  
15 and packaging materials.

16 *Scope and Approach*

17 The paper gives the reader an overview of the cold plasma technology in food industry. It  
18 reviews principles of plasma generation, including mechanisms of action of the process on  
19 microorganisms. It also highlights different plasma generation systems, various published  
20 results of plasma application to inactivate microorganisms in vitro and in various food  
21 products, food packages and equipment surfaces. The challenges of the process, its effects on  
22 food quality and the future prospects are highlighted.

23 *Key Findings and Conclusions*

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