

Sensors in Food Industry : A Review

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Abstract: This paper includes study and overall review of diverse sensors applied in the food industry for various purposes. It includes various findings and relevant data about how effective each sensor is and their future advances. Biosensors play a major role in the food industry as compared to other sensors. Food processing industry faces numerous challenges from safety to food quality. The analytical techniques for quality and safety Monitoring is too slow, time consuming it can cause food poisoning, we can't fully rely on them. Hence we have to develop fast-working and trustworthy techniques for safety, quality and monitoring of food products. This can be done by using the sensor techniques in the food processing industries.[01].

Keywords: Biosensor, E-tongue, E-nose, Proximity, Ultrasound

Methodology of reviews: This paper is written after receiving various research papers from Elsevier, Science Direct, Research Gate and some government sites with keywords like sensors, food industry, biosensors, etc. It is drafted in a way which includes every important detail of the topic and data and images from studying the papers and then understanding and applying them in this paper.

REFERENCES

- [1]. Fatima Mustafa and Silvana Andreescu, Chemical and Biological Sensors for Food-Quality Monitoring and Smart Packaging, *Foods*, 2018 Oct; 7(10): 168.
- [2]. Catherine C. Adley., Past, Present and Future of Sensors in Food Production, *Foods*, 2014 Sep; 3 (3): 491–510.
- [3]. G. Murugaboopathi, V. Parthasarathy, C. Chellaram, T. PremAnandand S. Vinuraj Kumar, Applications of Biosensors in Food Industry, *Biosciences Biotechnology Research Asia*, December 2013, Vol.(10)2, 711-714.
- [4]. Priya Patel and Abdulgaffar Doddamani, Role of Sensor in The Food Processing Industries, *IAAST-Vol 10* [1], March 2019, 10-18.
- [5]. Meenu Thakur, Bo Wang, Madan L. Verma, Development and applications of nanobiosensors for sustainable agricultural and food industries: Recent developments, challenges and perspectives, *Environmental Technology & Innovation*, (26)-2022.
- [6]. Massoud, Ramona & Fam, Shakiba & Maleki, Amir & Mir, Fatemeh & Mirmohammadmakki, Fatemehsadat & Sadighi, Nahid & Massoud, Armita & Jafartash, Ehsan., *Biosensors Application in Food Analysis, Recent Advance in Industrial Management and Engineering – Conference (2021)*.
- [7]. Neethirajan, S., Jayas, D.S., Nanotechnology for the Food and Bioprocessing Industries. *Food Bioprocess Technol* 4, 39–47 (2011).
- [8]. Wang W., Han J., Wu Y., Yuan F., Chen Y., Ge Y., Simultaneous detection of eight food allergens using optical thin-film biosensor chips. *J. Agric. Food Chem.* 2011; 59: 6889–6894.
- [9]. Nitya Bhargava, Rahul S Mor, Kshitiz Kumar, Vijay Singh Sharanagat, Advances in application of ultrasound in food processing: A review, *Ultrasonics Sonochemistry*, Volume 70, 2021.
- [10]. Romero, Marcelo & Picchio, Matias, Biosensors Based on Nanomaterials: Transducers and Modified Surfaces for Diagnostics, (2020), 10.1007/978-981-32-9840-8_2.