N.N. Misra, Ph.D.

Ingenium Naturae Pvt Ltd, Gujarat, India
misra.cftri@gmail.com
Google Scholar https://goo.gl/Gn452H
Researchgate www.researchgate.net/profile/NN_Misra
LinkedIn www.linkedin.com/in/nnmisra/

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Summary

As a food engineer with broad interests, I seek to (1) develop consumer friendly, sustainable, scalable and commercially viable food processing technologies; (2) educate and train students to apply science, engineering and social principles to solve problems in the agri-food sector. My expertise and interests circumscribe the broad areas of food processing, food physics, electrotechnologies, and optical spectroscopy. My personal research interests include scientific computation, algorithms, and tacit knowledge.

Professional Experiences

Nov 2019 – now	***Director.*** Ingenium Naturae Private Limited, Gujarat, India
Jun 2020 – Sep 2020	***Consultant.*** World Food Programme, FAO, UN.
Nov 2019 – July 2021	***Adjunct Faculty.*** Dept. of Engg., Dalhousie University, NS, Canada
Apr 2019 – Jan 2020	***Postdoctoral Fellow.*** Dalhousie University, NS, Canada
Feb 2018 – Jan 2019	***Postdoctoral Associate.*** Iowa State University, Ames, IA, USA
Feb 2016 – Dec 2017	***Senior Scientist.*** General Mills India Pvt. Ltd., Mumbai, India
Mar 2015 – Jan 2016	***Scientist.*** General Mills India Pvt. Ltd., Mumbai, India.
Aug 2010 – Feb 2011	***Knowledge Scientist.*** Dolcera ITES Pvt. Ltd., Hyderabad, India.

Education

2011 – 2014 **Ph.D. Engineering, Dublin Institute of Technology, Ireland**.

2008 – 2010 **M.Sc. Food Technology, CSIR-CFTRI, University of Mysore, India**.
First rank and gold medal. Grade: 3.0/3.0

2004 – 2008 **B.Tech. Food Science, ANGR Agricultural University, Hyderabad, India.**
University first rank. Grade: 9.29/10.00

Awards, Honours & Achievements

2021 **Guest of Honor & Speaker** at *Food Technova 2K21* organised by College of Engineering, JNTUA, A.P., India.

Highly Cited Researcher in the field of Agricultural Sciences - 2021 by *Clarivate Analytics* for multiple highly-cited papers that ranked in the top 1% by citations.

2020 **Highly Cited Researcher in the field of Agricultural Sciences - 2020** by *Clarivate Analytics* for multiple highly-cited papers that ranked in the top 1% by citations.

2014 **Rain Bird Engineering Concept of the Year Award**, American Society of Agricultural and Biological Engineers (ASABE).

2011 **Embark Fellowship** for doctoral research, Irish Research Council, Republic of Ireland.

Awards, Honours & Achievements (continued)

2010
- **Association of Food Scientists and Technologists, India Endowment Gold Medal**, University of Mysore, India.
- **Girdharilal Gold Medal**, for securing first rank in M.Sc. (Food Technology), CSIR-Central Food Technological Research Institute, Mysuru, India.
- **Nirulas Foundation Gold Medal**, CSIR-Central Food Technological Research Institute, Mysuru, India.
- **Food Ingredients Specialities Pvt. Ltd. Scholarship** for best academic performance, CSIR-Central Food Technological Research Institute, Mysuru, India.

2009
- **Bisleri Scholarship** for best academic performance, CSIR-Central Food Technological Research Institute, Mysuru, India.

2008
- **All India First rank in Post Graduate Junior Research Fellowship Examination**, Indian Council of Agricultural Research, New Delhi, India.
- **University first rank** in B.Tech. (Food Science), ANGR Agricultural University, India.
- **Best Student Award**, College of Food Science and Technology, ANGR Agricultural University, India.

2004
- **ICAR fellowship** for pursuing undergraduate course, Indian Council of Agricultural Research, New Delhi, India.

Invited Talks

June 2022
- **Cold Plasma for Liquid Foods**. Webinar organised by *Pepsico India*.

Dec 2021
- **Industry 4.0, Emerging Technologies and Trends in Food Industry**. "Food Technova 2k21" organised by *College of Engineering*, *Jawaharlal Nehru Technological University*, *Anantapur*, *A.P.*, *India*.

Aug 2021
- **Cold Plasma Technology in Agri-Food Processing**. International webinar on "Emerging Technologies in Agricultural Engineering for Food Safety & Security" organized by *ANGR Agricultural University*, *A.P.*, *India*.

Oct 2020
- **Next-gen Advanced Oxidation Processes for Clean Water and Food in India**. Webinar on "Sustainable Development and Research Opportunities in Food and Chemical Engineering" under International Virtual Faculty Development Programme organized by *Hindusthan College of Engineering and Technology*, *Coimbatore*, *India*.

Sept 2020
- **Cold Plasma Technology**. National Webinar on Trends in Non-Thermal Processing Technologies, organized by *National Institute of Technology*, *Rourkela*, *India*.

July 2020
- **Cold Plasma Technology**. Webinar organized by *Bihar Agricultural University*, *Bihar*, *India*.

June 2020
- **Cold Plasma in Food Processing**. Webinar series on Innovative Agro Food Processing Technologies for Entrepreneurship Development, organized by *Anand Agricultural University*, *Anand* and funded by *Ministry of Agriculture Cooperation and Farmers' Welfare*, *India*.

Dec 2018
- **Cold Plasma in Agriculture and Fod Processing**. International Food Conventions (IFCON 2018), *CSIR- Central Food Technological Research Institute*, *Mysore*.

Oct 2017
- **Safety in Food Laboratory**. Training programme on Good Food Laboratory Practices, organized by *Food Safety & Standards Authority of India (FSSAI)*, *Mumbai*.

Jul 2017
- **Knowledge is Power: Arm Yourself to Excel in the Brave New Data-Driven World**. *Big Data*, *Analytics & Insights Summit*, *Bangalore*, *India*.

Jun 2017
- **Cold Plasma Applications in Food Systems: Industrial Perspectives and Commercialization Potential**. *IFT Annual Meeting*, *Las Vegas*, *USA*.

Invited Talks (continued)

May 2017
- **Cold Plasma Innovations for Meat Industry**. *49th Korean Society for Food Science of Animal Resources (KoSFA) International Symposium & Annual Meeting, Cheonan*.
- **Cold Plasma in Food and Agriculture**. College of Agriculture and Life Sciences (CALS), *Seoul National University, Korea*.

Oct 2015
- **Mathematical Modelling for Food Scientists**. Institute of Professional Studies, *University of Allahabad, India*.

Dec 2014
- **Nonthermal Plasma Processing of Foods – When food scientists meet plasma physicists**. First international session of 24th annual symposium of the *Materials Research Society of Japan, Yokohama, Japan*.

Teaching

I have instructed theory and laboratory courses for undergraduates in food processing, shelf-life modelling, instrumentation, unit operations in food processing, and heat and mass transfer at Dublin Institute of Technology, Ireland, and at Iowa State University, USA. At Dalhousie University, I delivered a three week long module on transport phenomena in drying technology.

Industry Outreach

Patent

June 2015
- A method for reducing the oil content of snacks by increasing spreadability. Inventors: P.J. Cullen, Carl Sullivan and **N.N. Misra**. Patent application WO 2015091221A1

Dec 2019
- Method and apparatus for nitrogen fixation. Inventors: **N.N. Misra** and Oleksiy Martynenko. Canadian Patent application No. 3,065,703.

Jul 2022
- System and method for treatment of materials by exposure to reactive chemical species. Inventors: **N.N. Misra**. Indian Patent application No. 202221043806.

Industrial consultancy

Since Oct '18
- **Scientific Advisor** to Plasma Agricultural Solutions, NS, Canada

May 2018
- **Pilot scale spray drying of a proprietary egg co-product formulation** for Biova® LLC, Iowa, USA.

Extension and industry outreach

July 2018
- Member of organizing committee and instructor for a **two day workshop on "Introduction to Fermentation"** for 11 industry participants at Center for crops utilization research (CCUR), Iowa State University.

Professional services

Academic Board

2022
- Member of Board of Studies for Undergraduate Programmes in Engineering, Jawaharlal Nehru Technological University, India.

Editorial board

2017– 2019
- **Guest Editor, Innovative Food Science and Emerging Technologies** journal.

Professional services (continued)

Reviewer

Since 2012 — Referee for 15-20 papers per year in various journals, e.g. Journal of Food Engineering, Innovative Food Science & Emerging Technologies, Food Research International, Food Chemistry, Food & Bioproducts Processing, Trends in Food Science & Technology, Critical Reviews in Food Science & Nutrition.

Since 2017 — Reviewer for book proposals submitted to *Elsevier*, *CRC Press*, and *Springer*.

Since 2019 — Reviewer for grant proposals submitted to NRF (National Research Foundation), South Africa.

Since 2020 — Reviewer for grant proposals submitted to FONDECYT Program, Chile, Government of Chile.

External Examiner

since 2015 — **Evaluated 4 M.Tech. and 1 PhD research thesis in Food Engineering and Technology**, *Institute of Chemical Technology*, *Mumbai*, *India*.

Engineering & Design Skills

Coding — Matlab (Expert), Python (Proficient), LaTeX(Proficient), R (occassional), Mathematica (occassional), Comsol (basics).

Electronics — Power Electronics- switching converter design, High voltage equipment design, Sensor integration and DAQ interfacing, Circuit and PCB design (up to 2 layers)

Drafting — Drafting open innovation briefs, Patent landscaping, Patent drafting

CAD/CAM — 3D - Solid Works (Proficient), 2D - Adobe Illustrator (Proficient), More than 2 years of hands-on experience in mechanical workshop

Publications

Number of SCI Journal Papers ∼ 65, Book Chapters ∼ 15, Books: Edited = 1, Authored = 2
Total Citations ∼ 5000 (Scopus)/ 6500 (Google Scholar); H-index = 38 (scopus)/ 40 (Google Scholar)

Books

1. **Misra**, **N.**, Schlüter, O., & Cullen, P. (2016a). *Cold plasma in food and agriculture: fundamentals and applications*. Academic Press, Elsevier.
2. **Misra**, **N.**, Pankaj, S., & Kadam, S. (2011). *Acoustic fields in food processing: fundamentals and applications*. VDM Publishing House, Germany.
3. Pankaj, S., Kadam, S., & **Misra**, **N.** (2011). *Trends in food packaging: from genesis to advances*. VDM Publishing House, Germany.

Book Chapters

1. Bhullar, M., Gavahian, M., & **Misra**, **N.** (2022a). Cold plasma processing: methods and applications in study of food decontamination. In *Methods and protocols in emerging food processing technologies*. Humana Press, Springer-Nature.
2. Bhullar, M., Gavahian, M., & **Misra**, **N.** (2022b). Plasma activated water: methods and protocols in food processing applications. In *Methods and protocols in emerging food processing technologies*. Humana Press, Springer-Nature.
3. Du, L., Chaplot, S., **Misra**, **N.**, & Roopesh, M. (2019). Cold plasma technology for food processing applications. In *Trends in food processing*. New Age India Publisher.

4. **Misra, N.** & Roopesh, M. (2019). Cold plasma for sustainable food production and processing. In *Green food processing techniques: preservation, transformation and extraction*. Elsevier Academic Press.

5. Yepez, X., **Misra, N.**, & Keener, K. M. (2019). Nonthermal plasma. In *Food safety engineering*. Springer-Verlag.

6. Keener, K. & **Misra, N.** (2016). Future of cold plasma in food processing. In *Cold plasma in food & agriculture: fundamentals and applications* (pp. 343–360). Elsevier Academic Press. doi:10.1016/B978-0-12-801365-6.00014-7

7. **Misra, N.** (2016). Quality of cold plasma treated plant foods. In *Cold plasma in food & agriculture: fundamentals and applications* (pp. 253–271). Elsevier Academic Press. doi:10.1016/B978-0-12-801365-6.00010-X

8. **Misra, N.**, Cullen, P., & Tiwari, B. (2016). Ultrasound processing applications in the meat industry. In *Emerging technologies in meat processing: production, processing & technology* (pp. 149–170). Wiley Blackwell. doi:10.1002/9781118350676.ch6

9. **Misra, N.**, Schlüter, O., & Cullen, P. (2016b). Plasma in food and agriculture. In *Cold plasma in food & agriculture: fundamentals and applications* (pp. 1–16). Elsevier Academic Press. doi:10.1016/B978-0-12-801365-6.00001-9

10. Ziuzina, D. & **Misra, N.** (2016). Cold plasma for food safety. In *Cold plasma in food & agriculture: fundamentals and applications* (pp. 223–252). Elsevier Academic Press. doi:10.1016/B978-0-12-801365-6.00009-3

11. Cullen, P. & **Misra, N.** (2015). Laminar mixing fundamentals. In *Pharmaceutical blending & mixing* (pp. 43–56). Wiley Blackwell. doi:10.1002/9781118682692.ch3

12. **Misra, N.**, Cullen, P., Barba, F., Hii, C., Jaeger, H., Schmidt, J., … Yoshida, H. (2015). Emerging macroscopic pretreatment. In *Food waste recovery: processing technologies & industrial techniques* (pp. 197–225). Elsevier Academic Press. doi:10.1016/B978-0-12-800351-0.00009-2

13. **Misra, N.**, Rai, D., & Hossain, M. (2015). Analytical techniques for bioactives from seaweed. In *Seaweed sustainability: food and non-food applications* (pp. 271–287). Wiley Blackwell. doi:10.1016/B978-0-12-418697-2.00010-6

14. **Misra, N.**, Segat, A., & Cullen, P. (2015). Atmospheric pressure nonthermal plasma decontamination of foods. In *Advances in food biotechnology* (pp. 565–574). Wiley Blackwell. doi:10.1002/9781118864463.ch34

15. Prasad, K., Spigno, G., Jauregi, P., **Misra, N.**, & Cullen, P. (2015). Emerging macro- and micromolecules separation. In *Food waste recovery: processing technologies & industrial techniques* (pp. 227–248). Elsevier Academic Press. doi:10.1016/B978-0-12-800351-0.00010-9

16. **Misra, N.**, Han, L., Tiwari, B., Bourke, P., & Cullen, P. (2014). Nonthermal plasma technology for decontamination of foods. In *Novel food preservation & microbial assessment techniques*. CRC Press. doi:10.1201/b16758-8

17. **Misra, N.** & Tiwari, B. (2014). Biscuits. In *Bakery products science & technology: second edition* (pp. 585–601). Wiley Blackwell. doi:10.1002/9781118792001.ch33

18. Muthukumarappan, K. & **Misra, N.** (2013). Sustainable brewing. In *Sustainable food processing* (pp. 197–210). Wiley Blackwell. doi:10.1002/9781118634301.ch12

19. Ahmed, L. & **Misra, N.** (2012). An overview of the biological activities of whey proteins and peptides. In *Whey: types, composition & health implications* (pp. 197–210). Nova Science Publishers.

Journal Articles

1. **Misra, N.**, Dixit, Y., Al-Mallahi, A., Bhullar, M. S., Upadhyay, R., & Martynenko, A. (2022). IoT, big data and artificial intelligence in agriculture and food industry. *IEEE Internet of Things Journal*, *9*(9), 6305–6324. doi:10.1109/JIOT.2020.2998584

2. Shi, H., **Misra, N.**, & Keener, K. (2022). Degradation of Deoxynivalenol in Wheat kernels and Wheat flour by High Voltage Atmospheric Cold Plasma (HVACP). *Innovative Food Science & Emerging Technologies*, *submitted*.

3. Challa, S. K., **Misra, N.**, & Martynenko, A. (2021). Drying of cannabis – state of the practices and future needs. *Drying Technology*, *39*(14), 2055–2064. doi:10.1080/07373937.2020.1752230

4. Feizollahi, E., **Misra, N.**, & Roopesh, M. (2021). Factors influencing the antimicrobial efficacy of dielectric barrier discharge (DBD) atmospheric cold plasma (ACP) in food processing applications. *Critical Reviews in Food Science & Nutrition*, *61*(4), 666–689. doi:10.1080/10408398.2020.1743967

5. Gavahian, M., Sarangapani, C., & **Misra, N.** (2021). Cold plasma for mitigating agrochemical and pesticide residue in food and water: Similarities with ozone and ultraviolet technologies. *Food Research International*, *141*, 110138.

6. Martynenko, A. & **Misra, N.** (2021). Thermal phenomena in electrohydrodynamic (EHD) drying. *Innovative Food Science & Emerging Technologies*, *74*, 102859.

7. **Misra, N.** & Martynenko, A. (2021). Multipin dielectric barrier discharge for drying of foods and biomaterials. *Innovative Food Science & Emerging Technologies*, *70*, 102672.

8. Rifna, E., **Misra, N.**, & Dwivedi, M. (2021). Recent advances in extraction technologies for recovery of bioactive compounds derived from fruit and vegetable waste peels: a review. *Critical Reviews in Food Science & Nutrition*, *in-press*. doi:10.1080/10408398.2021.1952923

9. Wan, Z., **Misra, N.**, Li, G., & Keener, K. (2021). High Voltage Atmospheric Cold Plasma Treatment of *Listeria innocua* and *E. coli* K-12 on Queso Fresco Cheese. *LWT Food Science & Technology*, *146*, 111406.

10. Wan, Z., Sucheta, K., Dwivedi, M., & **Misra, N.** (2021). Strategies for sugar reduction in yogurts. *Food Chemistry*, *344*, 128573.

11. Mahnot, N., Siyu, L.-P., Wan, Z., Keener, K., & **Misra, N.** (2020). In-package cold plasma decontamination of fresh-cut carrots: microbial and quality aspects. *Journal of Physics D: Applied Physics*, *53*, 154002. doi:10.1088/1361-6463/ab6cd3

12. Martynenko, A. & **Misra, N.** (2020). Machine learning in drying. *Drying Technology*, *38*(5-6), 596–609. doi:10.1080/07373937.2019.1690502

13. Moutiq, R., **Misra, N.**, Mendonca, A., & Keener, K. (2020). In-package decontamination of chicken breast using cold plasma technology: microbial, quality and storage studies. *Meat Science*, *159*, 107942. doi:10.1016/j.meatsci.2019.107942

14. Moutiq, R., Pankaj, S., Wan, Z., Mendonca, A., Keener, K., & **Misra, N.** (2020). Atmospheric pressure cold plasma as a potential technology to degrade carbamate residues in water. *Plasma Chemistry & Plasma Processing*, *40*, 1291–1309. doi:10.1007/s11090-020-10093-z

15. Sucheta, K., **Misra, N.**, & Yadav, S. (2020). Extraction of pectin from black carrot pomace using intermittent microwave, ultrasound and conventional heating: kinetics, characterization and process economics. *Food Hydrocolloids*, *102*, 105592. doi:10.1016/j.foodhyd.2019.105592

16. Yadav, B., Spinelli, A. C., **Misra, N.**, Tsui, Y. Y., McMullen, L. M., & Roopesh, M. (2020). Effect of in-package atmospheric cold plasma discharge on microbial safety and quality of ready-to-eat

ham in modified atmospheric packaging during storage. *Journal of Food Science*, *85*, 1203–1212. doi:10.1111/1750-3841.15072

17 Mahnot, N. K., Mahanta, C. L., Farkas, B., Keener, K., & **Misra**, **N.** (2019). Atmospheric cold plasma inactivation of *Escherichia coli* and *Listeria monocytogenes* in tender coconut water: inoculation and accelerated shelf-life studies. *Food Control*, *106*, 106678. doi:10.1016/j.foodcont.2019.06.004

18 Mahnot, N. K., Mahanta, C. L., Keener, K., & **Misra**, **N.** (2019). Strategy to achieve a 5-log *Salmonella* sp. inactivation in tender coconut water using high voltage atmospheric cold plasma (HVACP). *Food Chemistry*, *284*, 303–311. doi:10.1016/j.foodchem.2019.01.084

19 **Misra**, **N.** & Schlüter, O. (2019). Securing the food production chain through cold plasma technologies (Editorial Note for Special Issue). *Innovative Food Science & Emerging Technologies*, *53*, 1–2. doi:10.1016/j.ifset.2019.04.001

20 **Misra**, **N.**, Yadav, B., Roopesh, M., & Jo, C. (2019). Cold plasma for effective fungal and mycotoxin control: mechanisms, inactivation effects and applications. *Comprehensive Reviews in Food Science & Food Safety*, *18*, 106–120. doi:10.1111/1541-4337.12398

21 **Misra**, **N.**, Yepez, X., Xu, L., & Keener, K. (2019). In-package cold plasma technologies. *Journal of Food Engineering*, *244*, 21–31.

22 **Misra**, **N.**, Ziuzina, D., Han, L., Cullen, P., Mosnier, J., Moiseev, T., … Bourke, P. (2019). Investigation of a large gap cold plasma reactor for continuous in-package decontamination of fresh strawberries and spinach. *Innovative Food Science & Emerging Technologies*, *102229*. doi:10.1016/j.ifset.2019.102229

23 Thomas-Popo, E., Mendonca, A., **Misra**, **N.**, Little, A., Wan, Z., Moutiq, R., … Keener, K. (2019b). Inactivation of shiga-toxin-producing *Escherichia coli*, *Salmonella enterica* and natural microflora on tempered wheat grains by atmospheric cold plasma. *Food Control*, *104*, 231–239. doi:10.1016/j.foodcont.2019.04.025

24 Upadhyay, R., Thirumdas, R., Deshmukh, R., Annapure, U., & **Misra**, **N.** (2019). An exploration of the effects of low-pressure plasma discharge on the physico-chemical properties of chia (*Salvia hispanica* l.) flour. *Journal of Engineering and Processing Management*, *11*(2), 73–80.

25 Gavahian, M., Chu, Y.-H., Khaneghah, A. M., Barba, F. J., & **Misra**, **N.** (2018). A critical analysis of the cold plasma induced lipid oxidation in foods. *Trends in Food Science & Technology*, *77*, 32–41. doi:10.1016/j.tifs.2018.04.009

26 Kultur, G., **Misra**, **N.**, Barba, F. J., Koubaa, M., Gökmen, V., & Alpas, H. (2018). Effect of high hydrostatic pressure on background microflora and furan formation in fruit purée based baby foods. *Journal of Food Science & Technology*, *55*, 985–991. doi:10.1007/s13197-017-3011-z

27 **Misra**, **N.**, Martynenko, A., Chemat, F., Paniwnyk, L., Barba, F., & Jambrak, A. (2018). Thermodynamics, transport phenomena, and electrochemistry of external field-assisted nonthermal food technologies. *Critical Reviews in Food Science & Nutrition*, *58*, 1832–1863. doi:10.1080/10408398.2017.1287660

28 **Misra**, **N.**, Phalak, R., & Martynenko, A. (2018). A microscopic computer vision algorithm for autonomous bubble detection in aerated complex liquids. *Journal of Food Engineering*, *238*, 54–60. doi:10.1016/j.jfoodeng.2018.06.007

29 **Misra**, **N.**, Yong, H. I., Phalak, R., & Jo, C. (2018). Atmospheric pressure cold plasma improves viscosifying and emulsion stabilizing properties of xanthan gum. *Food Hydrocolloids*, *82*, 29–33. doi:10.1016/j.foodhyd.2018.03.031

30 Onur, İ., **Misra**, **N.**, Barba, F. J., Putnik, P., Lorenzo, J. M., Gökmen, V., & Alpas, H. (2018). Effects of ultrasound and high pressure on physicochemical properties and HMF formation in Turkish honey types. *Journal of Food Engineering*, *219*, 129–136. doi:10.1016/j.jfoodeng.2017.09.019

31 Kultur, G., **Misra**, **N.**, Barba, F. J., Koubaa, M., Gökmen, V., & Alpas, H. (2017). Microbial inactivation and evaluation of furan formation in high hydrostatic pressure (HHP) treated vegetable-based infant food. *Food Research International*, *101*, 17–23. doi:10.1016/j.foodres.2017.07.064

32 **Misra**, **N.** & Jo, C. (2017). Applications of cold plasma technology for microbiological safety in meat industry. *Trends in Food Science & Technology*, *64*, 74–86. doi:10.1016/j.tifs.2017.04.005

33 **Misra**, **N.**, Koubaa, M., Roohinejad, S., Juliano, P., Alpas, H., Inácio, R., … Barba, F. (2017). Landmarks in the historical development of twenty first century food processing technologies. *Food Research International*, *97*, 318–339. doi:10.1016/j.foodres.2017.05.001

34 Pankaj, S., Bueno-Ferrer, C., **Misra**, **N.**, O'Neill, L., Bourke, P., & Cullen, P. (2017). Effects of cold plasma on surface, thermal and antimicrobial release properties of chitosan film. *Journal of Renewable Materials*, *5*(1), 14–20. doi:10.7569/JRM.2016.634105

35 Kadam, S., **Misra**, **N.**, & Zaima, N. (2016). Mass spectrometry based chemical imaging of foods. *RSC Advances*, *6*(40), 33537–33546. doi:10.1039/c6ra02269c

36 **Misra**, **N.**, Pankaj, S., Segat, A., & Ishikawa, K. (2016). Cold plasma interactions with enzymes in foods and model systems. *Trends in Food Science & Technology*, *55*, 39–47. doi:10.1016/j.tifs.2016.07.001

37 Pal, P., Kaur, P., Singh, N., Kaur, A., **Misra**, **N.**, Tiwari, B., … Virdi, A. (2016). Effect of nonthermal plasma on physico-chemical, amino acid composition, pasting and protein characteristics of short and long grain rice flour. *Food Research International*, *81*, 50–57. doi:10.1016/j.foodres.2015.12.019

38 Sarangapani, C., **Misra**, **N.**, Milosavljevic, V., Bourke, P., O'Regan, F., & Cullen, P. (2016). Pesticide degradation in water using atmospheric air cold plasma. *Journal of Water Process Engineering*, *9*, 225–232. doi:10.1016/j.jwpe.2016.01.003

39 Segat, A., **Misra**, **N.**, Cullen, P., & Innocente, N. (2016). Effect of atmospheric pressure cold plasma (ACP) on activity and structure of alkaline phosphatase. *Food & Bioproducts Processing*, *98*, 181–188. doi:10.1016/j.fbp.2016.01.010

40 Ziuzina, D., **Misra**, **N.**, Cullen, P., Keener, K., Mosnier, J., Vilaró, I., … Bourke, P. (2016). Demonstrating the potential of industrial scale in-package atmospheric cold plasma for decontamination of cherry tomatoes. *Plasma Medicine*, *6*(3-4), 397–412. doi:10.1615/PlasmaMed.2017019498

41 Chapwanya, M. & **Misra**, **N.** (2015a). A mathematical model of meat cooking based on polymer-solvent analogy. *Applied Mathematical Modelling*, *39*(14), 4033–4043. doi:10.1016/j.apm.2014.12.015

42 Chapwanya, M. & **Misra**, **N.** (2015b). A soft condensed matter approach towards mathematical modelling of mass transport and swelling in food grains. *Journal of Food Engineering*, *145*, 37–44. doi:10.1016/j.jfoodeng.2014.08.010

43 **Misra**, **N.** (2015a). The contribution of non-thermal and advanced oxidation technologies towards dissipation of pesticide residues. *Trends in Food Science & Technology*, *45*(2), 229–244. doi:10.1016/j.tifs.2015.06.005

44 **Misra**, **N.**, Kaur, S., Tiwari, B., Kaur, A., Singh, N., & Cullen, P. (2015). Atmospheric pressure cold plasma (ACP) treatment of wheat flour. *Food Hydrocolloids*, *44*, 115–121. doi:10.1016/j.foodhyd.2014.08.019

45 **Misra**, **N.**, Keener, K., Bourke, P., & Cullen, P. (2015). Generation of in-package cold plasma and efficacy assessment using methylene blue. *Plasma Chemistry & Plasma Processing*, *35*(6), 1043–1056. doi:10.1007/s11090-015-9638-5

46 **Misra**, **N.**, Pankaj, S., Frias, J., Keener, K., & Cullen, P. (2015). The effects of nonthermal plasma on chemical quality of strawberries. *Postharvest Biology & Technology*, *110*, 197–202. doi:10.1016/j.postharvbio.2015.08.023

47 **Misra**, **N.**, Sullivan, C., & Cullen, P. (2015). Process analytical technology (PAT) and multivariate methods for downstream processes (**Invited Review**). *Current Biochemical Engineering*, *2*, 1–13. doi:10.2174/2213385203666150219231836

48 Pankaj, S., Bueno-Ferrer, C., **Misra**, **N.**, O'Neill, L., Tiwari, B., Bourke, P., & Cullen, P. (2015a). Characterization of dielectric barrier discharge atmospheric air cold plasma treated gelatin films. *Food Packaging & Shelf Life*, *6*, 61–67. doi:10.1016/j.fpsl.2015.09.002

49 Pankaj, S., Bueno-Ferrer, C., **Misra**, **N.**, O'Neill, L., Tiwari, B., Bourke, P., & Cullen, P. (2015b). Dielectric barrier discharge atmospheric air plasma treatment of high amylose corn starch films. *LWT - Food Science and Technology*, *63*(2), 1076–1082. doi:10.1016/j.lwt.2015.04.027

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