



Dr. Anil Kumar Siroha

Assistant Professor (Contractual),
Department of Food Science & Technology, Chaudhary Devi Lal University, Sirsa,
Haryana (India).

Qualification

- Ph.D. Food Science & Technology (2017)**, Chaudhary Devi Lal University Sirsa, India, *Supervisor – Dr. Kawajit Singh Sandhu*
- ASRB-NET 2014(i), 2014(ii)
- **M.Sc. Food Science & Technology (2010)**, Department of Food Science & Technology, Chaudhary Devi Lal University Sirsa, India
- **B.Sc. Medical (2008)**, Government National College, Sirsa, (Kurukshetra University Kurukshetra), India

Teaching Experience

- **Assistant Professor (Contractual)**, at Department of Food Science & Technology, Chaudhary Devi Lal University Sirsa from January, 2018 to till date.

Research Area

Ph. D. thesis on title “**Characterization of native and modified starches from Indian pearl millet cultivars**”.

Currently working on:

- Isolation of starches from non-conventional sources.
- Modification of starches and their application in biodegradable films.

Research Interests

Starch, Starch modification, Bioactive compounds, Biodegradable films and Starch isolation from non-conventionalsources.

Publications

Edited Book:

1. Sneha Punia, **Anil Kumar Siroha**, Kawajit Singh Sandhu, Suresh Kumar Gahlawat, Maninder Kaur (2020). Pearl Millet: Properties, Functionality and Applications. CRC Press, a member of Taylor & Francis Group, Catalogue # 323490, ISBN: 9780367354862.

Authored Book:

1. **Anil Kumar Siroha**, Sneha Punia, Sukhvinder Singh Purewal, Kawajit Singh Sandhu (2021). Millets: Properties, Processing's, and Health Benefits. CRC Press, a member of Taylor & Francis Group, ISBN: 978-0-367-56274-8.

Hand Book:

1. Sneha Punia, **Anil Kumar Siroha**, Manoj Kumar (2021). Handbook of Cereal, Pulses, Root, and Tubers: Functionality, Health Benefits and Applications. CRC Press, a member of Taylor & Francis Group, ISBN: 9780367692506.

Peer-reviewed Journal Articles:

1. Purewal, S. S., Kamboj, R., Sandhu, K. S., Kaur, P., Sharma, K., Kaur, M., ... & **Siroha, A. K.** (2022). Unraveling the effect of storage duration on antioxidant properties, physicochemical and sensorial parameters of ready to serve Kinnow-Amla beverages. *Applied Food Research*, 2(1), 100057.
2. **Siroha, A. K.**, Bangar, S. P., Sandhu, K. S., Trif, M., Kumar, M., & Guleria, P. (2021). Effect of Cross-Linking Modification on Structural and Film-Forming Characteristics of Pearl Millet (*Pennisetum glaucum* L.) Starch. *Coatings*, 11(10), 1163. Impact factor **2.881**
3. Bangar S.P., **Siroha, A.K.**, Nehra, M., Trif, M., Ganwal, V., Kumar, S. (2021). Structural and film-forming properties of millet starches: A comparative study. *Coatings*, 11, 954. Impact factor **2.881**
4. Bangar S.P., Nehra, M., **Siroha, A.K.**, Michal, Petru, R.A., R.A. Ilyas, Urmila, Devi, P. (2021). Development and characterization of physically modified pearl millet starch-based films. *Foods*, 10, 1609. Impact factor **4.350**.
5. Nehra, M., **Siroha, A.K.**, Punia, S. & Kumar, S. (2021). Process Standardization for Bread Preparation using Composite Blend of Wheat and Pearl Millet: Nutritional, Antioxidant and Sensory Approach. *Current Research in Nutrition and Food Science*, 9 (2).
6. Sandhu, K. S., **Siroha, A. K.**, Punia, S., Sangwan, L., Nehra, M., & Purewal, S. S. (2021). Effect of degree of cross linking on physicochemical, rheological and morphological properties of sorghum starch. *Carbohydrate Polymer Technologies and Applications*, 100073.
7. Bangar, S.P., S., Sandhu, K. S., Purewal, S. S., Kaur, M., Kaur, P., **Siroha, A. K.**, ... & Kumar, M. (2021). Fermented barley bran: An improvement in phenolic compounds and antioxidant properties. *Journal of Food Processing and Preservation*, e15543. Impact factor **2.191**.
8. Punia, S., Kumar, M., **Siroha, A. K.**, Kennedy, J. F., Dhull, S. B., & Whiteside, W. S. (2021). Pearl millet grain as an emerging source of starch: A review on its structure, physicochemical properties, functionalization, and industrial applications. *Carbohydrate Polymers*, 117776. Impact factor-**9.381**
9. Punia, S., Sandhu, K. S., Grasso, S., Purewal, S.S., Kaur, M., **Siroha, A.K.**, ... & Kumar, M. (2021). Aspergillus oryzae Fermented Rice Bran: A By-product with Enhanced Bioactive Compounds and Antioxidant Potential. *Foods*, 10(1), 70. Impact factor-**4.350**.
10. Punia, S., Kumar, M., **Siroha, A.K.**, & Purewal, S.S. (2020). Rice bran oil: Emerging trends in extraction, health benefits, and its industrial application. *Rice Science*, 28(30), 1-17. Impact factor-**3.333**.
11. Karwasra, B. L., Kaur, M., Sandhu, K. S., **Siroha, A. K.**, & Gill, B. S. (2020). Formulation and evaluation of a supplementary food (Panjiri) using wheat and flaxseed flour composites: Micronutrients, antioxidants, and heavy metals content. *Journal of Food Processing and Preservation*, e14998, Impact factor **2.191**.

12. Punia, S., Dhull, S.B., & **Siroha, A.K.** (2020). Quality characteristics of muffins prepared from the replacement of wheat with barley: Nutritional, anti-oxidative and microbial potential. *Carpathian Journal of Food Science and Technology* (Accepted).
13. Sandhu, K. S., **Siroha, A. K.**, Punia, S., & Nehra, M. (2020). Effect of heat moisture treatment on rheological and in vitro digestibility properties of pearl millet starches. *Carbohydrate Polymer Technologies and Applications*, 100002.
14. Punia, S., Dhull, S. B., **Siroha, A.K.**, & Kumar, M. (2020). Effect of shortening substitution with olive (*Olea europaea*) oil on textural properties, sensorial characteristics and fatty acid composition of muffins. *Journal of Food Processing and Preservation*, e14839, Impact factor **2.191**.
15. Punia, S., Dhull, S.B., Sandhu, K.S., Kaur, M., **Siroha, A. K.** (2020). Kinetic, rheological and thermal studies of Flaxseed (*Linum usitatissimum* L.) oil and its utilization. *Journal of Food Science and Technology*, 57, 4014–4021, Impact factor **2.701**.
16. Punia, S., Sandhu, K. S., Dhull, S. B., **Siroha, A. K.**, Purewal, S. S., Kaur, M., & Kidwai, M. K. (2020). Oat starch: Physico-chemical, morphological, rheological characteristics and its application-A review. *International Journal of Biological Macromolecules*, 154, 493-498. Impact factor-**6.953**.
17. **Siroha, A. K.**, Punia, S., Kaur, M., & Sandhu, K. S. (2020). A novel starch from *Pongamia pinnata* seeds: Comparison of its thermal, morphological and rheological behaviour with starches from other botanical sources. *International Journal of Biological Macromolecules*, 143, 984-990. Impact factor-**6.953**.
18. **Siroha, A. K.**, Punia, S., Sandhu, K. S., & Karwasra, B. L. (2020). Physicochemical, pasting, and rheological properties of pearl millet starches from different cultivars and their relations. *Acta Alimentaria*, 49(1), 49-59. Impact Factor **0.650**.
19. Punia, S., Sandhu, K. S., **Siroha, A. K.**, & Dhull, S. B. (2019). Omega 3-Metabolism, Absorption, Bioavailability and health benefits-A review. *Pharma Nutrition*, 100162.
20. **Siroha, A. K.**, Sandhu, K. S., Kaur, M., & Kaur, V. (2019). Physicochemical, rheological, morphological and in vitro digestibility properties of pearl millet starch modified at varying levels of acetylation. *International Journal of Biological Macromolecules*, 131, 1077-1083. Impact factor-**6.953**.
21. Punia, S., **Siroha, A. K.**, Sandhu, K. S., & Kaur, M. (2019). Rheological behavior of wheat starch and barley resistant starch (type IV) blends and their starch noodles making potential. *International Journal of Biological Macromolecules*, 130, 595-604. Impact factor-**6.953**.
22. **Siroha, A. K.**, Sandhu, K. S., & Punia, S. (2019). Impact of octenyl succinic anhydride on rheological properties of sorghum starch. *Quality Assurance and Safety of Crops & Foods*, 11(3), 221-229. Impact factor-**0.922**.
23. Punia, S., **Siroha, A. K.**, Sandhu, K. S., & Kaur, M. (2019). Rheological and pasting behavior of OSA modified mungbean starches and its utilization in cake formulation as fat replacer. *International Journal of Biological Macromolecules*, 128, 230-236. Impact factor-**6.953**.
24. Punia, S., Sandhu, K. S., & **Siroha, A. K.** (2019). Difference in protein content of wheat (*Triticum aestivum* L.): Effect on functional, pasting, color and antioxidant properties. *Journal of the Saudi Society of Agricultural Sciences*, 18(4), 378-384.

25. **Siroha, A. K.**, & Sandhu, K. S. (2018). Physicochemical, rheological, morphological, and in vitro digestibility properties of cross-linked starch from pearl millet cultivars. *International Journal of Food Properties*, 21(1), 1371-1385. Impact Factor-**1.808**.
26. Sandhu, K. S., & **Siroha, A. K.** (2017). Relationships between physicochemical, thermal, rheological and in vitro digestibility properties of starches from pearl millet cultivars. *LWT-Food Science and Technology*, 83, 213-224. Impact Factor- **4.952**
27. **Siroha, A. K.**, & Sandhu, K. S. (2017). Effect of heat processing on the antioxidant properties of pearl millet (*Pennisetum glaucum* L.) cultivars. *Journal of Food Measurement and Characterization*, 11(2), 872-878. Impact Factor-**2.431**.
28. **Siroha, A. K.**, Sandhu, K. S., & Kaur, M. (2016). Physicochemical, functional and antioxidant properties of flour from pearl millet varieties grown in India. *Journal of Food Measurement and Characterization*, 10(2), 311-318. Impact Factor-**2.431**.

Book Chapters:

1. **Siroha, A. K.**, Punia, S. (2021). Proso Millet Flour and Starch: Properties and Their Applications. In Punia, S., Siroha, A.K., Kumar, M. (eds). *Handbook of Cereals, Pulses, Roots, and Tubers*, CRC Press, Taylor and Francis Group, Boca Raton, London, New York, PP. 115-132.
2. Punia, S., **Siroha, A.K.**, Kumar, S. (2021). Oat (*Avena Sativa*): Functional Components. In Punia, S., Siroha, A.K., Kumar, M. (eds). *Handbook of Cereals, Pulses, Roots, and Tubers*, CRC Press, Taylor and Francis Group, Boca Raton, London, New York, PP. 115-132.
3. Punia, S., **Siroha, A.K.**, Kumar, S. (2021). Sesame: An Emerging Functional Food. In Punia, S., Siroha, A.K., Kumar, M. (eds). *Handbook of Cereals, Pulses, Roots, and Tubers*, CRC Press, Taylor and Francis Group, Boca Raton, London, New York, PP. 115-132.
4. Punia, S., Dhull, S.B., **Siroha, A.K.**, Sandhu, K.S., Dhaka, V. (2020). Mechanism of Action of Essential Fatty Acids. In: Dhull, S.B., Punia, S., Sandhu, K.S. (eds), *Essential Fatty Acids Sources, Processing Effects, and Health Benefits*, CRC Press, Taylor and Francis Group, Boca Raton, London, New York.
5. Punia, S., **Siroha, A.K.**, Sandhu, K.S., Gahlawat, S.K., Kaur, M. (2020). Pearl Millet: A Drought Arrested Crop. In: Punia, S., Siroha, A.K., Sandhu, K.S., Gahlawat, S.K., Kaur, M. (eds), *Pearl Millet: Properties, Functionality and its Applications*. CRC Press, Taylor and Francis Group, Boca Raton, London, New York. PP. 1-14.
6. Sandhu, K.S., Kaur, P., **Siroha, A.K.**, Purewal, S.S. (2020). Phytochemicals and Antioxidant Properties in Pearl Millet: A Cereal Grain with Potential Applications. In: Punia, S., Siroha, A.K., Sandhu, K.S., Gahlawat, S.K., Kaur, M. (eds), *Pearl Millet: Properties, Functionality and its Applications*. CRC Press, Taylor and Francis Group, Boca Raton, London, New York. PP. 33-50.
7. Punia, S., **Siroha, A.K.**, Dhull, S.B. (2020). Effects of Different Milling Processes on Pearl Millet. In: Punia, S., Siroha, A.K., Sandhu, K.S., Gahlawat, S.K., Kaur, M. (eds), *Pearl Millet: Properties, Functionality and its Applications*. CRC Press, Taylor and Francis Group, Boca Raton, London, New York. PP. 51-70.
8. **Siroha, A.K.**, Punia, S. (2020). Starch: Structure, Properties and Applications. In: Punia, S., Siroha, A.K., Sandhu, K.S., Gahlawat, S.K., Kaur, M. (eds), *Pearl Millet: Properties, Functionality and its Applications*. CRC Press, Taylor and Francis Group, Boca Raton, London, New York. PP. 71-90.

9. **Siroha, A.K.**, Punia, S., Purewal, S.S., Sharma, L., Singh, A. (2020). Impact of Different Modifications on Starch Properties. In: Punia, S., Siroha, A.K., Sandhu, K.S., Gahlawat, S.K., Kaur, M. (eds), Pearl Millet: Properties, Functionality and its Applications. CRC Press, Taylor and Francis Group, Boca Raton, London, New York. PP. 91-114.
10. Pooja, **Siroha, A.**, Beniwal, V., Nehra, M., Kidwai, M.K.(2020). Dietary fibers and health importance. In: Nehra, M., Nain, V. and Amanjyoti (eds). Miraculous Food World. Shree publishers and Distributers, New Dehli, India. PP. 142-158.
11. Punia, S., Sandhu, Maninder Kaur, **Anil Kumar Siroha** (2019). Nanotechnology: A Successful Approach to Improve Nutraceutical Bioavailability. In: Prasad R., Kumar V., Kumar M., Choudhary D. (eds) Nanobiotechnology in Bioformulations. Nanotechnology in the Life Sciences. Springer, Switzerland. PP- 119-133.
12. Sandhu, K.S., **Siroha, A.K.**, Kaur, M., Punia, S. (2018). Pearl Millet- Flour and Starch Properties. In: Technologies in Food Processing, Sharma, H.K. Panesar, P.S.(eds) Apple Academic Press (Exclusive worldwide distribution by CRC Press, a member of Taylor & Francis Group), USA. PP- 289-314.
13. Sandhu, K. S., Sharma, L., Singh, C., **Siroha, A. K.** (2017). Recent Advances in Biodegradable Films, Coatings and Their Applications. In: Gahlawat, S.K., Slar, R.K., Siwach, P., Duhan, J.S., Kumar,S., Kaur, P. (eds) Plant Biotechnology: Recent Advancements and Developments. Springer, Singapore. PP-271-296.