



Shanghai Cooperation Organization- 1st Young Scientists Conclave (SCO-YSC 2020)
A virtual event organised in India at CSIR-IICT, Hyderabad
Theme: Shaping SCO-STI Partnership: Young Scientists Perspectives

SCO-Young Scientist Profile

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Designation

& affiliation:

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Details of research work carried out in S&T (limit to 200 words)

Development of novel high-quality eco-products with functional ingredients from secondary raw materials of grain crops for the prevention of nutritional diseases.

Research is devoted to the development of an assortment of functional food products with functional ingredients from secondary raw materials of cereals, obtained as a result of their deep processing by biotransformation of a polymer complex using hydrolase enzymes as the most effective way to obtain functional ingredients - prebiotics and antioxidants.

It is expected that the results obtained will contribute to the development of an innovative methodology in the field of improved technological solutions for functional purposes and the use of recycled products. An innovative approach is to regulate and enrich the daily human diet by converting low-cost agricultural by-products into functional food ingredients, thereby regulating the health of the nation. The creation of healthy foods using plant-based recycled materials is expected to bring significant socio-economic benefits, increased economic returns for farmers and the agri-food industry, and most importantly, a healthier population.

Associated SCO-YSC Theme: Agriculture and Food Processing

Statement of Innovation (Brief information on new innovative ideas including startup / entrepreneurs- limit to 150 words)

The novelty of research lies in the production of functional products based on the use of the biologically active potential of secondary raw materials of grain crops. In the long term, the value of research relates to the potential cost-effectiveness of using functional ingredients (polyphenols, xylooligosaccharides) from recycled cereals in light of the creation of affordable, nutritious and high quality organic products. Innovation in this project will underpin the creation of fortified foods and functional ingredients that have high nutritional value, palatability, aroma, taste and long shelf life.

Thus, new grain bars, dry cereals, flour and confectionery products, milk-based products will meet the population's needs for polyphenols by about 40%, prebiotics - by 50%. For the first time, this approach will be substantiated and combined with an assessment of the physiological effect of developed products on the organism of rats in terms of prevention of diabetes, overweight and cardiovascular diseases.

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Major awards/ Achievements (*Upto 3 awards*)

1. Four Grants of the Russian Federation President
2. Prize to them. P.A.Stolypin for outstanding achievements in the field of education (Saratov region)
3. Gold medal at the international exhibition "Golden Autumn", 2017.

Possible collaboration with SCO countries (*limit to 100 words*)

Research activities, innovation work, academic mobility, mutual publications

Key words (*relevant to research work conducted as well as proposed innovation, 5-6 words*)

Polyphenols, Prebiotics, Xylooligosaccharides, Secondary products of grain processing.