*Annexure 1*

सत्यमेव जयते

Department of Science and Technology

# SCO -YOUNG SCIENTISTS CONCLAVE

**November 24 - 28, 2020**
**A virtual conclave**
**CSIR – Indian Institute of Chemical Technology**
**Hyderabad, India**

Shanghai Cooperation Organisation

## Shaping SCO-STI Partnership: Young Scientists Perspectives

# Nomination /Registration form

**(Separate form to be provided for each participant)**

CHINA

.....

**[Name of the SCO Country]**

.....

***REQUIRED DOCUMENTS***

1) Nomination form
2) Nominee's Curriculum Vitae/brief Biography;
3) A photo of nominee (image must be larger than 250*300 pixels)

***Last date for nomination submission:*** **19th October, 2020**

**SCO – 1st YOUNG SCIENTISTS CONCLAVE**
**Shaping SCO-STI Partnership: Young Scientists Perspectives**

**NOMINEE'S DETAILS/INFORMATION**

| | |
|---|---|
| Country Name : | China |
| Last Name: Tian | First Name: Kangming |
| Date of Birth : (DD/MM/YYYY) | 27/06/1985 |
| Address: | No. 29, Ave 13th, TEDA, Tianjin, China |
| Telephone: +8615961761896 | Email: jinantkm@163.com; kangmingtian@tust.edu.cn |
| Title: Dr. | Gender: Male |
| Institution/Affiliation: | Tianjin University of Science and Technology |
| Field of Science and Technology: | Biotechnology; Food and Agriculture |

**ACADEMIC QUALIFICATION: degree and discipline** (please indicate where appropriate)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Degree:** | Bachelors | | Masters | | PhD | √ | Other | |
| **Discipline:** | | | | | Fermentation Engineering | | | |

**Nomination Statement (up to 300 words):** Please describe area of expertise in which the nominee has demonstrated innovation excellence. *Please provide the information in English.*

Metabolic engineering for the construction of robust producers

Metabolic engineering of E. coli for efficient production of D-lactate, L-lactate, succinate, 1,5-pentanediamine and ethanol from glucose or glycerol.

Large scale fermentation of industrial enzymes

Development of novel processes for efficient enzymes production under large scale fermentation (working volume from 30 thousands liters to 200 thousands liters) including amylase, pullulanase and glucoamylase .

Enzyme cocktail for oligosaccharides preparation

Research on enzymes properties and their combined functions for functional sugars release from polysaccharides or transglycosylation from oligosaccharides including the production of isomalto-oligosaccharides (IMOs), fructooligosaccharides (FOS), galactooligosaccharides (GOS), xylooligosaccharides (XOS), pectic oligosaccharides (POS) and mannanooligosaccharides (MOS).

New enzymes: Finding, Cloning, Expression & Application

Enzyme library construction from both Aspergillus niger and Thermomyces lanuginosus, including proteases, lipases, carbohydrates hydrolases and other needed enzymes were cloned and expressed in Pichia pastoris.

**Innovative Project Statement (up to 300 words):** Please provide brief information on the nominee's innovative idea. *Please provide the information in English.*

Introduction

Fruit, vegetable and crops are all of the basic foods in our daily life. Due to the change of our life style, foods are no longer judged only in terms of taste and immediate nutritional needs, but also in terms of their ability to improve the health and well-being of consumers. However, nutrient composition of fruit, vegetable and crops is very complex and difficult to assess by traditional methods. Here, we declare a serials of novel strategies for oligosaccharides and peptides preparation from fruit, vegetable and crops using enzymes cocktail.

Research Contents

In this research, the hydrolases including protease, lipase, carbohydrates hydrolases and other needed enzymes were selected to make the suitable cocktail for the manufacturing of natural fruit, vegetable and crops to completely release of functional oligosaccharides and peptides. Finally, the novel processes were establishment due the properties of the enzyme cocktail and the components of the raw materials to produce nutrient rich syrup from fruit, vegetable and crops directly.

Conclusion

High efficiency and low cost processes for the release of functional oligosaccharides and peptides from fruit, vegetable and crops were established. The application of new comprehensive processing technology of agricultural products will significantly enhance the value of agricultural products and help to promote public health.

**Participation in Innovation Competitions/Awards/Achievements:** Please list previous participation in innovation competitions and awards/achievements, if any. *Please provide the information in English.*

[1] Kang-ming Tian, J. Wang, Z. Zhang, L. Cheng, P. Jin, S. Singh, B. Prior, Z. Wang*. Enzymatic preparation of fructooligosaccharides-rich burdock syrup with enhanced antioxidative properties. Electron J Biotechnol, 2019, 40(2019): 71-77(IF=1.403). https://www.sciencedirect.com/science/article/pii/S0717345819300259

[2] Kang-ming Tian, D. Niu*, X. Liu, B. A. Prior, L. Zhou, F. Lu, S. Singh, Z. Wang*. Limitation of thiamine pyrophosphate supply to growing Escherichia coli switches metabolism to efficient D-lactate formation. Biotechnol Bioeng, 113(1): 181-188. 2016 (IF=4.243). http://onlinelibrary.wiley.com/doi/10.1002/bit.25699/full

[3] Kang-ming Tian, X. Chen, W. Shen, B. A. Prior, G. Shi, S. Singh, Z. Wang*. High-efficiency conversion of glycerol to D-lactic acid with metabolically engineered Escherichia coli. Afr J Biotechnol, 11(21): 4860-4867，2012 . http://www.academicjournals.org/journal/AJB/article-abstract/89B605A38973

[4] Kang-ming Tian, G. Shi, F. Lu, S. Singh, Z. Wang. High-efficiency L-lactate production from glycerol by metabolically engineered Escherichia coli. Chin J Biotech, 2013, 29(9): 1268-1277. http://www.ncbi.nlm.nih.gov/pubmed/24409690

[5] Kang-ming Tian, Zhou L, Chen XZ, W. Shen, G. Shi, S. Singh, F. Lu, Z. Wang. Temperature-switched high-efficient D-lactate production from glycerol. Chin J Biotech, 2013, 29(1): 111-114. http://www.ncbi.nlm.nih.gov/pubmed/23631124

[6] X. Chen*, Kang-ming Tian, D. Niu, W. Shen, G. Algasan, S. Singh, Z. Wang*. Efficient bioconversion of crude glycerol from biodiesel to optically pure D-lactate by metabolically engineered Escherichia coli. Green Chem, 16: 342-350, 2014 (Co-first author, IF=8.506). http://www.sciencedirect.com/science/article/pii/S0734975013000487;

[7] L. Zhou, Kang-ming Tian, D. Niu, W. Shen, G. Shi, S. Singh, Z. Wang*. Improvement of D-lactate productivity in recombinant Escherichia coli by coupling production with growth. Biotechnol Lett, 34(6): 1123-1130, 2012 (Co-first author, IF=1.853) . http://link.springer.com/article/10.1007%2Fs10529-012-0883-x

**DECLARATION BY THE CANDIDATE:** Kangming Tian

I hereby declare that all the information given above is true to the best of my knowledge. I accept to participate in the virtual conference of1st SCO -Young ScientistsConclave in India, and will attend the entire programme of five days.

Place: ---------- Tianjin, China

Date: ---------- 20 Nov 2020

Signature of the nominee: ----------

**Name of the nominating authority:**
(Contact details, i.e. telephone, email and designation)

Na Tang
Director of Department of Science and Technology in TUST
Tel: +8613820501113; Email: tjtangna@tust.edu.cn

Place: ---------- Tianjin China

Date: ---------- 20 Nov 2020

Signature: ----------

---

**NB: Please remember to include the followingalong with Nomination Form:**

- **Nominee's Curriculum Vitae/Biography at the end of nomination form.**