

## SCHOOL OF SCIENCES



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### EDUCATIONAL QUALIFICATIONS

Ph.D. (Food Science and Technology), 2016, Indian Institute of Technology Kharagpur, West Bengal, India.

M.Sc. (Biochemistry), 2007, CMRIMS College, Bangalore University, Karnataka, India.

B.Sc. (Chemistry, Biochemistry, Microbiology), 2004, TSR and TBK Degree College, Andhra Univeristy

### Work Experience

Assistant Professor (08/2018-ongoing), Indrashil University, Rajpur, Mehsana, Gujarat, India  
Assistant Professor (04/2017-07/2018), Indrashil Institute of Science and Technology, Rajpur, Mehsana, Gujarat, India

Senior Research fellow (04/2010-04/2012), Indian Institute of Technology Kharagpur, West Bengal, India

### SUBJECTS TAUGHT

- Macromolecules structure and functions [BIO-403] [CH 4-105], [BIO 1-203]
- Enzymology [BIO-408]
- Metabolism and Tissue Functions [BIO 2 103]
- Analytical Tools and Techniques [BIO-405]
- Biochemistry Practical [BIO 1 106]

### RESEARCH AREA

Novel Process development of Mix biopolymer gels for targeted application, fortification of vitamins, 3D food printing

Major research focus on food science and novel technology including non-thermal extraction and structural characterization of food ingredients, reconstitution of powders, mix biopolymer gels formulation by varying extrinsic parameters such as concentration, temperature, pH, time molecular weight, size, mix gels characterization using rheological, structural, functional, thermal and morphological analysis, optimization and process validation using statistical analysis. Our research is commodity focused only with targeted application.

Industrial relevance of past work: Raw *A. vera* gel/juice is highly unstable hence addition of an extra gelling and stabilizing agent in the aloe solution or even with the powder to attain gel strength is the common market practice. As shown in Figure 1 our study certainly adds novelty for obtaining reconstituted *A. vera* gels with standardized protocols and optimized process variables, which could be affordable and meets industrial as well as consumer demand. The obtained natural reconstituted *A. vera* gels can be further incorporate in products as novel a gelling agent.

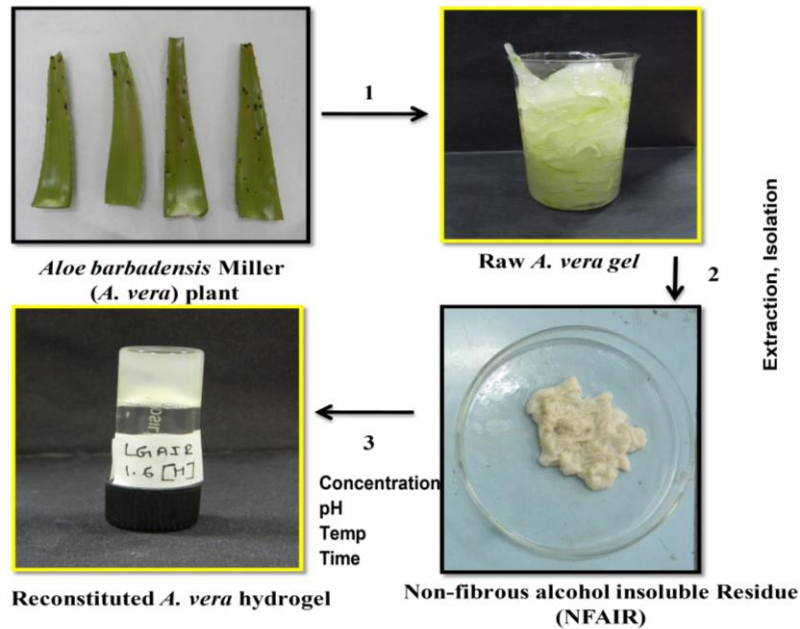


Figure 1: Reconstituted Aloe vera hydrogels

**PROJECTS**

**Title:** NA  
**Amount:** NA  
**Role:** NA  
**Agency:** NA  
**Duration:** NA

**CORE GROUP**

**Name:** NA  
**Date of joining:** NA  
**Topic:** NA

**HONOR/AWARD**

- NA

**MEMBERSHIP**

- Indian Society of Rheology (ISR)

## KEY PUBLICATIONS

- **P. Kiran**, S. Chakraborty, & P. S. Rao, (2018). Rheological, functional and morphological characterization of reconstituted Aloe vera gels at different levels of pH and concentration: Novel concepts of reconstituted Aloe vera gels formation. **International Journal of Biological Macromolecules**. 120(Part A): 414-421 (**Impact factor: 3.909**).
- **P. Kiran**, N. Swami, and P. S. Rao, (2016) “Viscoelastic behavior of reconstituted *Aloe vera* hydrogels as a function of concentration and temperature”, **Int Journal of Food Prop.** DOI:10.1080/10942912.2016.1168436 (**Impact factor: 1.845**).
- **P. Kiran** and P. S. Rao, (2016) “Development and characterization of reconstituted hydrogel form *Aloe vera* (*Aloe barbadensis* Miller) powder”, **Journal of Food Measurement and Characterization**. 10(3): 411-424, DOI: 10.1007/s11694-016- 9320-5 (**Impact factor: 1.181**)
- **P. Kiran** and P. S. Rao, (2014) “Rheological and structural characterization of prepared aqueous *Aloe vera* dispersions”, **Food Res Int.** 62: 1029-1037 (**Impact factor: 3.52**).
- N. Swami, **P. Kiran** and P. S. Rao, (2014) “Rheological characterization of *Aloe vera* (*Aloe barbadensis* Miller) juice concentrates”, **Journal Food Process Eng.** 37(4): 375-386 (**Impact factor: 1.955**).

**BOOKS:** NA

**BOOK CHAPTERS:** NA

## CONFERENCES

- **P. Kiran** and P. S. Rao, presentation on “*Reconstituted Aloe vera hydrogel formation and its application in high methoxy (HM) pectin mix gel formation*” at International symposium on Food Rheology and Structure (ISFRS)-2019 held at ETH University, Zurich, Switzerland (17<sup>th</sup>-20<sup>th</sup> June 2019)
- **P. Kiran** and P. S. Rao, presentation on “*Effect of process parameters on the viscoelastic, functional and morphological properties of reconstituted Aloe vera (Aloe barbadensis Miller) gels*”, at International Complex Fluids Conference held at Indian Institute of Science Education and Research (IISER), Pune, India (January, 2016).
- **P. Kiran** and P. S. Rao, presentation on “*Development of reconstituted Aloe vera (Aloe barbadensis Miller) hydrogels based on rheological characterization*”, at National symposium on Complex Fluids held at Engineering Mechanics Unit, JNCASR, Bangalore, India (December, 2014).
- **P. Kiran**, S. Mandal, P. S. Rao and A. Chandra, “*Effect of biotemplate rheology on properties of multiferroic ceramics*”, at India-Singapore Joint Physics Symposium held at the Department of Physics, IIT-Kharagpur, India (February, 2013).
- **P. Kiran**, S. Mandal, P. S. Rao and A. Chandra, presentation on “*Use of biotemplates to tailor the physical properties of multiferroic ceramics*”, at International Conference on Theoretical and Applied Physics held at the Department of Physics, IIT-Kharagpur, India (December, 2011).

## **WORKSHOP/TRAINING**

- Attended one day (21<sup>st</sup> September 2019) Faculty Development Programme for faculties for technical courses: Indian Institute of Teachers Education, Gandhinagar, India
- Attended 1 day (12<sup>th</sup> Oct 2017) “*Extended Rheology Characterization*” training: Antoon Paar at Indian Institute of Technology (IIT), Gandhinagar
- Attended 5 days (4<sup>th</sup> -8<sup>th</sup> Dec 2017) AICTE-QIP short term course on “*Novel Technologies for Food Product Manufacturing and Shelf Life Extension*”: Indian Institute of Technology, Kharagpur.
- Participated one day (22<sup>nd</sup> March 2013) National workshop cum demonstration on “*High Pressure Process (HPP) on highly perishable commodities*”: Indian Institute of Technology Kharagpur.
- 4 Months (August- Nov 2009) Trained in handling analytical instrumentation HPLC and GC for characterizing pharmaceutical samples viz., tablets, ointments and capsules: Derex lab, Hyderabad, India.

## **PATENTS/ TECHNOLOGY TRANSFER**

- NA

## **OTHER INFORMATIONS**

Editorial member, Journal name: NA

Reviewer of Peer-Reviewed journals

Canadian Institute of Food Science and Technology (CIFST), Journal of Food Measurement and Characterization

Position of responsibility

Two days 24<sup>th</sup> -25<sup>th</sup> Feb 2011, Organizing secretary in INAE National Symposium on Emerging Innovative Technologies for Assurance of Quality and Safety in Processed Food (FoQSAT2011): Agricultural and Food Engineering Department, IIT-Kharagpur.

Extracurricular for students

Scientific demonstrations of some classical rheological experiments for educational purposes available at Indian Society of Rheology (ISR) web link i.e., <http://isr.org.in/#/outreach>.