



July 20, 2017

TO: University Students participating in the Citri-Fi® 125 Innovation Challenge

Last year, Fiberstar sponsored a student design competition called the Citri-Fi 125 Innovation Challenge and it was a resounding success as both students and Fiberstar benefited from working together to come up with over 26 great submissions. The judging panel selected the top six entries, who split a prize pool of \$25,000. Because of this success, the student innovation challenge is being planned again with the same prize pool for the top six winners but the competition committee added another category for the top entry in a non-food/beverage category, e.g. industrial, construction, or energy applications, to receive a separate \$5,000 award.

The enclosed outline of the challenge describes the awards, details, and rules for the competition. We'd appreciate your willingness to support and spread the word for this opportunity and would welcome any questions you may have.

Sincerely,

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## **Citri-Fi 125 Innovation Challenge**

### **Introduction and Overview**

Fiberstar, Inc. ([www.fiberstar.net](http://www.fiberstar.net)) is an innovative ingredient company located in River Falls, WI that has an extensive relationship with the University and research community. Fiberstar licenses technology from the University of Minnesota, where the company has its roots, and has grown into a global functional ingredient supplier that sells products in more than 60 countries around the world. This exclusively patented technology is used to manufacture Citri-Fi, a natural, highly functional fiber produced from the orange juicing process in Clewiston, Florida. Citri-Fi is offered in a number of particle sizes and co-processed variations that improve food quality, nutrition and cost savings.

At Fiberstar, we understand the value of fostering and supporting strong relationships with industry researchers and students because of the mutually beneficial results and learning activities. In order to further promote these ties, we have developed a Fiberstar Student Innovation Challenge. This contest has a total prize pool of \$30,000 (\$25,000 for the top six food and beverage entries plus \$5,000 for the top non food/beverage entry). We are inviting you to participate.

Our goals with this Innovation Challenge are to promote stronger relationships with academia, increase our knowledge base of a new type of Citri-Fi that was recently launched called Citri-Fi 125, and give students a chance to work on real world issues. The new Citri-Fi 125 product, made from citrus peel, has a clean label declaration and also has an extremely high water holding capacity and emulsification properties. The properties of the product are such that it is effective at increasing yields in meat products, emulsification and water binding in sauces, moisture retention in baked goods and emulsification in beverages. What makes the 125 version unique compared to the previously developed Citri-Fi products is it: 1) is derived from citrus peel, 2) has a different rate of hydration in aqueous solutions, 3) is from a sustainable raw material source, 4) has higher soluble and insoluble fiber content, and 5) has flavor enhancement properties for darker applications with umami notes. For instance, the Citri-Fi 125 has been found to be suitable for partial monosodium replacement to enhance flavor in multiple applications, especially in ground meats and sauces. Internally at Fiberstar, we've also been developing tomato sauce applications and further information related to using Citri-Fi 125 in tomato sauces is included with the sample kit. Once we hear back from interested parties, a sample kit will be sent out, which will include: 1) Reference Guide, 2) User's Guide, 3) one-pound samples of Citri-Fi 125FG and 125M40, 4) a demo kit, and 5) poster bulletin to help spread the word. There are likely other applications as well where Citri-Fi



125's flavor enhancement properties can be developed. The competition's objective is to create a new and novel uses for Citri-Fi 125.

The purpose and other objectives of the Fiberstar Innovation Challenge is as follows:

- To promote innovative thinking in science and engineering to sustainably solve real world issues including improving quality, cost effectiveness, incorporation of all natural ingredients, extended shelf life and improved organoleptic properties, possible replacement of chemically modified ingredients and allergens.
- To increase the application knowledge of Citri-Fi 125 and its various particle sizes, i.e. Citri-Fi 125FG (minus 100 mesh) and Citri-Fi 125M40 (minus 200 mesh).
- To provide students with a platform to collaborate with other students and science and engineering professionals to work on industries toughest challenges
- To leverage an opportunity for students to demonstrate an understanding of science and engineering to articulate scientific solutions in an easy and understandable manner
- To pursue innovative ideas in non-food applications with the sponsoring of the top award for industrial, construction, and energy applications. Innovative ideas could provide any of the following benefits: cost savings, sustainability, natural alternative (replace chemical or synthetic solutions in the marketplace), functionality or solutions for underserved or unmet demand in the market.

The Innovation Challenge will be based on the following:

- Competition for the most innovative application of Citri-Fi 125 in any category.
- The Innovation Challenge is open to students who enrolled in any University program.
- The competition could be part of a class or independent study/research project.
- Contest submissions are due no later than December 15<sup>th</sup> 2017 at 11:59 PM CST.
- 1<sup>st</sup> Place will be in the amount of \$10,000
- 2<sup>nd</sup> place: the runner up award will be in the amount of \$5000
- 3<sup>rd</sup> to 6<sup>th</sup> place award designations will be \$2500 each.
- A separate \$5,000 award will be selected for the top industrial, construction, or energy application submission that is outside of food and beverage industry.

Please note the following after the challenge was completed last year. First, the top student winners and applications of the 125 Student Challenge that were awarded last year are excluded from entering the 2017 competitions. While last year's winning Universities can enter the competition, the winners and applications are not eligible. Last year's winners were:

- 1) Citrus fiber as an effective fat blocker and yield improver in fried seafood (Oregon State University)
- 2) Laksa Paste binder (Surya University, Indonesia)
- 3) Reduced fat healthy savory extruded pork flavored snack (Washington State University)
- 4) Chicken Sausage with reduced oil & improved sensory (Sri Lanka University)
- 5) Calcium Fortification to increase CF125 viscosity in a variety of foods and Enhance Gelling Properties (University of Guelph)
- 6) Natural color stabilizer in Berry Yamme Topping (Cornell University)



In order to participate, students will leverage their science and technology knowledge to design a novel application using Citri-Fi. These concepts should be designed for scale up and global commercial distribution, taking into account market need, cost and ingredient quality. A detailed description of the rules and regulations can be found on the following pages.

## **Detailed Description of Science Innovation Challenge**

The Student Innovation Challenge is a competition for the most innovative application of Citri-Fi 125. Students will be given access to scientific literature describing technical aspects of all Citri-Fi products. Free samples of Citri-Fi will be shipped to students for use in designing and performing experiments. Proposals with strong market need and thorough justification in scientific literature will be given preference. Fiberstar will be available to answer questions pertaining to clarification of rules/guidelines. No questions will be answered pertaining to specific application but general guidance on product use will be available.

### **General Competition Rules**

- Entries must consist of a proposal for a new product innovation or solving an industry problem based on the use of Citri-Fi 125. Demonstration that a prototype was tested isn't required but is preferred and adds credibility to the entry.
- Solving an industry problem or identifying a market need that includes an explanation as to why Citri-Fi 125 is needed as part of the solution a plus.
- Proposals should consider the combination of different raw materials to provide benefits such as improved texture, mouthfeel, sweetness, stability, health & wellness, sensory properties, etc. in food applications and alternative benefits within non-food applications.
- The judges will be evaluating the rationale behind the scientific value, the technical problem solving skills, and the commercial feasibility of the ingredient combination.
- Teams may participate in the same project and rewards will be split.
- Multiple students from the same university may submit proposals.
- Understanding that the intellectual property rights for the innovation challenge will be turned over and assigned to Fiberstar.
- Contest winners will be broadcasted using various marketing communication tools, not limited to but including, press releases. Winning teams will need to obtain written approval from a University representative for Fiberstar and 3<sup>rd</sup> parties to use the University name in mass communications.

### **Limitations**

- Final submissions should be submitted electronically no later than **December 15<sup>th</sup> 2017, 11:59 PM CST** in Word, PDF, or PowerPoint format to [b.lundberg@fiberstar.net](mailto:b.lundberg@fiberstar.net)
- The competition will be conducted in English.
- All applicants agree not to claim any intellectual property rights, e.g. Patent rights, as to any material created in connection with the competition. Such intellectual property rights are transferred



to the competition sponsor, Fiberstar, Inc. Fiberstar currently licenses its technology along with many uses from the University of Minnesota and also has its own range of patents in broad range of applications.

### **Eligibility Requirements**

- Students must have completed at least one year at a technical college or four-year University.
- Industry support such as donation of ingredients or use of equipment outside from Fiberstar is allowed and should be outlined in a separate document
- Not be a student that awarded one of the top 6 awards from last year's innovation challenge.

### **Final Submissions:**

1. Teams must upload a copy of their final report as in Word, PDF and/or Power Point format to Fiberstar ([b.lundberg@fiberstar.net](mailto:b.lundberg@fiberstar.net)) no later than **December 15<sup>th</sup> 2017, 11:59 PM CST**
2. The submission must contain photographs of a prototype and respective formulations and procedures.
3. Written submissions are limited to ten (10) pages. This number DOES NOT include the title page, references, and optional 1-page appendix.
4. Written submissions must be typed, double-spaced, in 12-point font, Times New Roman font with 1" margins. All text and figures must fit on 8.5" × 11" paper.
5. There is no specific required format for the title page, though it should include the title of report, authors, and date.
6. Include the following information in proposal submission.
  - a) Participant name, school name, name of faculty advisor (If any) and report name. Reports will be tracked using the report name.
  - b) Sponsor companies, donors of goods, services, or money (if applicable)
  - c) The name, mailing address, phone number and e-mail address of the student competitor should be included for correspondence.
7. References: All scientific references cited within the proposal will be referred using the Harvard Referencing style or similar.
8. Finalists will be notified no later than five (5) weeks after the report submission deadline.

### **Evaluation of Proposals:**

1. Scoring will be determined by a judging panel from Fiberstar to include R&D, Marketing, Sales, and Production.
2. Each entry will be scored on a basis of 100 points, with the points to be distributed as shown below:



**Proposal Evaluations 100 points total:**

- Originality of Concept (25)
- Justification/Market Need (15)
- Ingredient Commercial Feasibility/Market Potential (25)
- Technical Feasibility (25)
- Quality of Report (10)

4. Areas to be covered, but not limited to, in the proposal are:

- a) Abstract/Executive Summary:
  - a. Short description of major points in proposal.
- b) Rationale:
  - a. Detailed description of the application and how it is unique to the marketplace.
  - b. Overview of the benefits to the given market.
- c) Literature Justification:
  - a. Literature support for how and why the ingredient selection would improve the final product.
- d) Technical Problem Solving:
  - a. What are potential challenges and how did you solve them?
- e) Product Application description:
  - a. Basis for selection of application
  - b. Citri-Fi 125's functionality/interaction in finished product
  - c. Product formulation
  - d. Price/cost evaluation
- f) Commercialization Potential:
  - a. Economic Benefit to firm and customer
  - b. Readiness of application