**Global Challenges/Chemistry Solutions**

**Providing Nutritious Foods: A new, super-nutritious puffed rice for breakfast cereals and snacks**  
  
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Today’s episode describes a new process for blowing up grains of rice to produce a super-nutritious form of puffed rice. The new rice has three times more protein and a rich endowment of other nutrients that make it ideal for breakfast cereals, snack foods and nutrient bars for school lunch programs. The study is the topic of a report in ACS’ the *Journal of* Agricultural and Food Chemistry.

Syed S.H. Rizvi , Ph.D., explains that commercial puffed rice is made by steam extrusion. That means an extruder squeezes rice flour mixed with water through a narrow opening at high temperature and pressure. On exiting the nozzle, the rice puffs up as steam expands and escapes. The process, however, can destroy heat-sensitive nutrients.

Here’s Dr. Rizvi, who is at Cornell University and is the lead author:

“*We looked for a way to avoid losing nutrients and enrich rice with protein and other micronutrients during the puffing process. For this, we turned to a process that uses supercritical carbon dioxide, which has been used for making decaffeinated coffee and in other applications.”*

The new process worked, and the super-puffed rice that was produced is ideally suited for consumption as breakfast cereals, snack food and as part of nutrition bars for school lunch programs, according to the team.

*“And we learned that the new puffed rice has three times more protein and eight times more dietary fiber than commercial puffed rice. It also contains calcium, iron, zinc and other nutrients that conventional puffed rice lacks. Our puffed rice was crispier than commercial products, giving it a better taste and crunch.”*

**Smart Chemists/Innovative Thinking**

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Today’s podcast was written by Michael Bernstein. I’m Katie Cottingham at the American Chemical Society in Washington.