

## Functional and health aspects of plant protein - polysaccharide interactions

*Anna Ström*

*Chemistry and Chemical Engineering, Chalmers University of Technology*

*anna.strom@chalmers.se*

The development of sustainable, plant-based food is driven by the need for the food system to reduce its environmental impact and respect the planetary boundaries. In addition, consumer demands have driven increased interest in alternative proteins. Plant proteins tend to aggregate in water dispersions, which leads to poor colloidal stability. Improved colloidal stabilization can be obtained by the addition of polysaccharides, building on the extensive knowledge obtained for colloidal stabilization of dairy – polysaccharide [1].

In this talk I will exemplify stabilization of plant proteins using polysaccharides, for soy and oat proteins. I will discuss the effect of stabilization as a function of polysaccharide structure and charge. The improved colloidal stabilization obtained for certain polysaccharides extends the processing window (heat treatment) of plant protein dispersions, thus adding techno-functionality. The second part of the talk will cover work conducted within a national research consortium (PANSweden). The aim of the research carried out within the consortium is to understand the impact of plant protein on health-related aspects such as digestion and faecal fermentation. In this part I will show how the presence of polysaccharides impact in-vitro digestion and in-vitro faecal fermentation of proteins and polysaccharides. The proteins studied are oat and pea proteins, in combination with pectin and cellulose rich pea hull fibres. The products (ammonia, short chain fatty acid) of faecal fermentation as a function of the ratio of the cellulose rich pea hull fibre and pea protein will be discussed.

### **References:**

[1] Dickinson E., Hydrocolloids at interfaces and the influence on the properties of dispersed systems, Food Hydrocolloids, 2003, 17: 25