



Gluten proteins and their structure-function relationships

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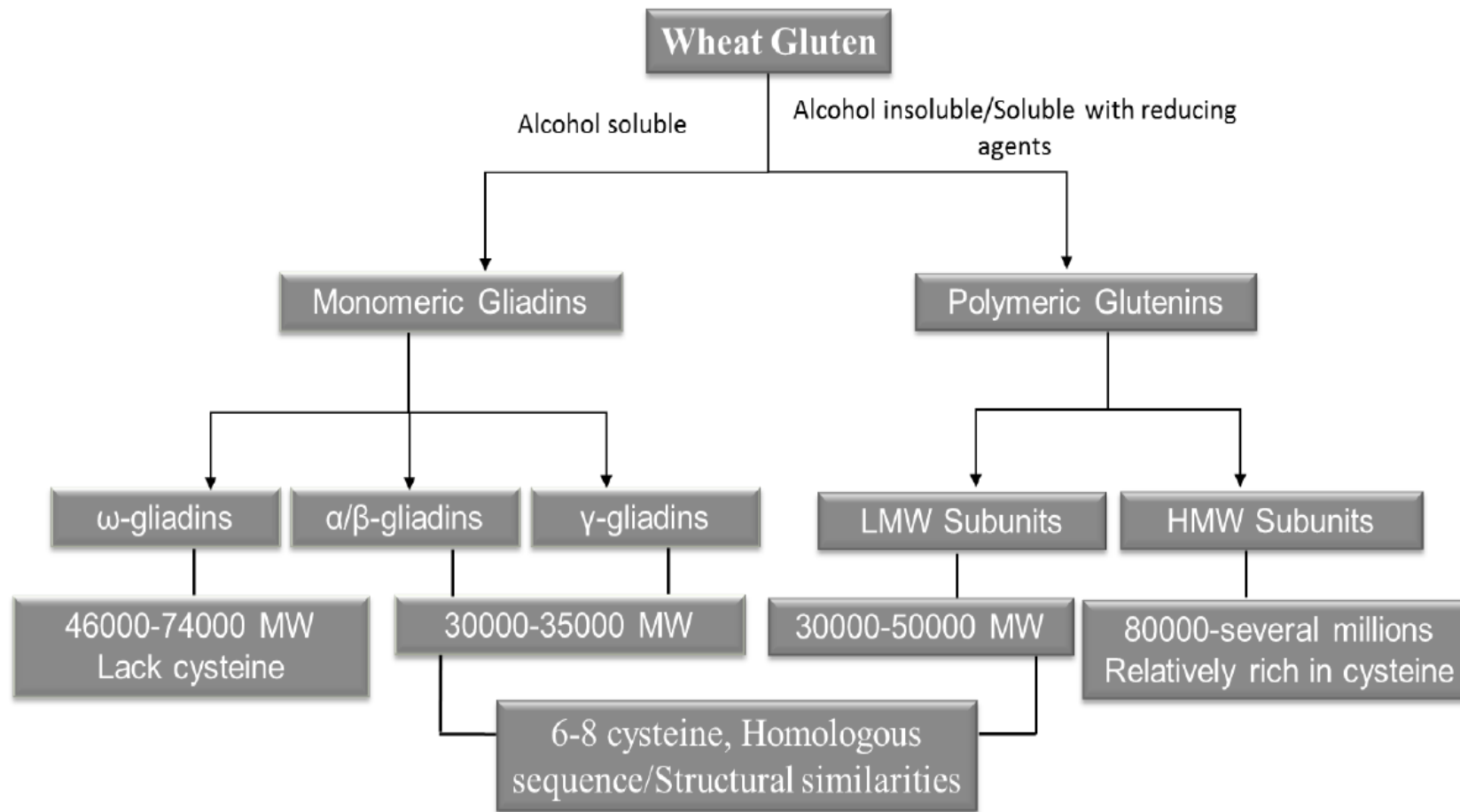
Jolayemi

Maria Luisa Prieto Linde

Karl-Erik Gustavsson

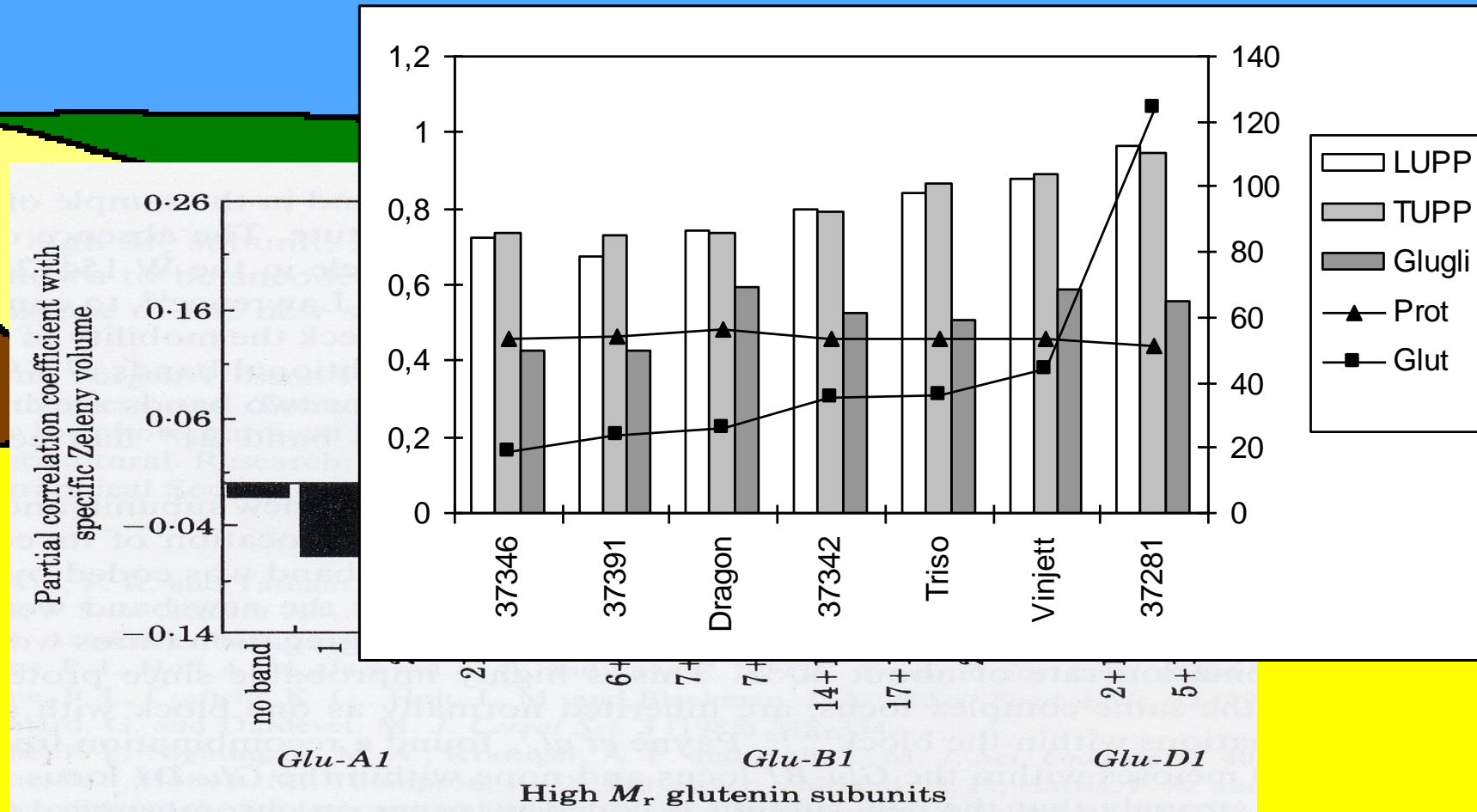
Gun Hagström

WHEAT GRAIN PROTEINS: accumulation and composition in breeding for improved bread-making quality

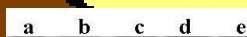
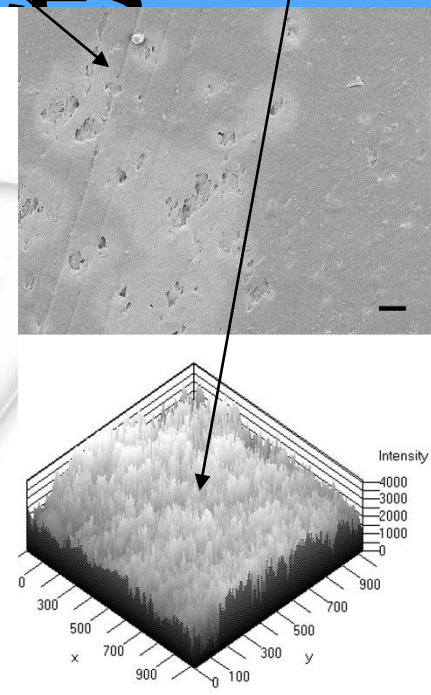
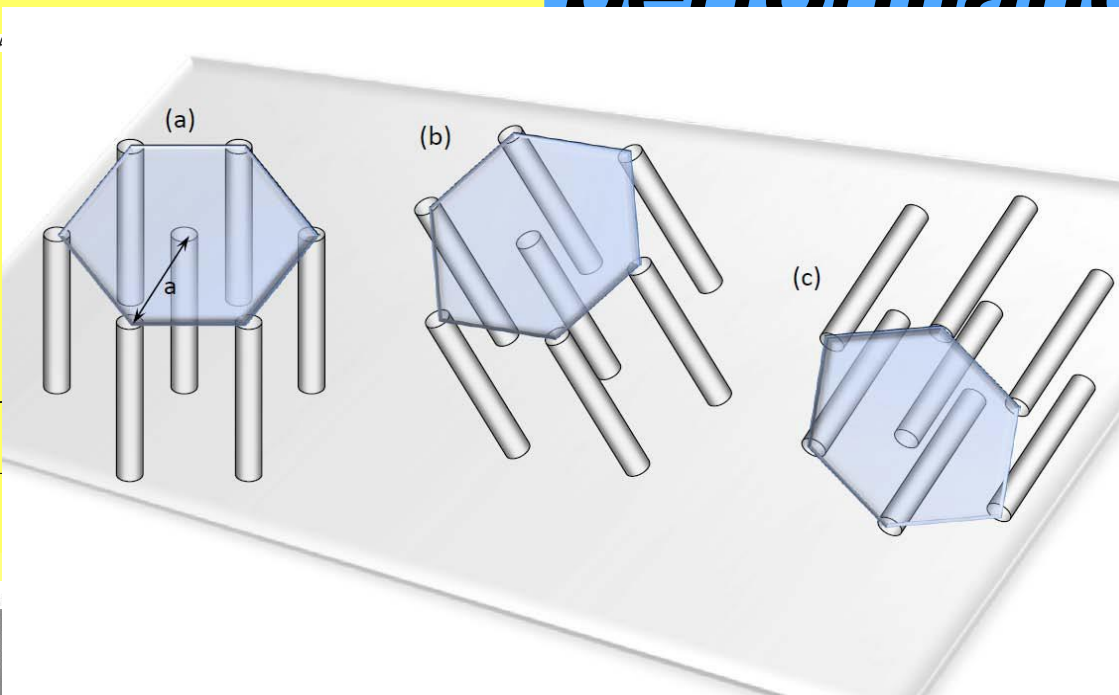


Baking quality

Protein composition - Genotype

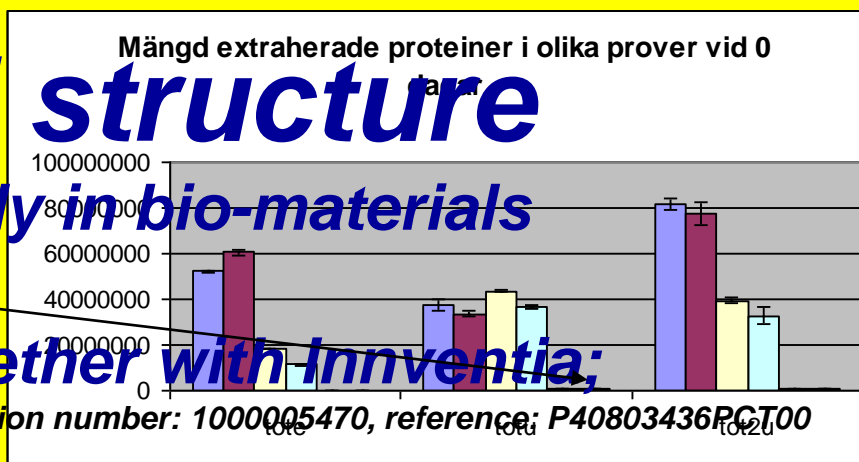


More even
protein composition

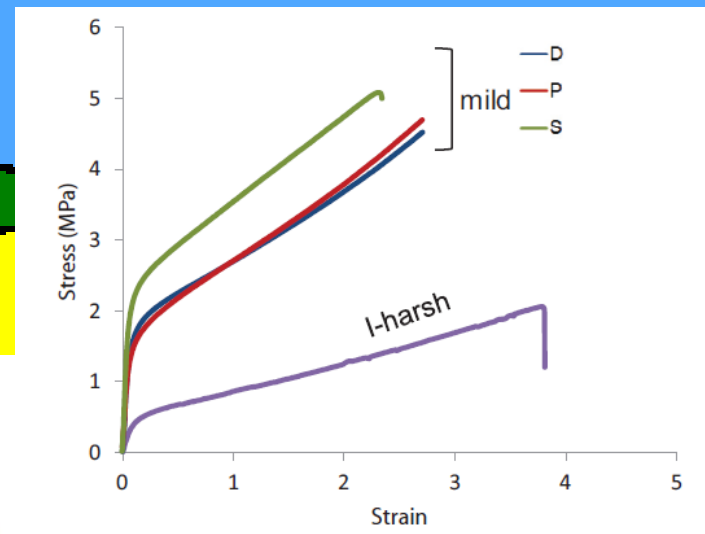
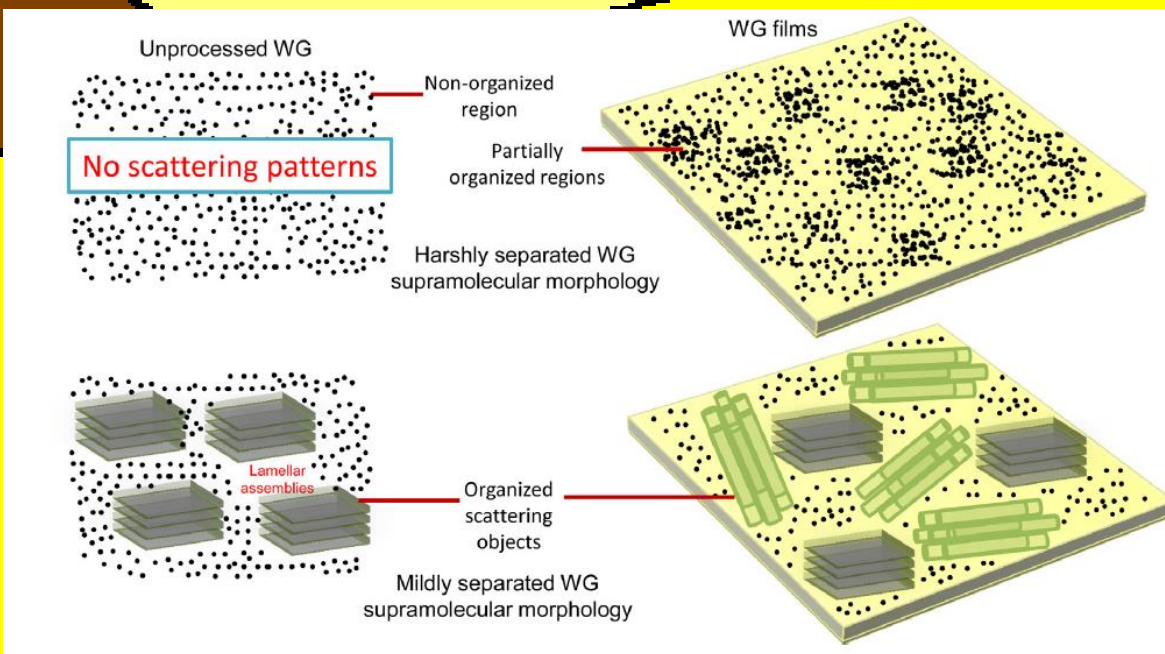


Patent applications together with Innventia:

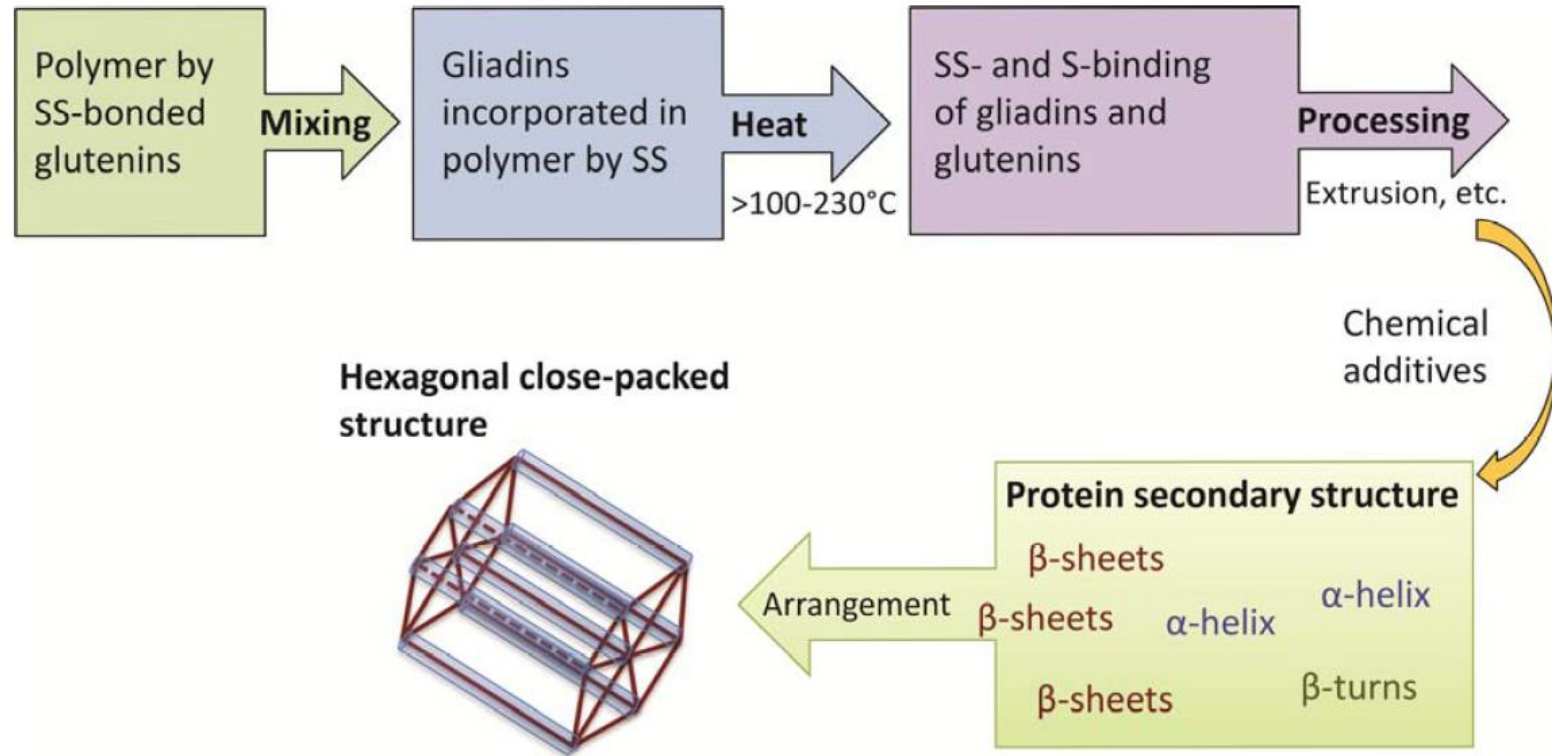
Patent application number: PCT/SE2009/051928, Sole mission number: 1000005470, reference: P40803436PCT00



Structures are important



Protein results



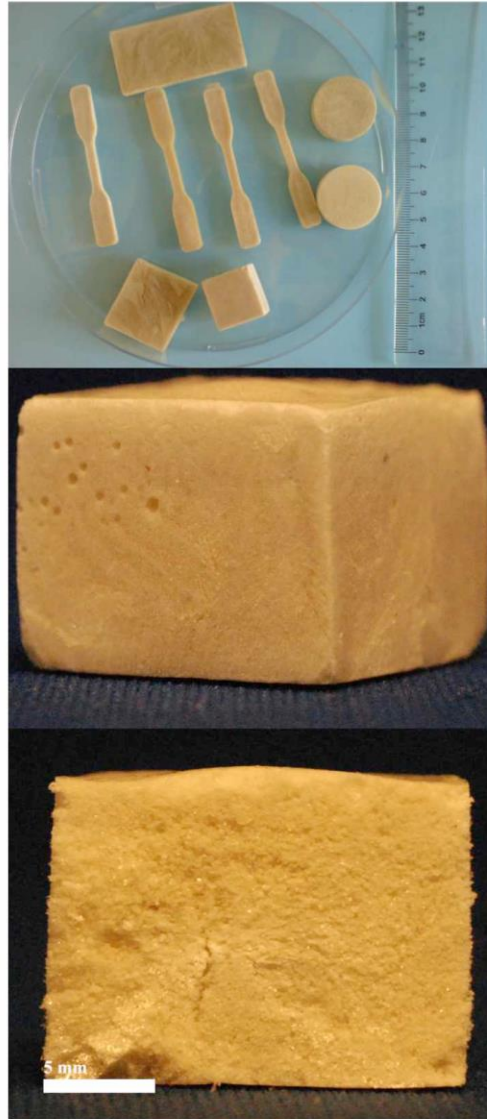
Bread baking



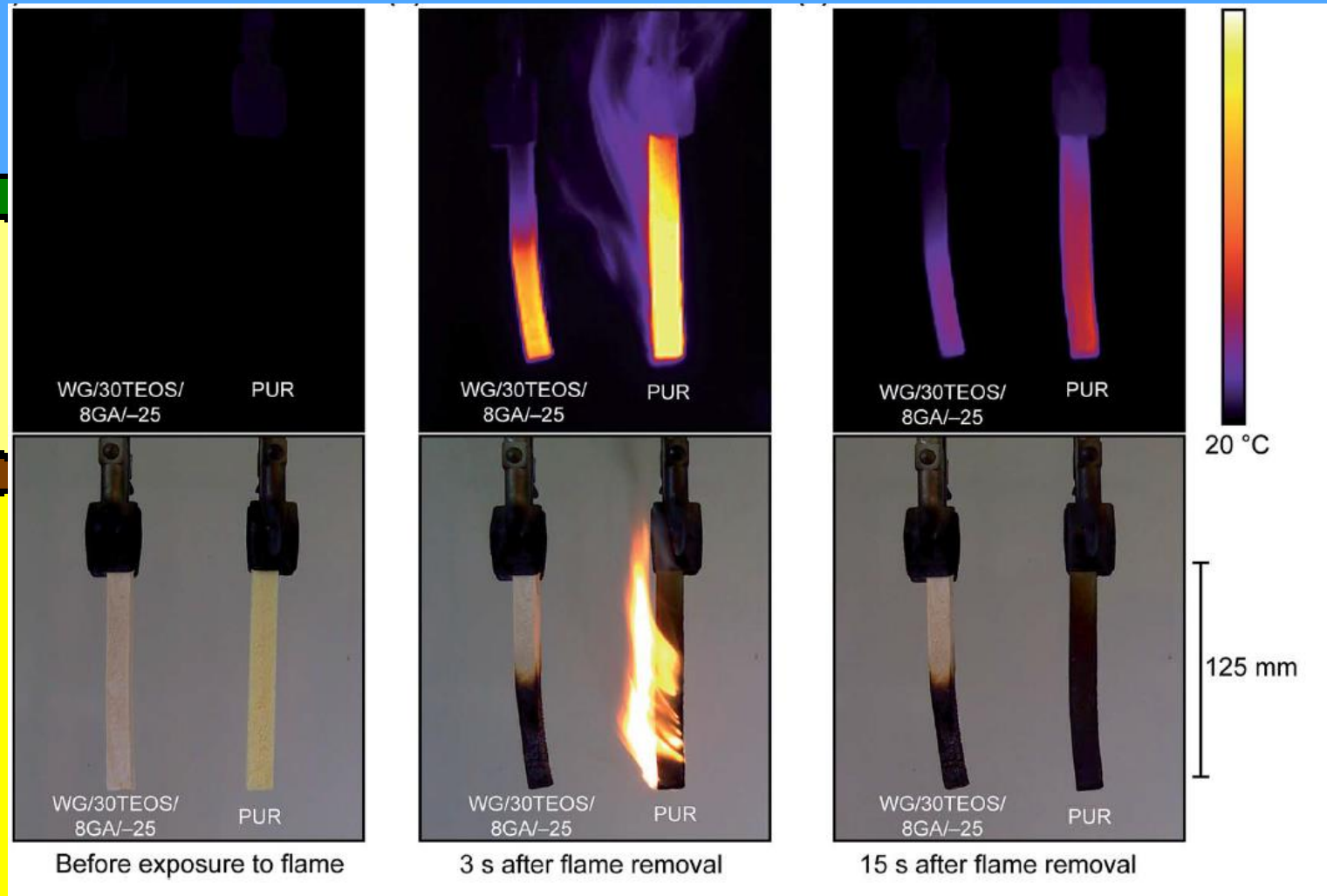
PVC-similar materials in various colours



Foams



Fire resistance in insulation materials



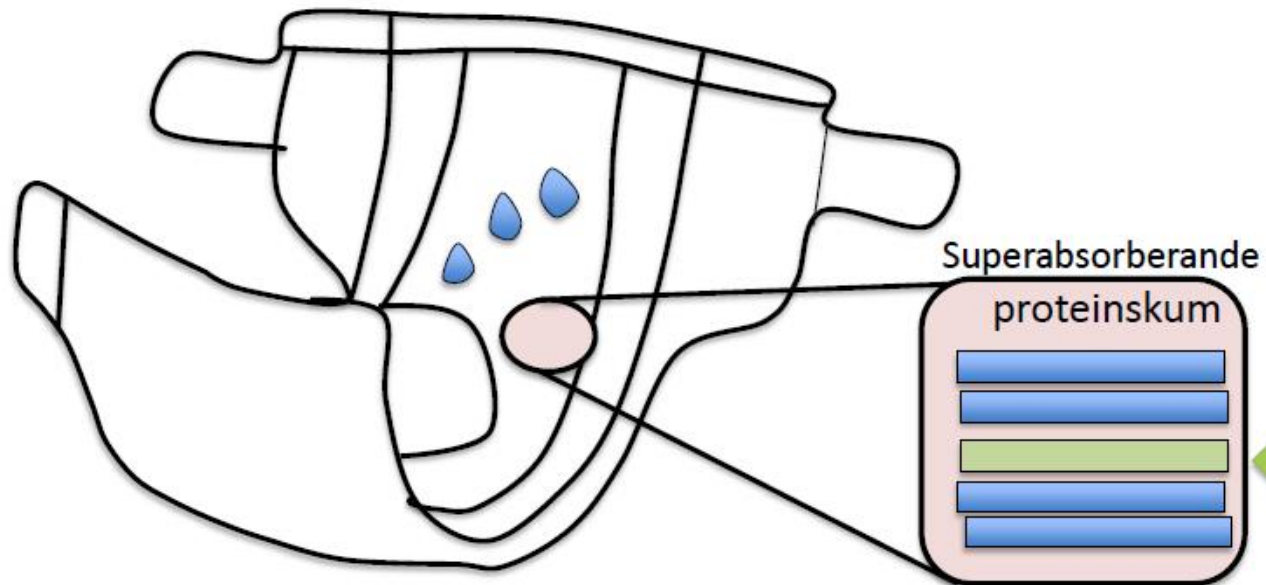
Superabsorbants



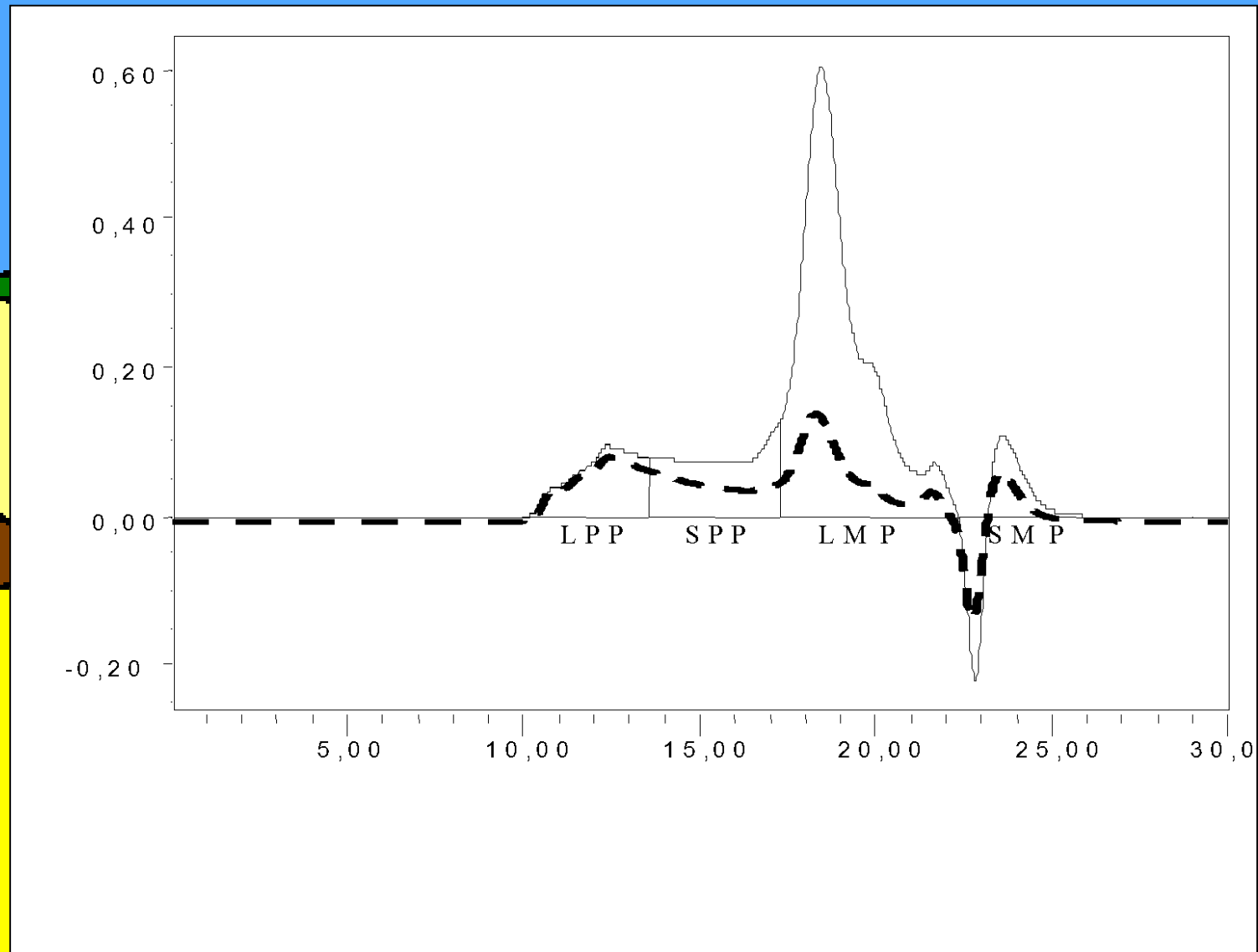
Processing



Pro-Blöja

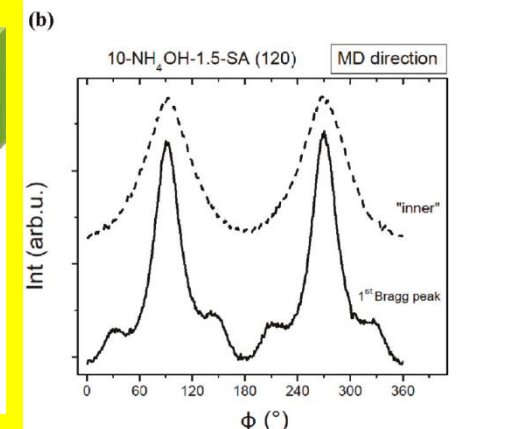
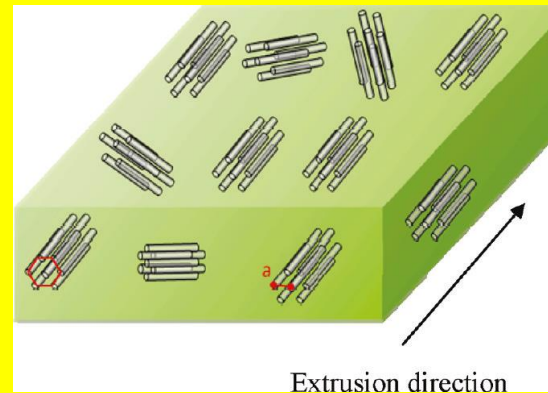
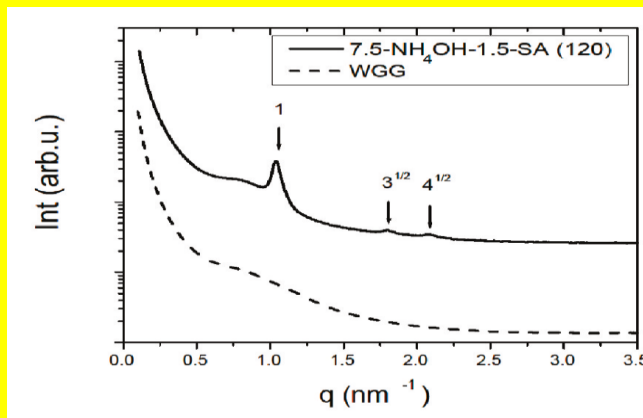
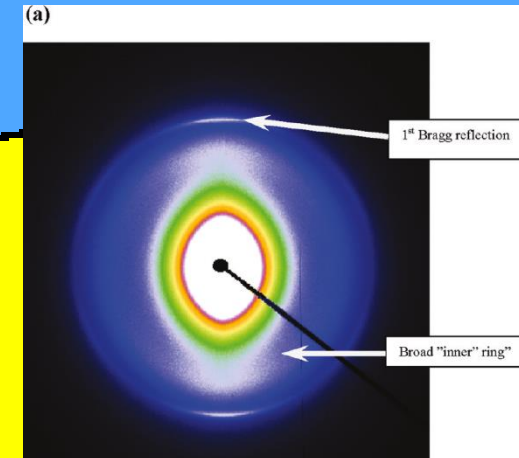


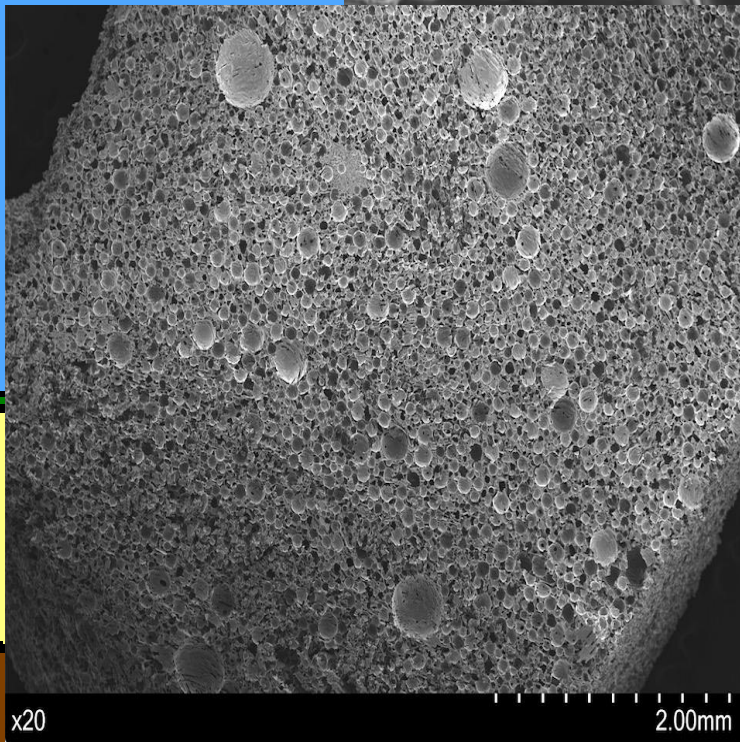
SE-HPLC



Measure sizes of polymers and monomers

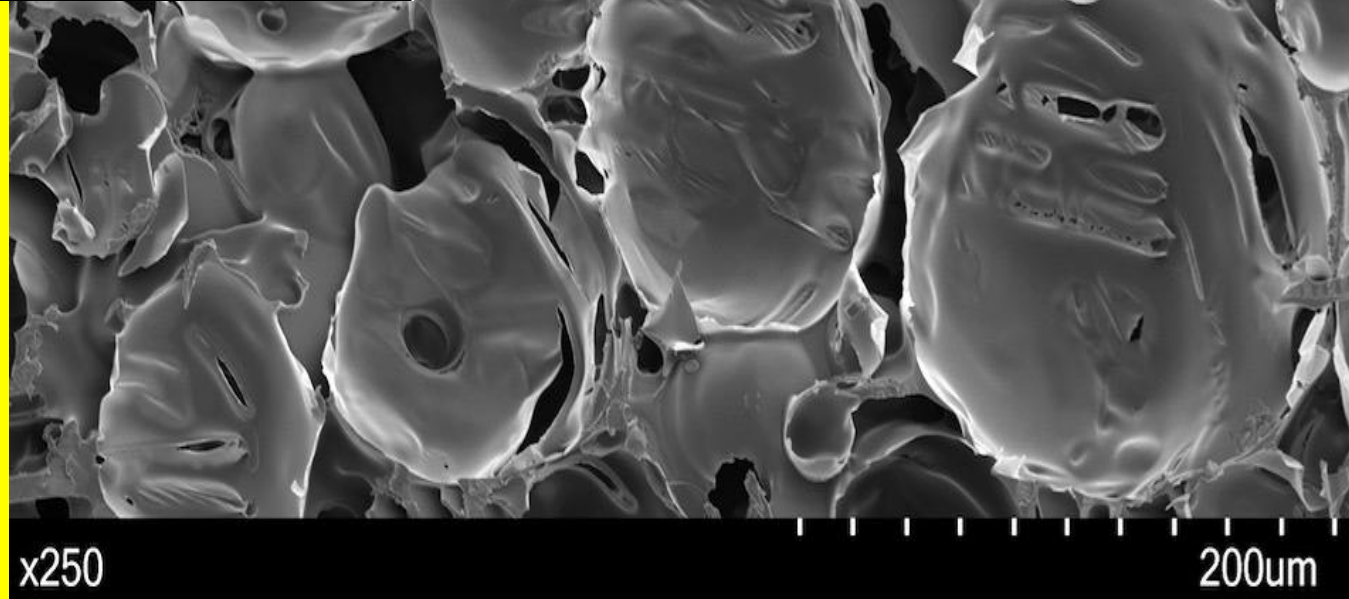
Max IV and ESS (Metabolomics and SciLife lab)





Gliadin + SB6 (transglutaminase)

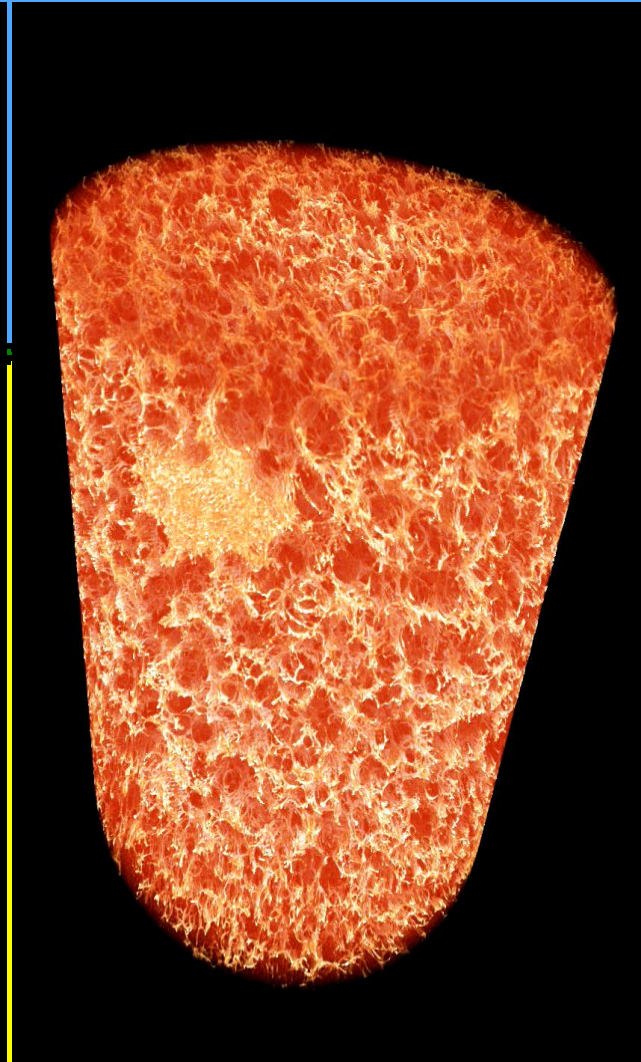
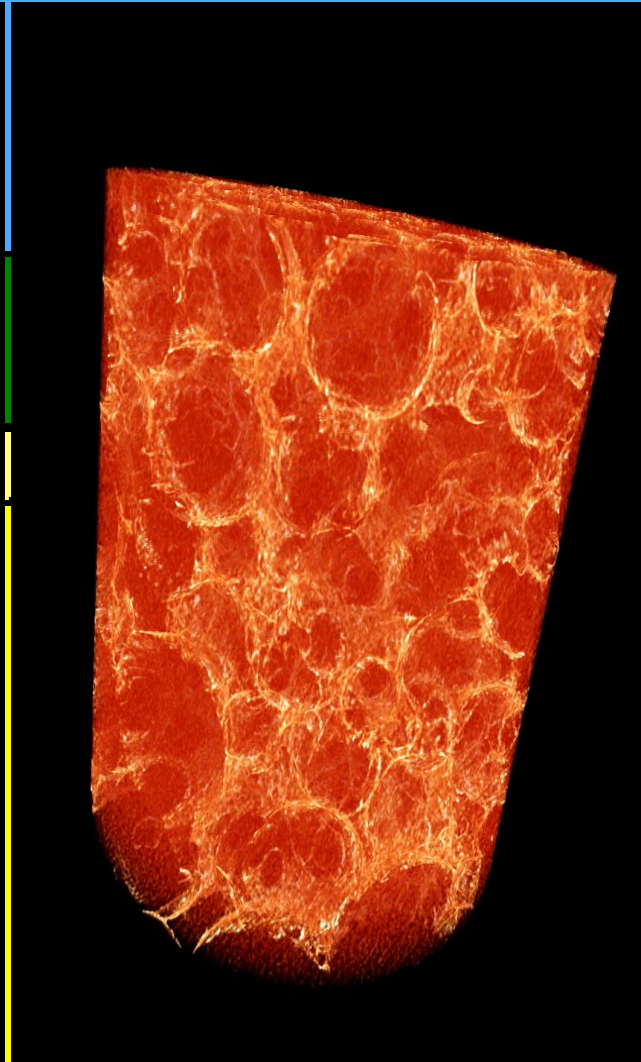
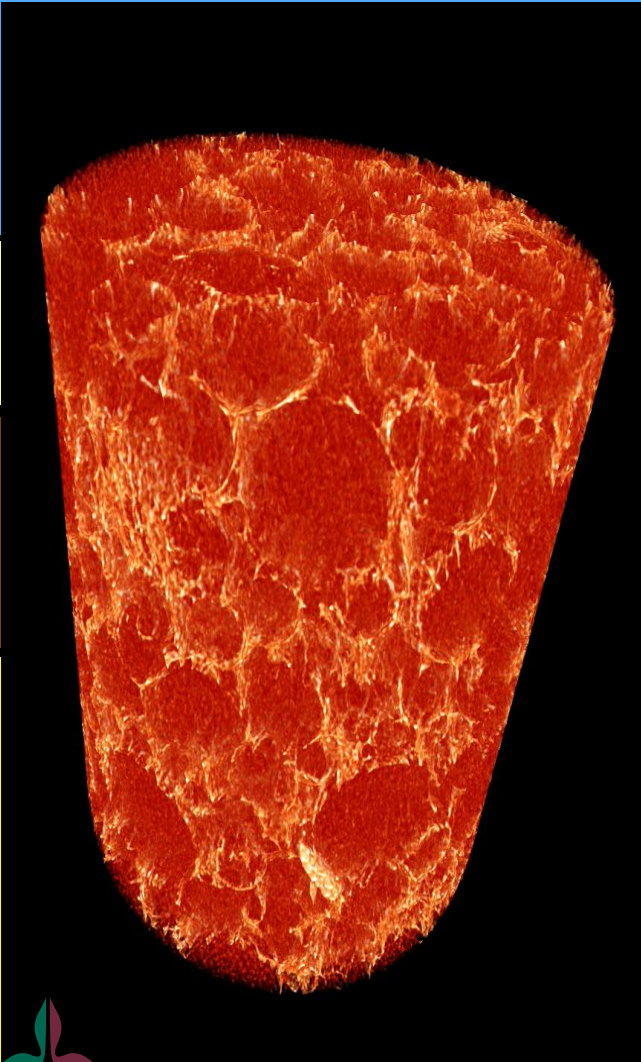
Bubbles are
bigger, more
uniform in size
and closer to each
other

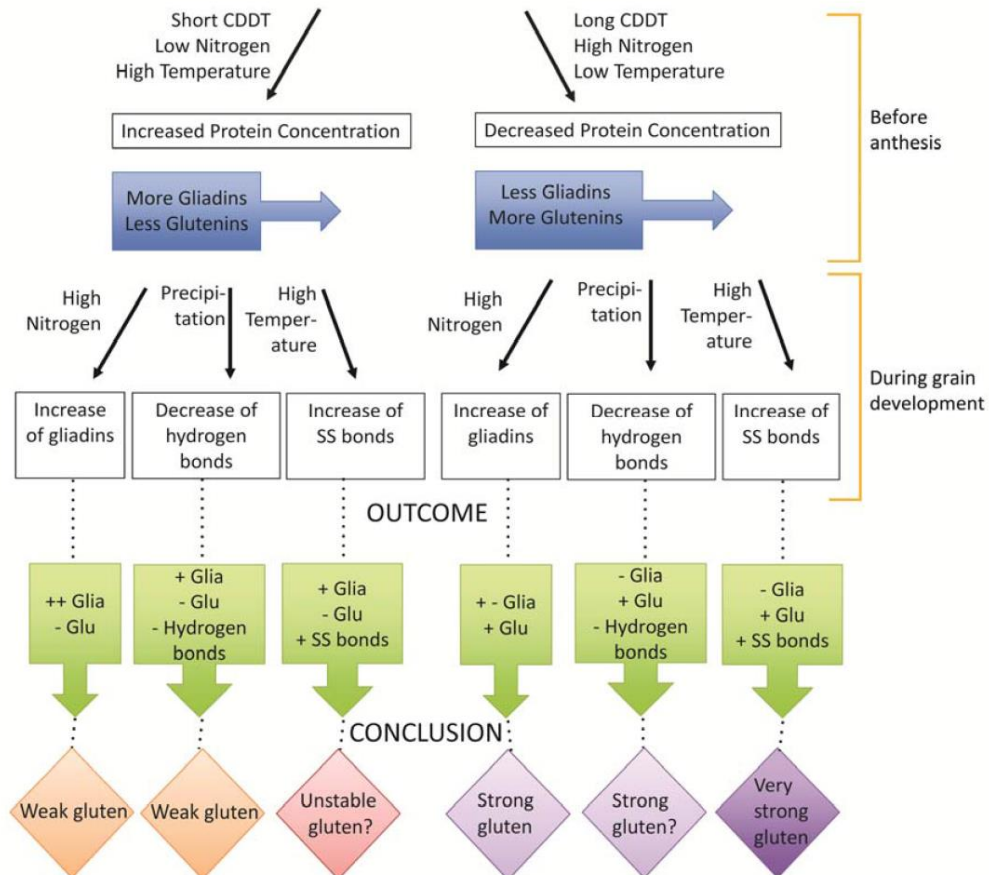
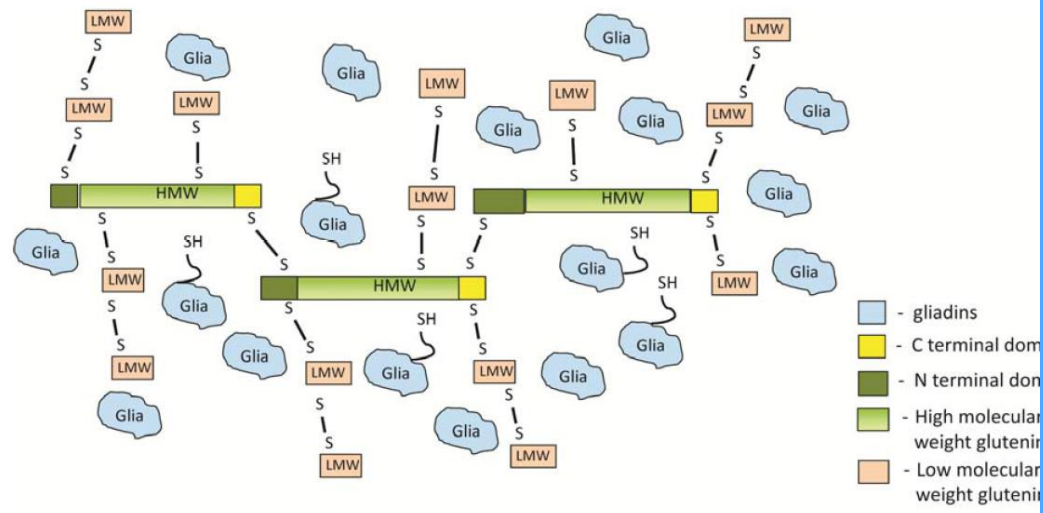


Gliadin

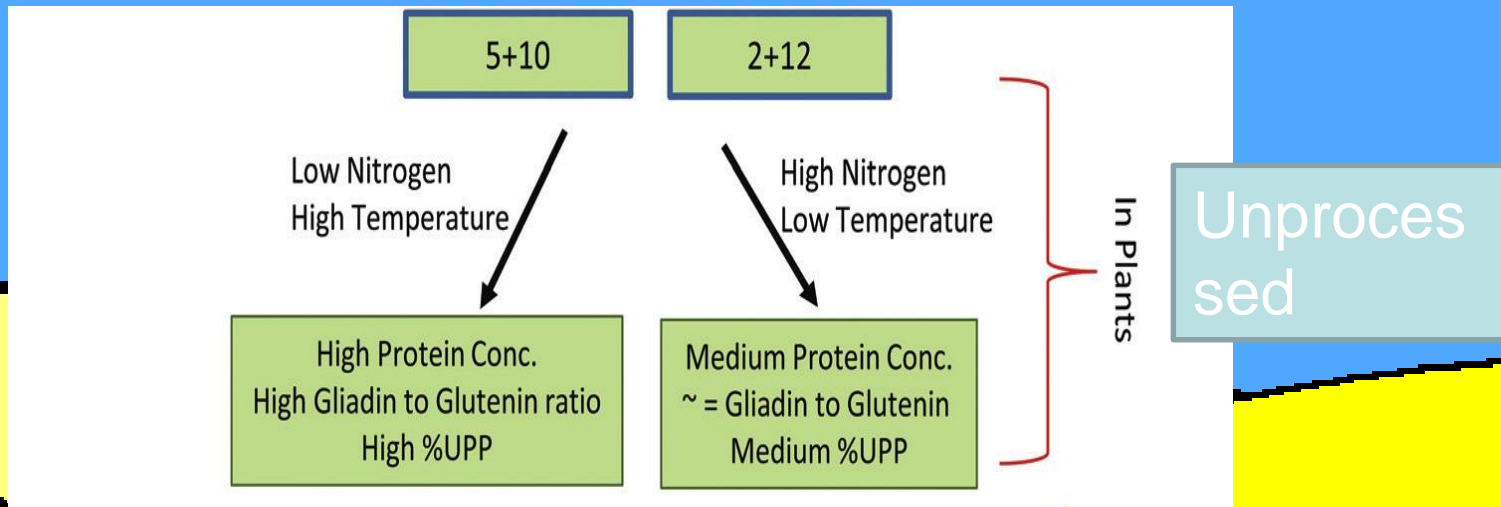
Gliadin + enzyme

Gliadin + enzyme +
glycerol

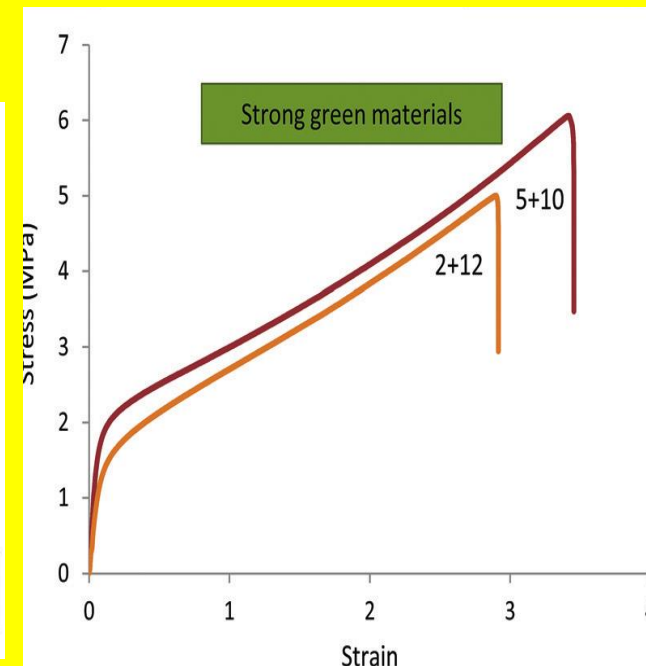
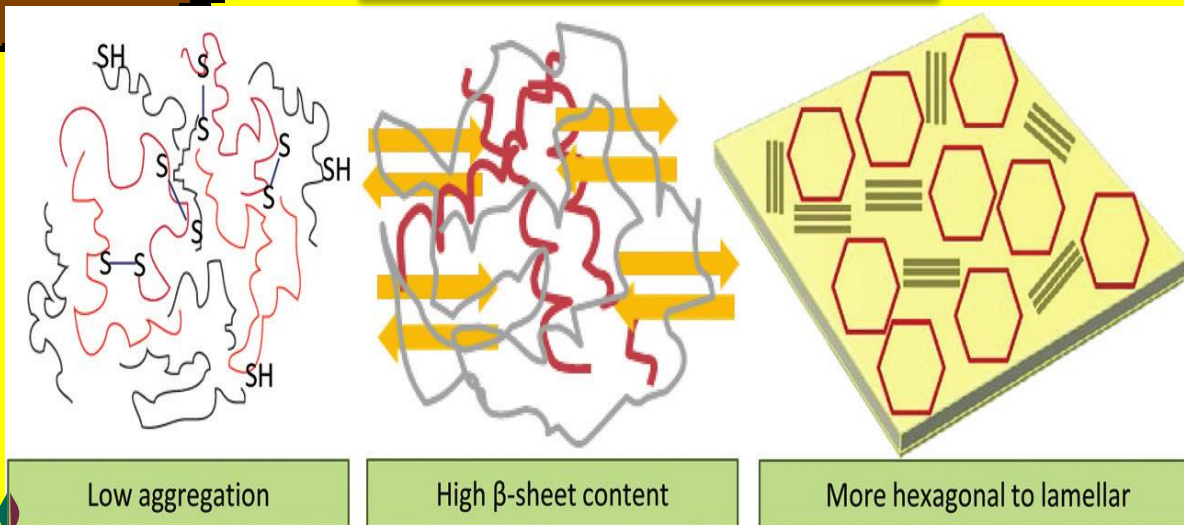




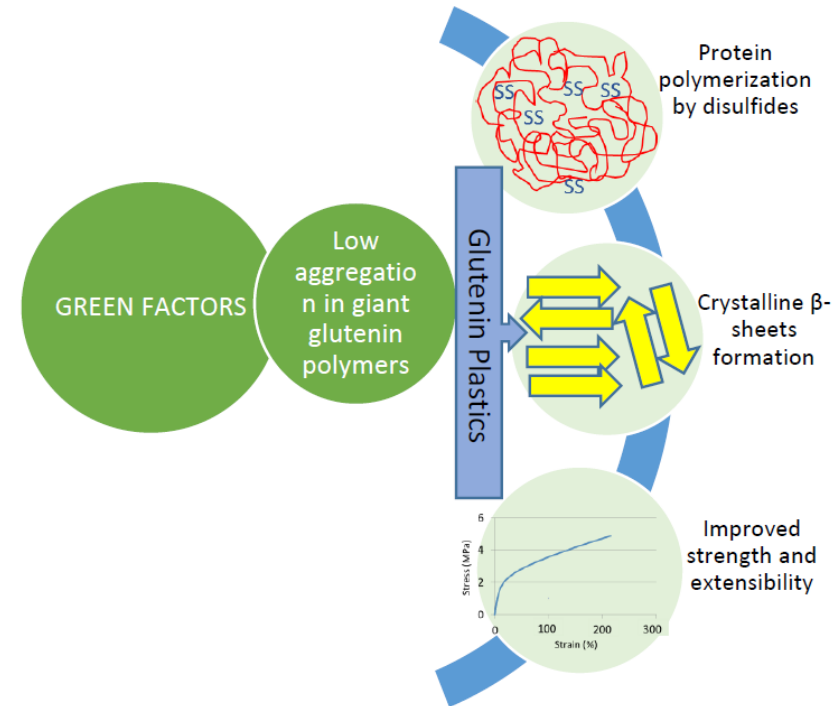
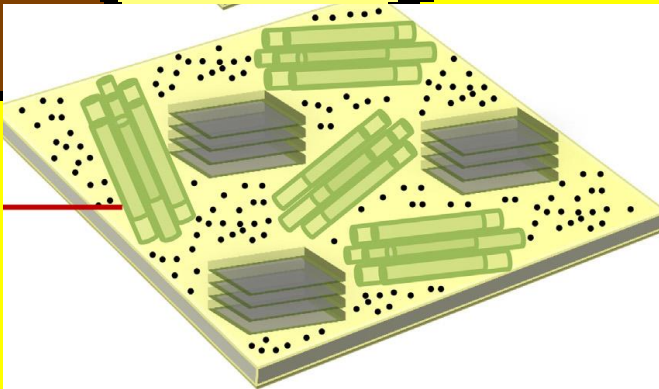
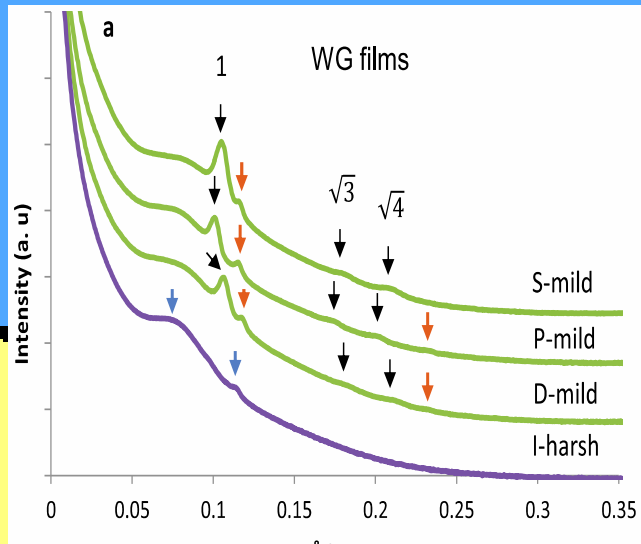
Structures can be tuned



After processing



Gliadins and Glutenins react differently on fractionation



Synopsis: Low aggregation in giant glutenin polymers by using chemical free protein separation procedure is found to be a key to design sustainable protein based materials with targeted functional properties.

Modelling structures

