

## GETTING BETTER INSIGHT INTO MECHANICAL AND CHEMICAL PROPERTIES OF WHEAT CUTS USING AFM HARMONIX MODE

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Atomic force microscopy, using the unique aspects of HarmoniX™ mode, and fluorescence microscopy were used in a complementary way to probe the surface characteristics of tissues isolated from the wheat grain. It is of great importance to the food industry to understand more fully how the structure and morphology of the grain influence the processing behavior. The research presented represents an example of how AFM technology can be used to increase this understanding for wheat, a grain of particular importance to the food industry. HarmoniX mode is a new AFM technique that combines the benefits of tapping and force mode and that can provide quantitative values of the scanned material in terms of chemical and mechanical properties with unprecedented accuracy. This new technique opens the way to many exciting applications in the field of Food research.

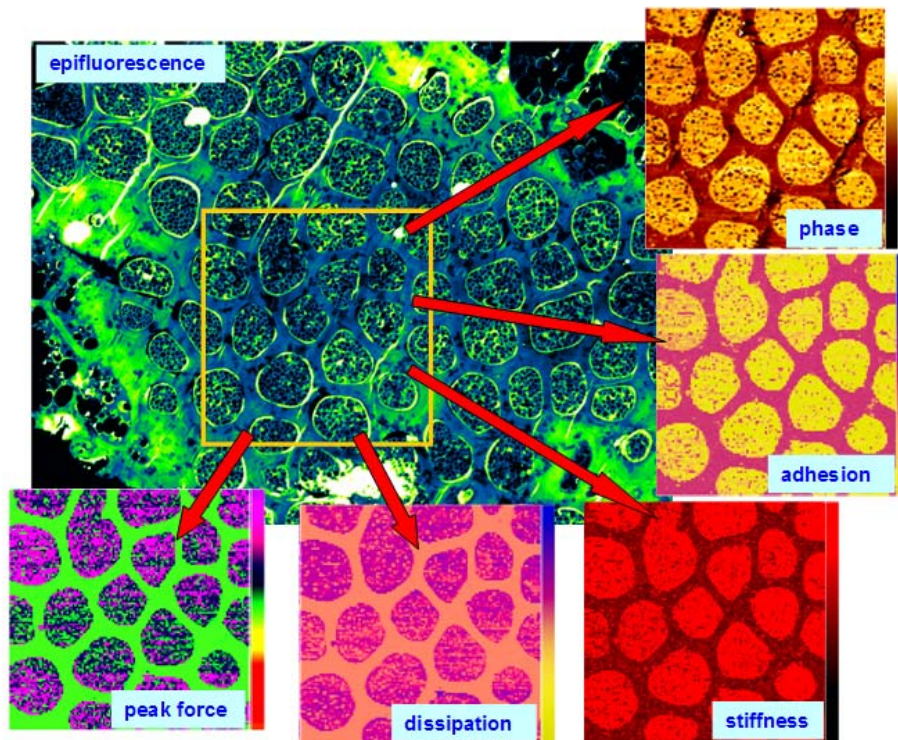


Figure 1: wheat cut image showing the overlay between optical data and six HarmoniX AFM channels. Z-scales: phase = 30°, adhesion = 40nm, peak force = 200nm, dissipation (arbitrary units) and stiffness = 5GPa. Those results are in good agreement with previous data acquired in tapping and force modes.