

Alternative Fibers for Hygiene Consumer Goods

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Abstract

Global sustainability megatrends are increasingly driving interest in alternative non-wood fibers, such as agricultural residues for various hygiene consumer goods^{1, 2}. The Sustainable and Alternative Fibers Initiative (SAFI) at NCSU has been pioneering feasible conversion processes that yield non-wood fibers with encouraging characteristics for tissue paper manufacturing. Our research has thoroughly evaluated different pulping processes, encompassing both mechanical and chemical techniques. Comparative analyses reveal that some non-wood fibers can offer enhanced attributes, such as increased bulkiness, water absorption, and tensile strength, without significant trade-offs in softness when contrasted with conventionally used fibers³. In this presentation, we will delve into the tangible opportunities and applications of these non-wood alternative fibers, as well as the technical challenges intrinsic to their utilization. These insights stand at the core of realizing the potential of alternative fibers to meet consumers' growing appetite for more sustainable hygiene consumer goods. The results from this work contribute not only to the academic understanding but also to practical applications that resonate with global sustainability goals.

Keywords: Alternative Fibers, Non-wood Fibers, Tissue, mechanical pulping, chemical pulping.

Dr. Ronalds Gonzalez, an Associate Professor at NC State University, is a recognized expert in sustainable fiber-based consumer goods with over 15 years of industry experience. He has held key leadership roles at companies like SCA and Smurfit Kappa, and provided international consultation. Leading a dynamic research group, he's also co-founded SAFI to advance sustainable fibers. A prolific author and recipient of prestigious awards, Dr. Gonzalez is committed to innovation, education, and a sustainable future.