



**Council for Scientific and Industrial Research (CSIR)**  
**Materials Science and Manufacturing**  
**Polymers and Composites**  
 Port Elizabeth, South Africa  
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<b>Title:</b>	<b>Sustainable utilization and conversion of post-harvest agricultural waste residues into value added materials</b>
<b>Abstract:</b>	Biomass wastes are abundantly available and thus provide an inexpensive renewable feedstock. From a South African perspective, the main agricultural residues are produced as a waste product from food crops such as maize, rice and sorghum. Another waste product is sugarcane bagasse obtained as by-product after processing of sugarcane. Currently small amounts of these residues are being used by farmers as feed for livestock and the rest of these are largely under-utilized; it is either ploughed back into the soil or openly burned in the fields before planting the next crop. The direct combustion of agricultural residues results in air pollution thereby posing health and environmental hazards. There is now an increasing interest in optimised use and reuse of resources for promotion of green material technology. One of the ways attaining this is by effective utilisation of wastes and production of novel bio-products in resource effective ways and with minimised environmental impacts. This initiative is to focus on developing a range of biopolymers from individual fractionated components of biomass waste residues and also establish the end-of-life options for these novel products
<b>Lead institution:</b>	CSIR, Materials Science and Manufacturing, Polymers and Composites
<b>Partner institutions:</b>	Stellenbosch University
<b>Principal Investigator:</b>	Maya John
<b>Funded by:</b>	DST – Waste RDI
<b>Start date:</b>	April 01, 2016
<b>End date:</b>	March 31, 2019
<b>Feedstock:</b>	Sugarcane bagasse and maize stalk residues
<b>Value chain products:</b>	End-products – Xylan based biopolymers and biocomposites
<b>Geographic source of the feedstock:</b>	Maize stalk residues – Cofimvaba, Eastern Cape Sugarcane bagasse – Cradock, Eastern Cape