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## Keratin-based biomaterials

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Currently, there is an increasing interest in the development of environmental friendly materials obtained from renewable resources. Poultry industry generates huge amounts of feather waste each year. Chicken feathers have high level of keratin content (up to 90%), a structural fibrous protein, which can become a suitable bio-resource of raw materials. Isolation of keratin protein from chicken feathers can be carried out by using different reducing agents which break down disulphide and hydrogen bonds of the keratin fibres to obtain useful materials. Other authors have combined feathers with reducing agents and plasticizers during melt blending for producing films with poor mechanical properties. In the present work, we show the use of keratin as raw material for the preparation of a fully bio-derived bioplastic by conventional processing techniques such as melt blending. Chicken feathers were processed by this technique together with suitable plasticizers and biobased plastics. The resulting materials were characterized in terms of thermal, viscoelastic and mechanical properties, showing their promising potential of substitution of conventional plastics.

## Biography

Sarah Montes has done her Degree in Polymer Chemistry and Master in Applied Chemistry and Polymers from the University of The Basque Country. Currently, she is a scientific research at IK4-CIDETEC specialized in the development of polymeric composites/nanocomposites, especially biobased polymers and in the characterization of polymeric materials. She has been the coordinator of the ECLIPSE European Project. She is the author and co-author of 5 scientific papers and 2 patents.

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