

(54) Title of the invention : A METHOD OF SYNTHESISING KERATIN- BASED BIOPLASTIC FILM FROM HUMAN HAIR

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(57) Abstract :  
 A method of synthesising a bioplastic film from keratin is disclosed. The method broadly comprises following steps: washing and drying human hair, followed by delipidization in a solution of ethanol and chloroform. The delipidized hair is then heated with sodium sulfide solution, followed by filtration, centrifugation, and dialysis to obtain a keratin solution. The obtained keratin solution is freeze dried to obtain a keratin powder. The obtained keratin powder is then mixed with sodium hydroxide, glycerol, and polyvinyl alcohol to obtain a solution. The obtained solution is placed in a hot air oven for about 24 hours to obtain the keratin film. The disclosed method of synthesis offers at least the following synergistic advantages and effects: is renewable, biodegradable, and environment-friendly, can be used to prepare disposable items for packaging automobile parts and surgical devices; and/or offers a reduced carbon footprint and reduced reliance of fossil fuels.

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