

Title (en)  
ENZYME TREATMENT OF POLYAMIDE OBJECTS FOR METALLIZATION PURPOSES

Title (de)  
ENZYMBEHANDLUNG VON POLYAMIDOBJEKTEN ZU METALLISIERUNGSZWECKEN

Title (fr)  
TRAITEMENT ENZYMATIQUE D'OBJETS EN POLYAMIDE À DES FINS DE MÉTALLISATION

Publication  
**EP 3144414 A1 20170322 (EN)**

Application  
**EP 15186070 A 20150921**

Priority  
EP 15186070 A 20150921

Abstract (en)  
The present invention provides a process for pretreating a polyamide surface in preparation of metallization, the process comprising the steps: (a) providing an object having a polyamide surface; (b) treating the polyamide surface with a protease; and (c) removing the protease from the treated polyamide surface, thus providing an object having a protease treated polyamide surface. The subsequent metallization is preferably a copper metallization using a palladium catalyst (in particular a Pd/Sn activator).

IPC 8 full level  
**C23C 18/20** (2006.01); **C23C 18/30** (2006.01); **C23C 18/38** (2006.01)

CPC (source: EP)  
**C23C 18/2086** (2013.01); **C23C 18/24** (2013.01); **C23C 18/285** (2013.01); **C23C 18/30** (2013.01)

Citation (applicant)  

- US 4895739 A 19900123 - BLADON JOHN J [US]
- US 2008289120 A1 20081127 - MIETTINEN-OINONEN ARJA [FI], et al
- N. KANANI ET AL.: "Kupferschichten - Abscheidung, Eigenschaften, Anwendungen", 2000, EUGEN G. LEUZE VERLAG
- "Kunststoff-Metallisierung - Handbuch für Theorie und Praxis", 1991, EUGEN G. LEUZE VERLAG
- AH REUM SONG; HYE RIM KIM: "Effectiveness of Flavourzyme Treatment on Polyamide Fabric", FIBERS AND POLYMERS, vol. 14, no. 12, 2013, pages 2212 - 2220, XP055473953, DOI: doi:10.1007/s12221-013-2212-y
- EL-OLA ET AL., INDIAN JOURNAL OF FIBRE & TEXTILE RESEARCH, vol. 39, 2014, pages 65 - 71
- "Kunststoff-Metallisierung", 1991, EUGEN G. LEUZE VERLAG
- "Fortschritte bei der Kunststoffmetallisierung und Oberflächenbeschichtung von Glas, Keramik und Silizium", 2002, EUGEN G. LEUZE VERLAG
- SONG ET AL., FIBERS AND POLYMERS, vol. 14, no. 12, 2013, pages 2212 - 2220
- AH REUM SONG; HYE RIM KIM: "Effectiveness of Flavourzyme Treatment on Polyamide Fabric", FIBERS AND POLYMERS, vol. 14, no. 12, 2013, pages 2212 - 2220, XP055473953, DOI: doi:10.1007/s12221-013-2212-y
- D. SPELLMANN ET AL., INT. DAIRY J., vol. 13, 2003, pages 447
- MERZ ET AL., J. AGRIC. FOOD CHEM., vol. 63, 2015, pages 5682 - 93
- AH REUM SONG; HYE RIM KIM, FIBERS AND POLYMERS, vol. 14, no. 12, 2013, pages 2212 - 2220
- "Kunststoff-Metallisierung - Handbuch für Theorie und Praxis", 1991, EUGEN G. LEUZE VERLAG

Citation (search report)  

- [X1] WO 2007031712 A2 20070322 - EASTMAN KODAK CO [US], et al
- [A] WO 2007031710 A2 20070322 - EASTMAN KODAK CO [US], et al

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3144414 A1 20170322; EP 3144414 B1 20221123; WO 2017050728 A1 20170330**

DOCDB simple family (application)  
**EP 15186070 A 20150921; EP 2016072235 W 20160920**