

Title (en)

Method for removing copper sulphide (cu2s) deposited onto cellulose-based material in transformer

Title (de)

Verfahren zum Entfernen von auf zellulosebasiertem Material in Wandlern abgelagertem Kupfersulfid (Cu2S)

Title (fr)

Procédé de suppression de sulfure de cuivre (cu2s) déposé sur le matériau à base de cellulose dans un transformateur

Publication

EP 2333043 A1 20110615 (EN)

Application

EP 09178180 A 20091207

Priority

EP 09178180 A 20091207

Abstract (en)

A method for removing copper sulphide (Cu 2 S) deposited onto electrically insulating materials of components in an electrical apparatus, such as a transformer or a bushing, wherein normally present electrically insulating oil has been substantially removed, and on other surfaces of such apparatus, comprising the following steps: providing a chemical treatment solution comprising a polar aprotic solvent, and preferably a chelating agent being able of forming complexes with copper from the surface of Cu 2 S deposited onto the insulating material, said chelating agent containing free electrons capable of forming a complexation with Cu, being at least a bidentate, but preferably a multidentate, i.e. being able of forming complexes with Cu from more than one point in the chelating agent, and having a solubility in the polar aprotic solvent of at least 5·10⁻⁴ mol/L to allow extraction of copper by solvation of the formed copper-chelating complex; and optionally additional components, said chemical treatment solution being non-aqueous; subjecting the insulating material to the solution, preferably at a temperature of 30-130 °C, more preferably 50-90 °C, for a predetermined time period, preferably 2 to 10 days, more preferably 3 to 7 days; and removing the chemical treatment solution from the insulating material.

IPC 8 full level

C11D 11/00 (2006.01); **C11D 3/20** (2006.01); **C11D 3/28** (2006.01); **C11D 3/30** (2006.01); **C11D 3/33** (2006.01); **C11D 3/36** (2006.01); **C11D 3/43** (2006.01)

CPC (source: EP)

C11D 3/2082 (2013.01); **C11D 3/28** (2013.01); **C11D 3/30** (2013.01); **C11D 3/33** (2013.01); **C11D 3/361** (2013.01); **C11D 3/43** (2013.01); **C11D 2111/22** (2024.01)

Citation (search report)

- [AD] WO 2008024060 A1 20080228 - ABB RESEARCH LTD [CH], et al
- [AD] WO 2005115082 A2 20051208 - ABB TECHNOLOGY LTD [CH], et al
- [A] WO 2008024061 A1 20080228 - ABB RESEARCH LTD [CH], et al
- [A] CLAES BENGTSOON ABB POWER TECHNOLOGIES AB LUDVIKA: "Oil corrosion and cu2s deposition in power transformers", CIGRE MOSCOW SYMPOSIUM, 1 January 2005 (2005-01-01), pages 1 - 5, XP003018682

Designated contracting state (EPC)

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 SE SI SK SM TR

DOCDB simple family (publication)

EP 2333043 A1 20110615; WO 2011069757 A1 20110616

DOCDB simple family (application)

EP 09178180 A 20091207; EP 2010066897 W 20101105