

## Title (en)

METHOD FOR THE WET-CHEMICAL ETCHING OF TiO<sub>2</sub> THIN-FILMS AND TiO<sub>2</sub> PARTICLES AND ETCHING REAGENT

## Title (de)

VERFAHREN ZUM NASSCHEMISCHEN ÄTZEN VON TiO<sub>2</sub>-DÜNNSCHICHTEN UND TiO<sub>2</sub>-PARTIKELN SOWIE ÄTZMITTEL

## Title (fr)

PROCÉDÉ DE GRAVURE CHIMIQUE EN MILIEU HUMIDE SUR COUCHES MINCES DE TiO<sub>2</sub> ET SUR PARTICULES DE TiO<sub>2</sub>, ET AGENT DE GRAVURE CHIMIQUE

## Publication

**EP 2164813 A2 20100324 (DE)**

## Application

**EP 08758115 A 20080523**

## Priority

- DE 2008000875 W 20080523
- DE 102007025136 A 20070530

## Abstract (en)

[origin: WO2008145098A2] The invention relates to a method and an etching reagent for the wet-chemical etching of TiO<sub>2</sub> thin-films and TiO<sub>2</sub> particles that permits a defined removal of the TiO<sub>2</sub> thin-film and a reduction of the particle size. The method comprises the steps: production of an etching reagent with a pH value greater than 13, said reagent containing a base with a concentration of > 0.1 mol, selected from the bases NH<sub>4</sub>OH, NaOH, KOH or mixtures of the same and H<sub>2</sub>O<sub>2</sub> with a smaller concentration than that of the base; setting of a temperature that is equal to or greater than the ambient temperature; immersion of the TiO<sub>2</sub> thin-films and TiO<sub>2</sub> particles in the etching reagent and steeping of the layers and particles in accordance with the temperature and composition of the etching reagent; removal of the etched TiO<sub>2</sub> thin-films and particles, said films and particles are then rinsed with distilled water and dried. To maintain the initial composition of the etching reagent, H<sub>2</sub>O<sub>2</sub> is added during the etching process.

## IPC 8 full level

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## Citation (search report)

See references of WO 2008145098A2

## Citation (examination)

- "Gmelins Handbuch der Anorganischen Chemie, 8th Edition, vol. 41, Titan", 1951, VERLAG CHEMIE, XP007913637
- ANONYMOUS: "Concentration", 28 May 2007 (2007-05-28), XP007920243, Retrieved from the Internet <URL:http://en.wikipedia.org/w/index.php?oldid=134156112> [retrieved on 20120214]
- ANONYMOUS: "Avogadro constant", 22 May 2007 (2007-05-22), XP007920244, Retrieved from the Internet <URL:http://en.wikipedia.org/w/index.php?oldid=132665474> [retrieved on 20120214]

## Designated contracting state (EPC)

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## DOCDB simple family (application)

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