

Title (en)

Method and device for homogeneously heating materials by means of high-frequency electromagnetic radiation

Title (de)

Verfahren und Vorrichtung zum gleichmäßigen Erwärmen von Materialien durch elektromagnetische Hochfrequenzstrahlung

Title (fr)

Procédé et dispositif pour matériaux de chauffage homogène au moyen d'un rayonnement électromagnétique haute fréquence

Publication

EP 2046093 A1 20090408 (EN)

Application

EP 07019535 A 20071005

Priority

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Abstract (en)

The invention provides for a method for heating materials being capable of absorbing high-frequency electromagnetic radiation, in particular microwaves, by means of irradiating said materials with high-frequency electromagnetic radiation. In order to achieve an essentially consistent heating of the material and, in particular, to avoid hot spots in the material, the high frequency electromagnetic radiation is coupled into said material at a plurality of radiation areas by means of a plurality of incoupling means, the centres of said radiation areas being spaced apart from each other. The temperature of the material is measured in each of said plurality of radiation areas, and the radiation dose of said plurality of incoupling means is controlled, dependent on the respective temperature, in such a way that a substantially uniform temperature of the material is obtained in all of said plurality of radiation areas. The method is particularly useful for curing or crosslinking polymers or resins. Moreover, a device for carrying out such method is proposed.

IPC 8 full level

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CPC (source: EP)

H05B 6/72 (2013.01); **H05B 6/78** (2013.01)

Citation (applicant)

- FR 2874473 A1 20060224 - BOULARD MICHEL [FR]
- WO 9713136 A1 19970410 - CEM CORP [US], et al
- US 5459301 A 19951017 - MILLER ALAN E [US], et al

Citation (search report)

- [X] WO 9713136 A1 19970410 - CEM CORP [US], et al
- [X] FR 2874473 A1 20060224 - BOULARD MICHEL [FR]
- [X] US 5459301 A 19951017 - MILLER ALAN E [US], et al

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