

Title (en)

Use of silver to control iodine level in electrodeless high intensity discharge lamps.

Title (de)

Verwendung des Silbers zum Steuern des Iodniveaus in elektrodenlosen Entladungslampen hoher Intensität.

Title (fr)

Utilisation de l'argent pour contrôler le niveau d'iode des lampes à décharge à haute intensité sans électrodes.

Publication

EP 0645799 A1 19950329 (EN)

Application

EP 94306479 A 19940902

Priority

US 12538893 A 19930923

Abstract (en)

Silver is added to the fill of an electrodeless high intensity metal halide discharge lamp, which includes at least one metal iodide as a fill ingredient, for controlling the iodine vapor level therein. In operation, silver reacts with free iodine, forming silver iodide (AgI), which has a relatively high boiling point and a relatively low vapor pressure. The iodine level is thus controlled below an arc instability threshold to promote and maintain arc stability. In addition, silver does not attack the quartz arc tube wall because silica (SiO₂) is much more stable than silver oxide (Ag₂O). Moreover, the addition of silver to the arc tube does not accelerate the decomposition of iodides in the fill, such as sodium iodide (NaI), cerium iodide (CeI₃), lanthanum iodide (LaI₃), neodymium iodide (NdI₃), and praseodymium iodide (PrI₃), which would otherwise enhance devitrification and etching of the quartz wall. Lamp performance and life are thus substantially improved using silver as an iodine getter. <IMAGE>

IPC 1-7

H01J 61/26; **H01J 61/82**; **H01J 65/04**

IPC 8 full level

H01J 7/18 (2006.01); **H01J 61/12** (2006.01); **H01J 61/26** (2006.01); **H01J 61/82** (2006.01); **H01J 65/04** (2006.01)

CPC (source: EP)

H01J 61/125 (2013.01); **H01J 61/26** (2013.01); **H01J 61/827** (2013.01); **H01J 65/048** (2013.01)

Citation (search report)

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Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0645799 A1 19950329; CA 2130424 A1 19950324; JP H07153371 A 19950616

DOCDB simple family (application)

EP 94306479 A 19940902; CA 2130424 A 19940818; JP 22230794 A 19940919