

ABSTRACT OF THE DISCLOSURE

ADDITION OF D₂ TO H₂ TO DETECT AND CALIBRATE ATOMIC HYDROGEN FORMED BY DISSOCIATIVE ELECTRON ATTACHMENT

A method of detecting and calibrating dry fluxing metal surfaces of one or more components to be soldered by electron attachment using a gas mixture of reducing gas comprising hydrogen and deuterium, comprising the steps of: a) providing one or more components to be soldered which are connected to a first electrode as a target assembly; b) providing a second electrode adjacent the target assembly; c) providing a gas mixture comprising a reducing gas comprising hydrogen and deuterium between the first and second electrodes; d) providing a direct current (DC) voltage to the first and second electrodes to form an emission current between the electrodes and donating electrons to the reducing gas to form negatively charged ionic reducing gas and molecules of hydrogen bonded to deuterium; e) contacting the target assembly with the negatively charged ionic reducing gas and reducing oxides on the target assembly.

Related apparatus is also disclosed.

Fig. 1