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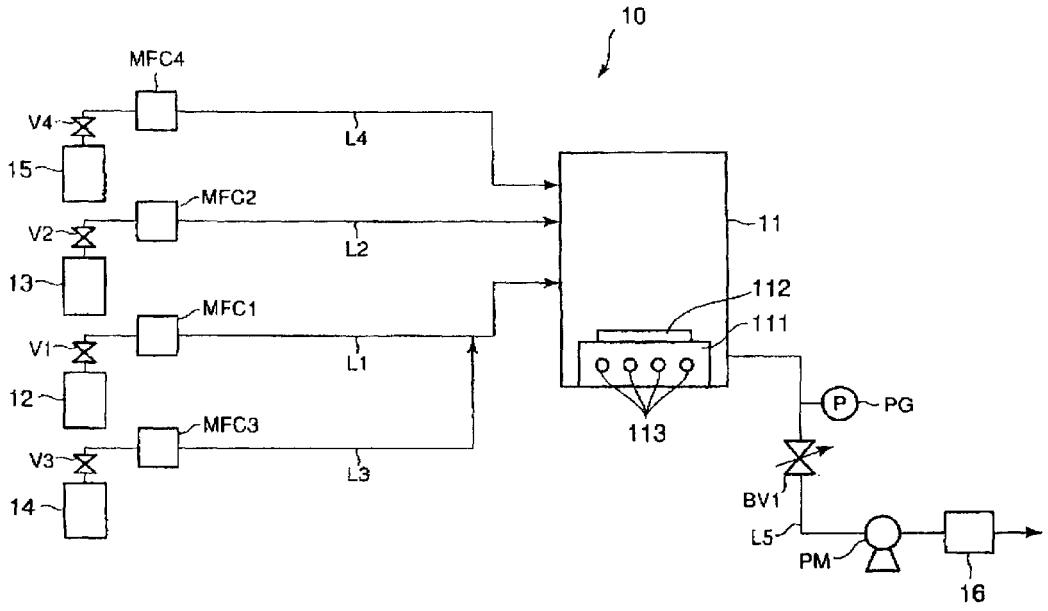
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(54) Title: METHODS FOR PRODUCING SILICON NITRIDE FILMS AND SILICON OXYNITRIDE FILMS BY THERMAL CHEMICAL VAPOR DEPOSITION



(57) Abstract: Silicon nitride film is formed on substrate (112) by feeding trisilylamine and ammonia into a CVD reaction chamber (11) that holds substrate (112). During this process, the ammonia gas/trisilylamine gas flow rate ratio is set to a value of at least 10 and/or the thermal CVD reaction is run at a temperature no greater than 600°C. Silicon oxynitride is obtained by also introducing an oxygen source gas into the CVD reaction chamber (11). The method according to the invention avoids the production of ammonium chloride and/or the incorporation of carbonaceous contaminants which are detrimental to the quality of the deposited film.

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