推　薦　函

事由：推薦電子研究所博士班研究生蔡宗鳴提出論文，參加國立交通大學博士論文口試。

說明：本校電子研究所博士班研究生蔡宗鳴，業已修畢部訂所需課程學分，通過博士資格考之學科考試，並完成博士論文「低介電常數材料在多層導體連線系統上之製程整合研究」初稿，且有數篇相關之論文發表或送審，茲列舉如下：

International Regular Journals:

1. “Elimination of dielectric degradation for chemical-mechanical planarization of low-k hydrogen silisesquioxane”, *Jpn. J. Appl. Phys.*, Vol. 40, pp. 3143-3146, 2001.
2. “The effect of ammonia plasma treatment on low-k methyl-hybrido-silsesquioxane against photoresist stripping damage”, *Thin Solid Films*, vol. 398, pp. 632-636, 2001.
3. “Recovering dielectric loss of low dielectric constant organic siloxane during the photoresist removal process”, *J. Electrochem. Soc.*, vol. 149, no. 8, pp. F81-F84, 2002.
4. “Eliminating dielectric degradation of low-k organosilicate glass by trimethylchlorosilane treatment”, *J. Vac. Sci. Technol. B*, vol. 20, no. 4, pp. 1561-1566, 2002.
5. “Trimethylchlorosilane treatment of ultralow dielectric constant material after photoresist removal processing”, *J. Electrochem. Soc.*, vol. 149, no. 10, pp. F145-F148, 2002.
6. “The novel pattern method of low-k hybrid-organic-siloxane-polymer film using X-ray exposure”, *Thin Solid Films*, vol. 420, pp. 403-407, 2002.
7. “CMP of ultra low-k material porous-polysilazane (PPSZ) for interconnect applications”, *Thin Solid Films*, vol. 447, pp. 524-530, 2004.
8. “Method to improve chemical-mechanical-planarization polishing rate of low-k methyl-silsesquiazane for ultralarge scale integrated interconnect application”, *J. Vac. Sci. Technol. B*, vol. 22, no.3, pp. 1196-1201, 2004.

International Letter Journals:

1. “Direct Patterning of low-k hydrogen silsesquioxane using X-ray exposure technology”, *Electrochem. And Solid-State Lett.*, vol. 6, no. 5, pp. G69-G71, 2003.
2. “Dielectric characteristics of low-permittivity silicate using electron beam direct patterning for intermetal dielectric applications”, *Appl. Phys. Lett.*, vol. 83, pp. 4226-4228, 2003.
3. “CMP of low-k methylsilsesquiazane with oxygen plasma treatment for multilevel interconnect applications”, *Electrochem. And Solid-State Lett.*, vol. 7, no. 6, pp. G122-G124, 2004.

綜上所陳，蔡君已具備國立交通大學電子研究所應有之教育及訓練水準，謹此推薦蔡君參加交通大學電子研究所博士論文口試。

此致

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中 華 民 國 九 十 三 年 11 月 18 日