過去二年來〔90-91〕，本實驗室共發表論文十九篇，我們的研究，基本上圍繞三個不同的方向，茲簡述如下：

1. 新合成方法：發展新合成方法，以製備具本實驗室特色之有機光電材料，是本實驗室的特色。我們發現利用有機鋰試劑對於炔丙基硫酸醛之開環反應，可利用到夫喃及比咯之合成，由之我們可以合成一系統之含夫喃及比咯之寡聯芳香環衍生物，其長度可達 7 nm。此外對於矽氧醚聯結之 cyclophane 的合成，norbornene 之新型開環岐化聚合反應，以及縮醛之烯化反應等，都略有建樹。

這方面代表作為:

"Allylic Dithioacetal as a Propene-1,3-Zwitterion Synthon. Regioselective Conversion of C-S Bonds in Allylic Dithioacetals into C-C Bonds"
Chiang, C.-C.; Luh, T.-Y. *Synlett* **2001**, 977-979.

"Unexpected Lewis Acid-Mediated Dimerization of 1,3-Diarylpropargylic Alcohols",
Feng, A.-H.; Chen, J.-Y.; Yang, L.-M.; Lee, G.-H.; Wang, Y.; Luh, T.-Y. *J. Org. Chem.* **2001**, *66*, 7922-7924.

"Combining Furan Annulation, Heck Reaction, and Sonogashira Coupling for the Synthesis of Oligoaryls",
Liu, C. -Y.; Luh, T. -Y. *Org. Lett.* **2002**, *4*, 4305-4307

"Bidirectional Iterative Synthesis of Alternating Benzene-Furan and Oligomers",
toward Molecular Wires
Lee, C. -F.; Song, H. -C.; Luo, S. -J.; Tso, H. -H.; Luh, T. -Y. *Chem. Commun.* **2002**, 2824-2825.

2. 共軛化合物及高分子之光物理性質：在這一領域中，我們對於一系列之含矽取代基之共軛寡聚物及高分子之光物理性質，作一系統性的探討。

這方面之代表作為：

"Synthesis of Silylene-Spaced Divinylnaphthalene Copolymers",
Murthy, V. R. K.; Luh, T.-Y. *Arkivoc* **2001**, *2 (10)*, TG-185G.

"First Siloxane Tethered Paracyclophane",
Sudhakar, S.; Lee, G.-H.; Wang, Y.; Hsu, J.-H.; Luh, T.-Y. *J. Organomet. Chem.* **2002**, *646*, 167-170.

"Intrachain Energy Transfer in Silylene-Spaced Alternating Donor-Acceptor Divinylarenes Copolymers"
Cheng, Y. -J.; Hwu, T. -Y.; Hsu, J. -H.; Luh, T. -Y. *Chem. Commun.* **2002**, 1978-1979.

"Norbornadiene as an efficient hydrogen scavenger for the palladium catalyzed conversion of hydrosilanes to alkoxysilanes",
Sudhakar, S.; Luh, T. -Y. *J. Org. Chem.* **2002**, *67*, 6860-6862.

3. 共軛化合物之光電性質：在這一領域中，我們對於發光二極體的研究有一定的成果。

這方面之代表作為：

"Programmable Organic Light Emitting Devices",
Wu, C. C.; Chen, C. W.; Lin Y. T.; Yu, H.-L.; Hsu, J.-H.; Luh, T.-Y. *Appl. Phys. Lett.* **2001**, *79*, 3023-3025.

"Non-amine-based Furan-containing Oligoaryls as Efficient Hole Transporting Materials",
Zhang, L. -Z.; Chen, C. -W.; Lee, C. -F.; Wu, C. -C.; Luh, T. -Y. *Chem. Commun.* **2002**, 2336-2337.

"Fuzzy-Junction Organic Light-Emitting Devices",
Chen, C. -W.; Cho, T. -Y.; Wu, C. -C.; Yu, H. -L.; Luh, T. -Y. *Appl. Phys. Lett,* **2002**, *81*, 1570-1572.

我們還有一些其他方面的工作，也是多年來在國科會支助下的成果，茲列出我們在這二年來著作如下：

149. "Rational Designing of Polymers for Optoelectronic Interests",
Luh, T.-Y.; Chen, R.-M.; Hwu, T.-Y.; Basu, S.; Shiau, C.-W.; Lin, W.-Y.; Jin, B.-Y.; Hsu, C. C. *Pure Appl. Chem.* **2001**, *73*, 243-246.

150. "Fullerenes as a New Class of Radioprotectors",
Lin, H.-S.; Lin, T.-S.; Lai, R.-S.; D'Rosario, T.; Luh, T.-Y. *Int. J. Radiat. Biol.* **2001**, *77*, 235-239.

151. "$W(CO)_6$-Mediated Desulfuroligomerization of Bis-Dithioacetals. New Synthesis of Substituted Oligo(phenylene-vinylenes)",
Shiau, C.-W.; Shen, C. K.-F.; Pan, W.; Kuo, C.-H.; Luh, T.-Y. *J. Organomet. Chem.* **2001**, *624*, 63-68.

152. "Inhibition of Group Steptococcus Infection by Carboxyfullerene"
Tsao, N.; Luh, T.-Y.; Chou, C.-K.; Wu, J.-J.; Lin, Y.-S.; Lei, H.-Y. *Antimicrob. Agents. Chemother.* **2001**, *45*, 1788-1793.

153. "Allylic Dithioacetal as a Propene-1,3-Zwitterion Synthon. Regioselective Conversion of C-S Bonds in Allylic Dithioacetals into C-C Bonds"
Chiang, C.-C.; Luh, T.-Y. *Synlett* **2001**, 977-979.

154. "Programmable Organic Light Emitting Devices",
Wu, C. C.; Chen, C. W.; Lin Y. T.; Yu, H.-L.; Hsu, J.-H.; Luh, T.-Y. *Appl. Phys. Lett.* **2001**, *79*, 3023-3025.

155. "Unexpected Lewis Acid-Mediated Dimerization of 1,3-Diarylpropargylic Alcohols",
Feng, A.-H.; Chen, J.-Y.; Yang, L.-M.; Lee, G.-H.; Wang, Y.; Luh, T.-Y. *J. Org. Chem.* **2001**, *66*, 7922-7924.

156. "Inhibition of the increased permeability of blood-brain barrier in Escherichia coli-induced meningitis by carboxyfullerene",
Tsao, N.; Wu, C. M.; Hsu, H. P.; Liu, C. C.; Luh, T.-Y.; Chou, C.-K.; Lei, H.-Y. *Fullerene Sci. Tech.* **2001**, *9*, 307-320.

157. "Synthesis of Silylene-Spaced Divinylnaphthalene Copolymers",
Murthy, V. R. K.; Luh, T.-Y. *Arkivoc* **2001**, *2 (10)*, TG-185G.

158. "Synthesis and Reactions of Highly Protected Mannosamines",
Shieu, J.-C.; Shaw, Y.-J.; Luh, T.-Y. *J. Chin. Chem. Soc.* **2001**, *48*, 1035-1040.

159. "First Siloxane Tethered Paracyclophane",
Sudhakar, S.; Lee, G.-H.; Wang, Y.; Hsu, J.-H.; Luh, T.-Y. *J. Organomet. Chem.* **2002**, *646*, 167-170.

160. "*In vitro* Action of Carboxyfullerene"
Tsao, N.: Luh, T.-Y.; Chou, C.-K.; Chang, T.-Y. ; Wu, J.-J. ; Liu, C.-C. ; Lei, H.-Y. *J. Antimicrob. Chemother.* **2002**, *49*, 641-649.

161. "Combining Furan Annulation, Heck Reaction, and Sonogashira Coupling for the Synthesis of Oligoaryls",

Liu, C. -Y.; Luh, T. -Y. *Org. Lett.* **2002**, *4*, 4305-4307

162. "Intrachain Energy Transfer in Silylene-Spaced Alternating Donor-Acceptor Divinylarenes Copolymers"
Cheng, Y. -J.; Hwu, T. -Y.; Hsu, J. -H.; Luh, T. -Y. *Chem. Commun.* **2002**, 1978-1979.

163. "Bidirectional Iterative Synthesis of Alternating Benzene-Furan and Oligomers", toward Molecular Wires
Lee, C. -F.; Song, H. -C.; Luo, S. -J.; Tso, H. -H.; Luh, T. -Y. *Chem. Commun.* **2002**, 2824-2825.

164. "Non-amine-based Furan-containing Oligoaryls as Efficient Hole Transporting Materials",
Zhang, L. -Z.; Chen, C. -W.; Lee, C. -F.; Wu, C. -C.; Luh, T. -Y. *Chem. Commun.* **2002**, 2336-2337.

165. "Norbornadiene as an efficient hydrogen scavenger for the palladium catalyzed conversion of hydrosilanes to alkoxysilanes",
Sudhakar, S.; Luh, T. -Y. *J. Org. Chem.* **2002**, *67*, 6860-6862.

166. "Local carboxyfullerene protects cortical infarction in rat brain",
Lin, A. M. Y.; Fang, S. F.; Lin, S. Z.; Chou, C. K.; Luh, T. -Y.; Ho L. T. *Neurosci. Res.* **2002**, *43*,
317.

167. "Fuzzy-Junction Organic Light-Emitting Devices",
Chen, C. -W.; Cho, T. -Y.; Wu, C. -C.; Yu, H. -L.; Luh, T. -Y. *Appl. Phys. Lett,* **2002**, *81*, 1570-1572.