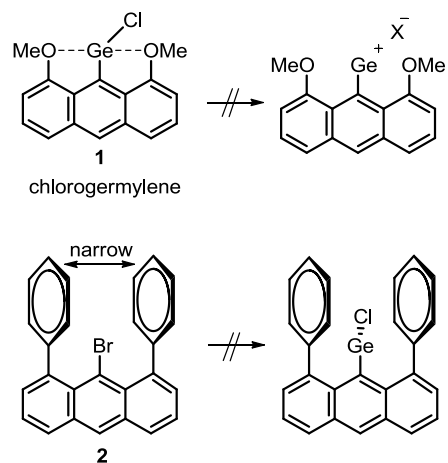


○Aki Katori<sup>1</sup>, Shin-ya Sahara<sup>1</sup>, Yohsuke Yamamoto<sup>1</sup><sup>1</sup>Graduate School of Science, Hiroshima University

In order to isolate unstable low-valent main group element compounds various sterically protecting ligands have been developed. Recently, we reported divalent Ge (**1**) stabilized by

1,8-dimethoxyanthracene ligand (Scheme 1). Based on the X-ray analysis, the two oxygen atoms coordinated the Ge center almost equally, resulting the stable divalent Ge. Since the corresponding cationic compounds could not be generated by the reaction of **1** with AgOTf etc, we prepared another type of ligand **2** with the hope for stabilization by  $\pi$  electrons of the benzene rings. But Ge atom could not be introduced probably because of the steric bulkiness of the ligand tried to develop the new ligand system.

Scheme 1

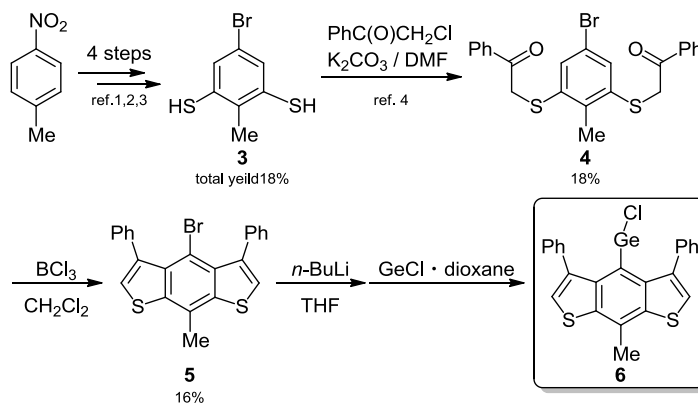


ref.) Unrin-in, T. Master Thesis, 2005.

In this study, new  $\pi$ -donor ligand with benzothiophene framework with wider space between the two phenyl rings was synthesized to investigate the stabilizing ability for low-valent main group element compounds.

The synthesis of precursor **5** was carried out according to Scheme 2. Thiol **3** was prepared by a known procedure from *p*-nitrotolene in 4 steps. This thiol (**3**) was reacted with phenacylchloride and  $K_2CO_3$  in DMF to give **4**. By cyclization reaction with  $BCl_3$ , **4** could be converted to a novel ligand precursor **5**. The germanium

Scheme 2



atom was introduced by the reaction of dichlorogermirene · dioxane with a lithiated derivative of **5** to give chlorogermirene compound **6**, which was characterized by MS spectrum. Further reactions of **6** are in progress.

ref.

- 1) Kraszkiewicz, L. et. al. *Tetrahedron*, 2004, 60, 9113  
 2) Berude, M.; Poirier, D. *Org. Lett.* 2004, 6, 3127  
 3) Takagi, K. *Chem. Lett.* 1985, 14, 1307  
 4) Soares-da-Silva, P. et. al. *J. Med. Chem.* 2004, 47, 6207