## Absence of Halogen Bonding in the High-pressure Structure of Chlorotrimethylsilane

<u>Roman Gajda</u>, Kamil Dziubek, Andrzej Katrusiak, *Faculty of Chemistry, Adam Mickiewicz University, Poznań, Poland.* E-mail: katran@amu.edu.pl

Halogen—halogen interactions are usually considered as the next most important cohesion forces, apart from the hydrogen bonds, governing the arrangement of molecules in crystals [1]. Such interactions are observed in many compounds containing halogens.

The interactions of one halogen atom with the lone pair of another halogen atom forms intermolecular bridges. The chlorine…chlorine interactions belong to the most fundamental supramolecular synthons [2].

Meanwhile in the structure of chlorotrimethylsilane determined at low temperature [3] no halogen halogen interactions are observed. Therefore we have undertaken the high-pressure study of this compound to check if short chlorine contacts would exist in the compressed crystal. We have determined the crystal structure of chlorotrimethylsilane at 0.3 and 0.6 GPa. At these pressures the crystal is orthorhombic, space group  $Pmn2_1$ , whereas the crystal frozen at low temperature crystallized in monoclinic space group  $P2_1/m$ . It occurs that also in this new high-pressure phase of  $C_3H_9ClSi$ no close chlorine contacts are observed.

[1] Metrangolo P., Resnati G., *Chem. Eur. J.*, 2001, **7**, 2511. [2] Bosch E., Barnes C.L., *Cryst. Growth Des.* 2002, **4**, 299. [3] Bushmann J., Lentz D., Luger P., Röttger M., *Acta Cryst.*, 2000, **C56**, 121.

Keywords: weak interactions, high-pressure crystallography, noncovalent bonding