IN SEARCH OF TRIGEMINAL PENTAFLUOROSULFANYL (SF_5) CARBON DERIVATIVES

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In the course of our studies to synthesize as yet unknown perfluorocarbon compounds containing three SF_5, R_fSF_4, or SF_5 and R_fSF_4 groups, all attached to the same carbon atom, we have investigated the fluorination behavior of promising starting materials using different fluorination techniques like elemental as well as electrochemical methods.

$H_2C(SCH_3)_2$	(1)	$HC(SCH_3)_3$	(2)
$HC(SH)_3$	(3)	$HC(SAc)_3$	(4)
Hexathiaadamantane	(5)	Trimethylhexathiaadamantane	(6)

In compounds **2-6**, the tertiary carbon-sulfur structure is already present and has to survive the fluorination processes without complete degradation by cleavage of one of the carbon-sulfur bonds. Meanwhile, in compound **1** such a tertiary structure has to be formed during the fluorination via the cleavage of a C-S bond at one molecule, followed by the formation of a third C-S bond at the starting C-S geminal structure of another molecule. Such a "cleavage - new bond formation" phenomenon is a well-known experimental observation, especially during the electrochemical fluorination process. The results of the fluorinations of compounds **1-6** will be discussed in detail.