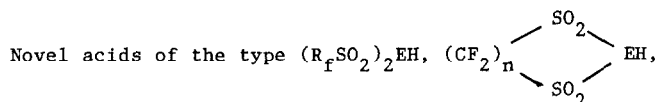


## SUPERACIDS OF NITROGEN AND CARBON

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$R_fSO_2EHSO_2(CF_2)_nSO_2EHSO_2R_f$ ,  $[R_fSO_2EHSO_2(CF_2)_nSO_2]_2EH$  and  $\{SO_2EHSO_2(CF_2)_n\}_m$  (E=CH,N) can be prepared in great variety starting with  $R_fSO_2F$  and  $FSO_2(CF_2)_nFSO_2F$ . These materials exhibit remarkable chemistry and structures.

PK's of nitrogen and carbon acids are remarkable and polyfunctional acids show no discernable decrease in successive PK values in water. Covalent derivatives exhibit unusual chemistry as exemplified by the N-F derivatives which show excellent potential in the selective fluorination of many organic compounds[1]. Electrochemical properties of these acids are of potential utility in many applications[2]. Covalent derivatives of the nitrogen acids are planar as are the anions of the carbon acids. Metal salts of these acids give unprecedented layered structures which may have unusual solid-state properties. A brief overview of this area will be presented.

- 1 S. Singh, D. D. DesMarteau, S. S. Zuberi, M. Witz and H-N Huang, J. Am. Chem. Society, **109** 7194 (1987).
- 2 M. Razaq, A. Razaq, E. Yeager, D. D. DesMarteau, and S. Singh, J. Electrochem. Soc., **136** 385 (1989).