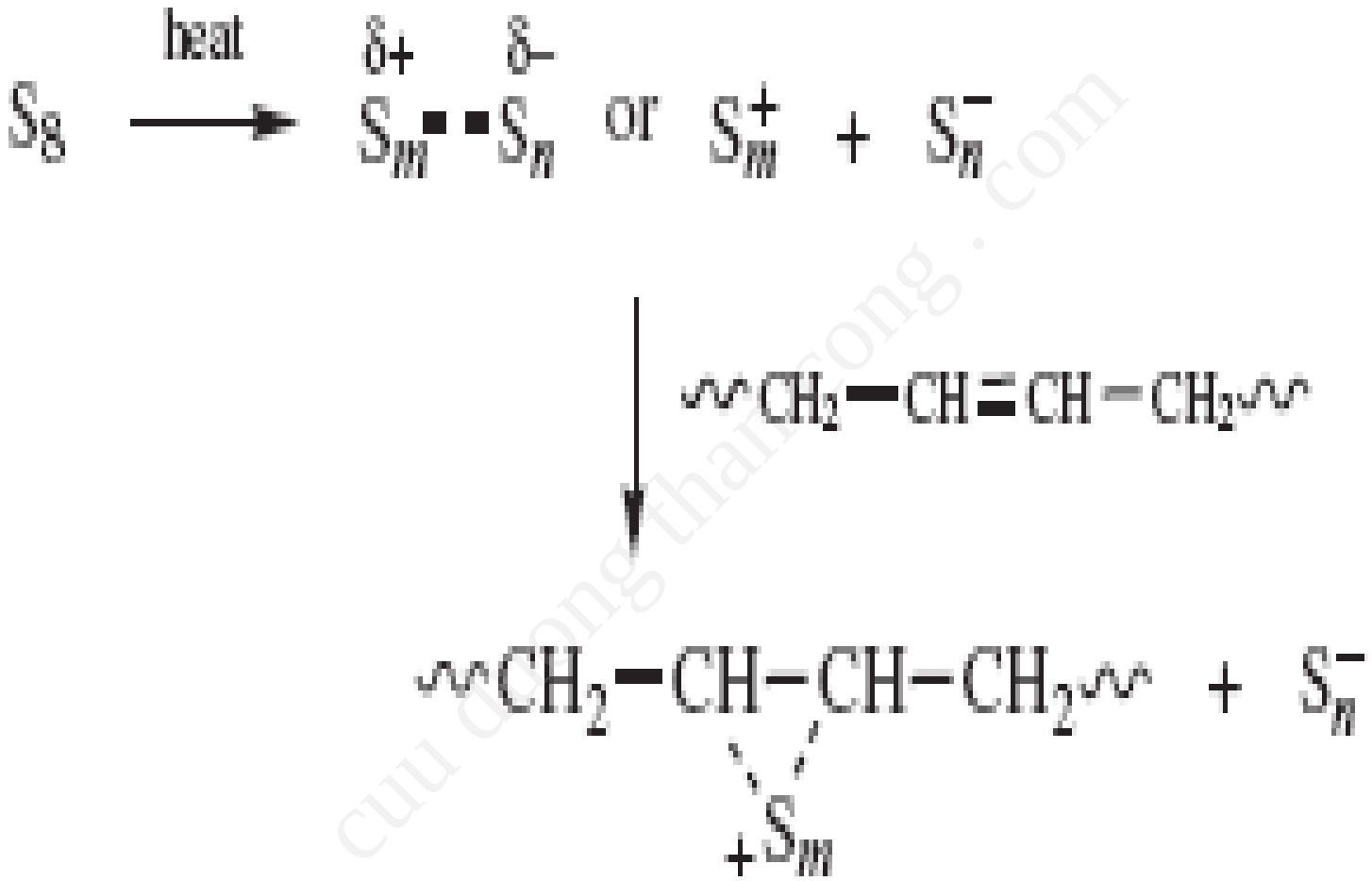
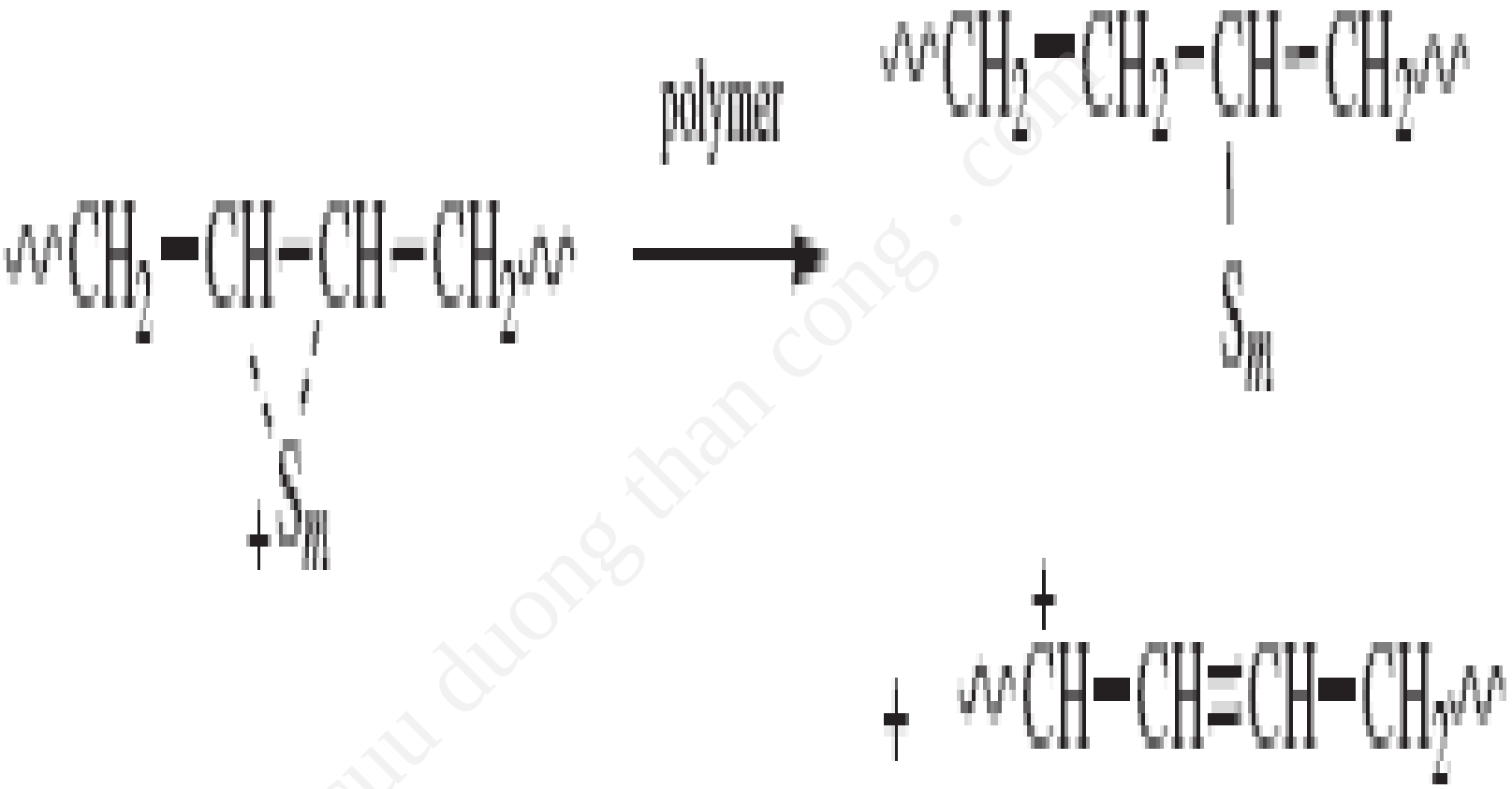
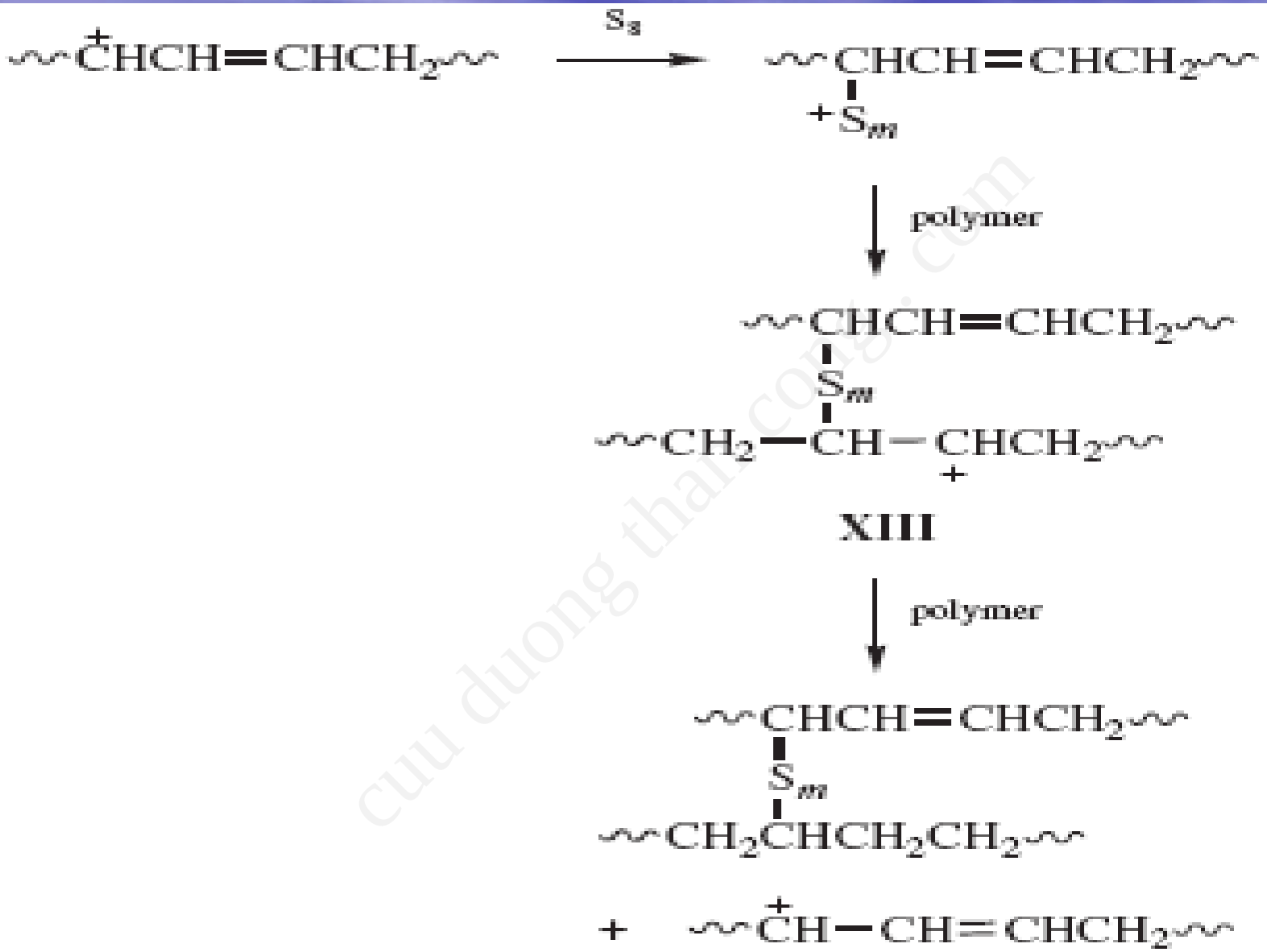
CROSSLINKING

ELASTOMER BASED ON 1,3-DIENES

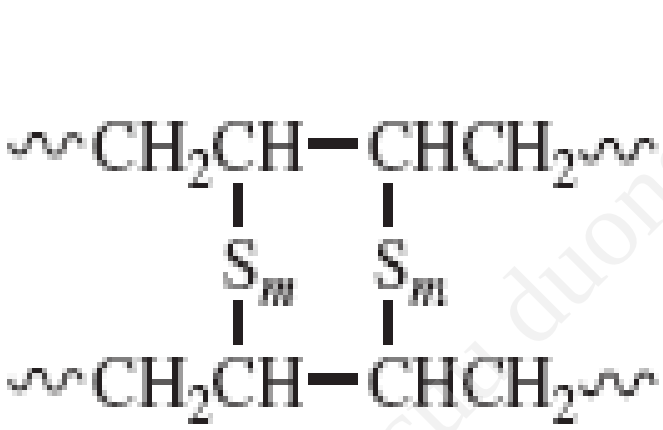




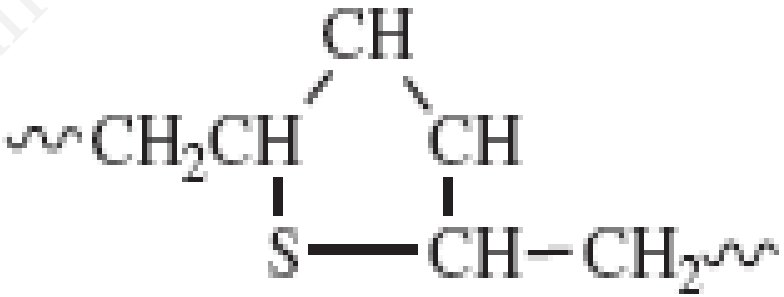


Accelerated Sulfur Vulcanization

vicinal crosslinks (XIV), and intramolecular cyclic sulfide structures (XV). (Structures XIV and XV do not contribute significantly to the physical properties of the polymer.)

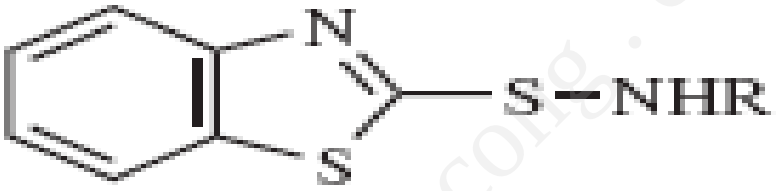


XIV

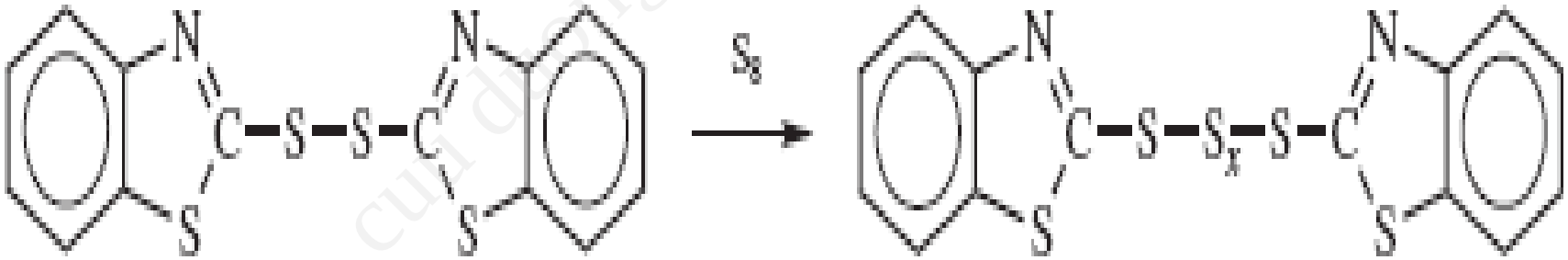


XV

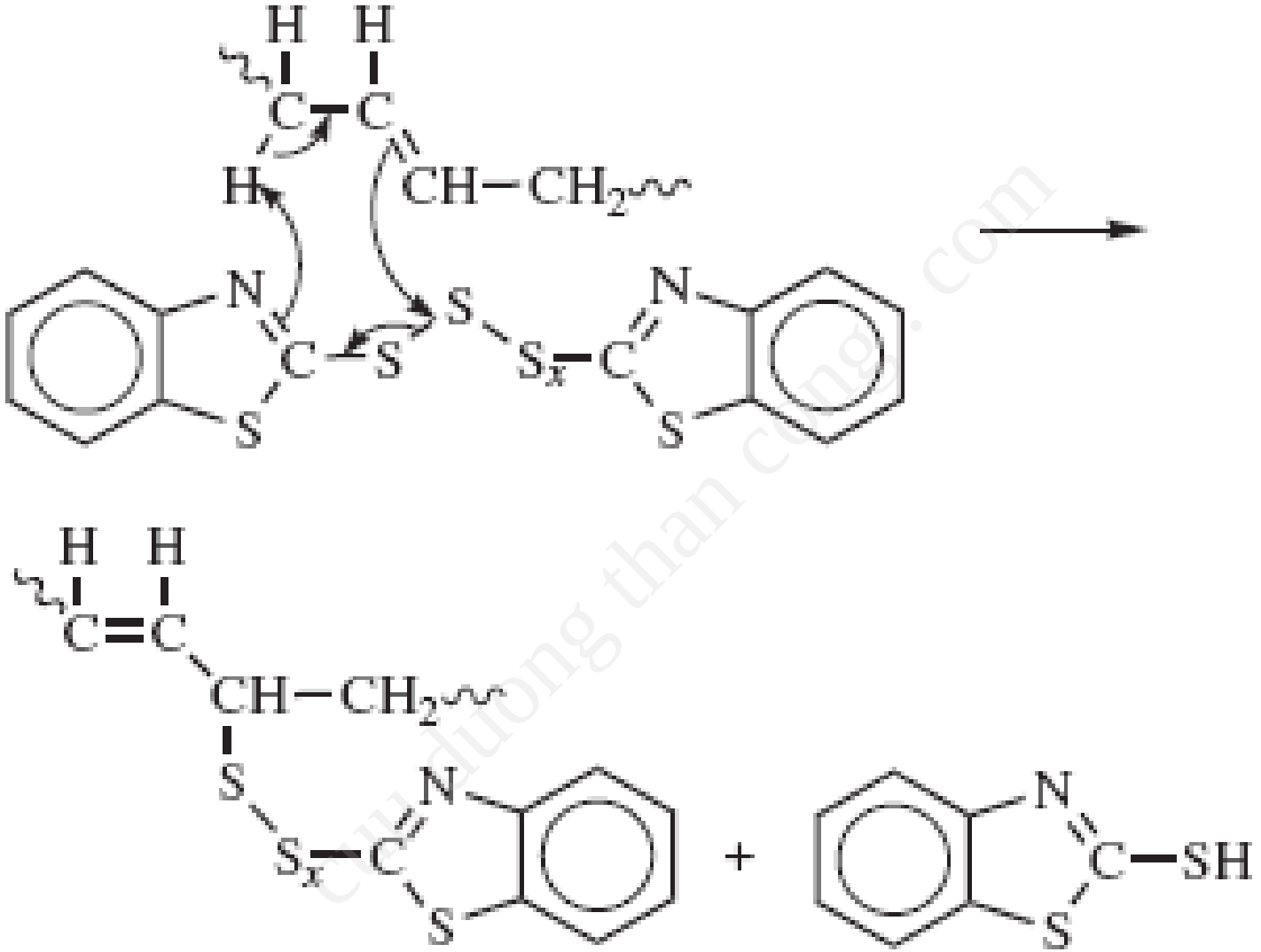
2-mercaptobenzothiazole (XVI)



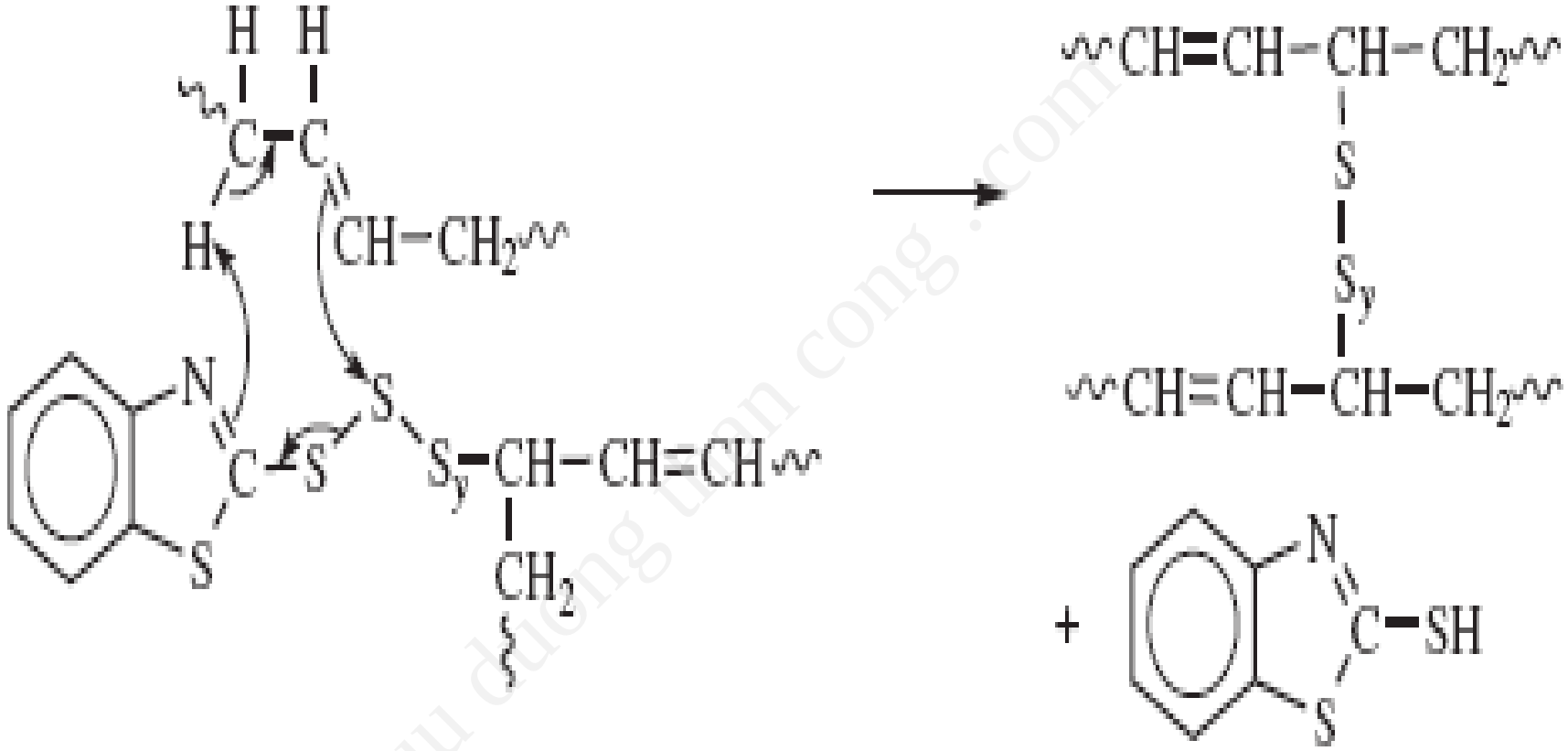
XVI

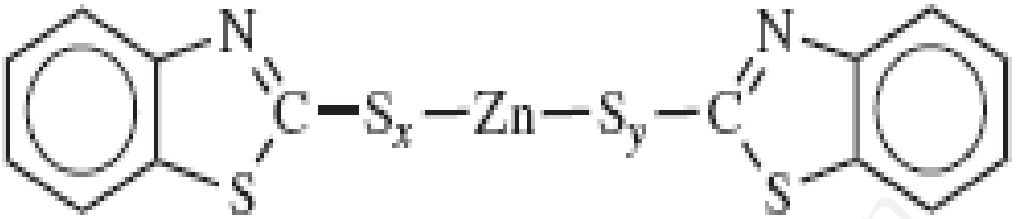


XVII XVIII



XIX





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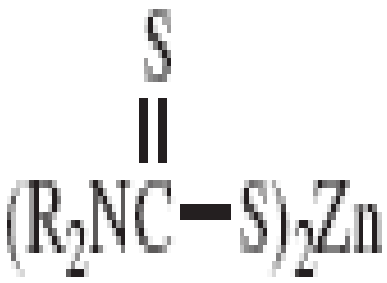
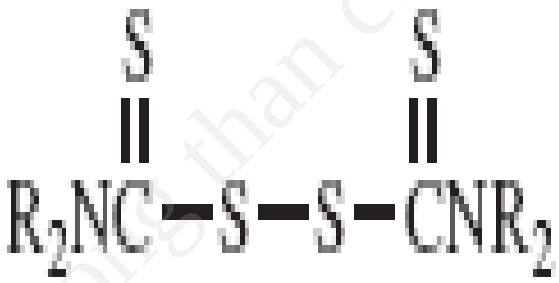
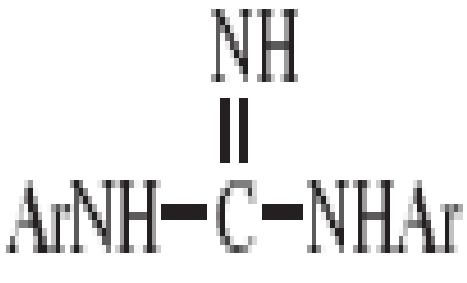


XXI

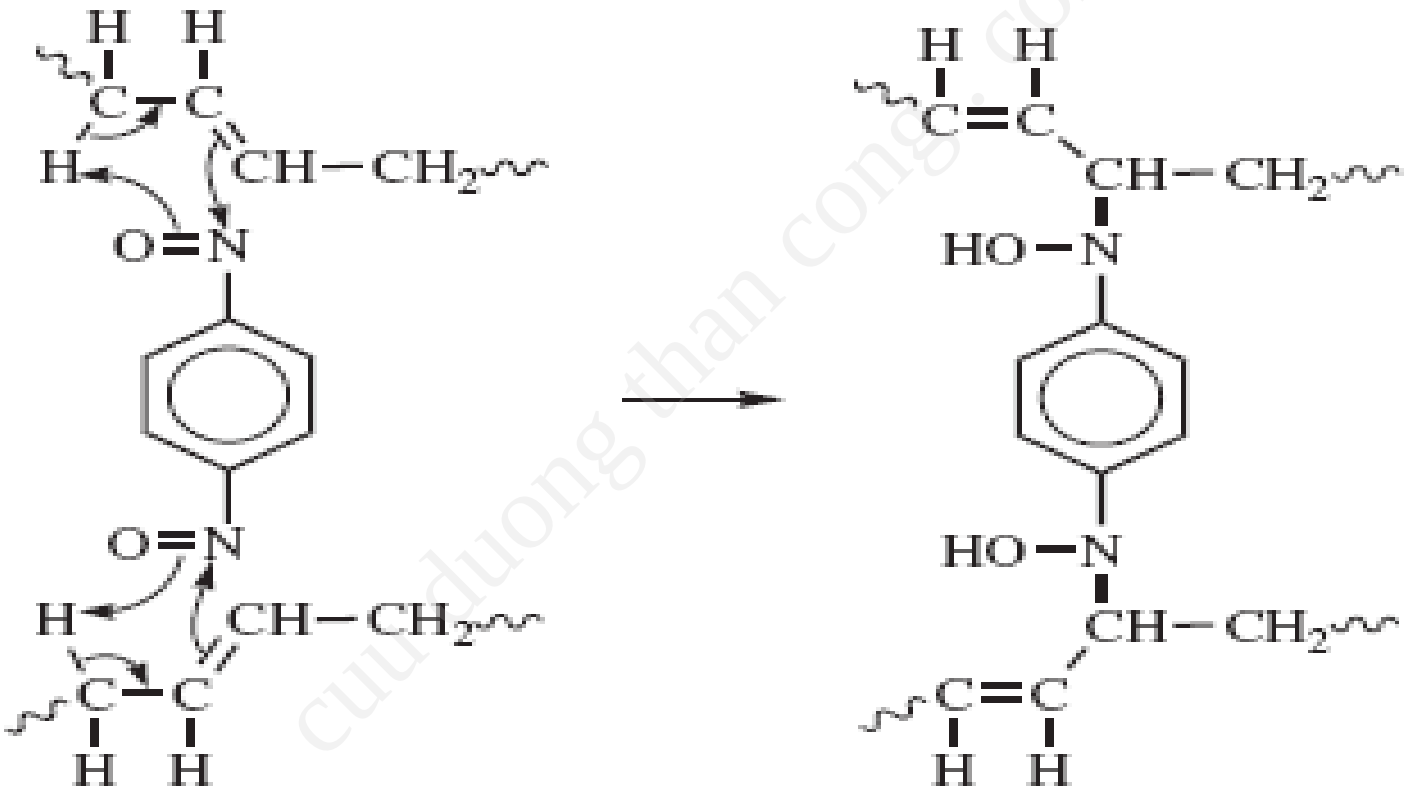


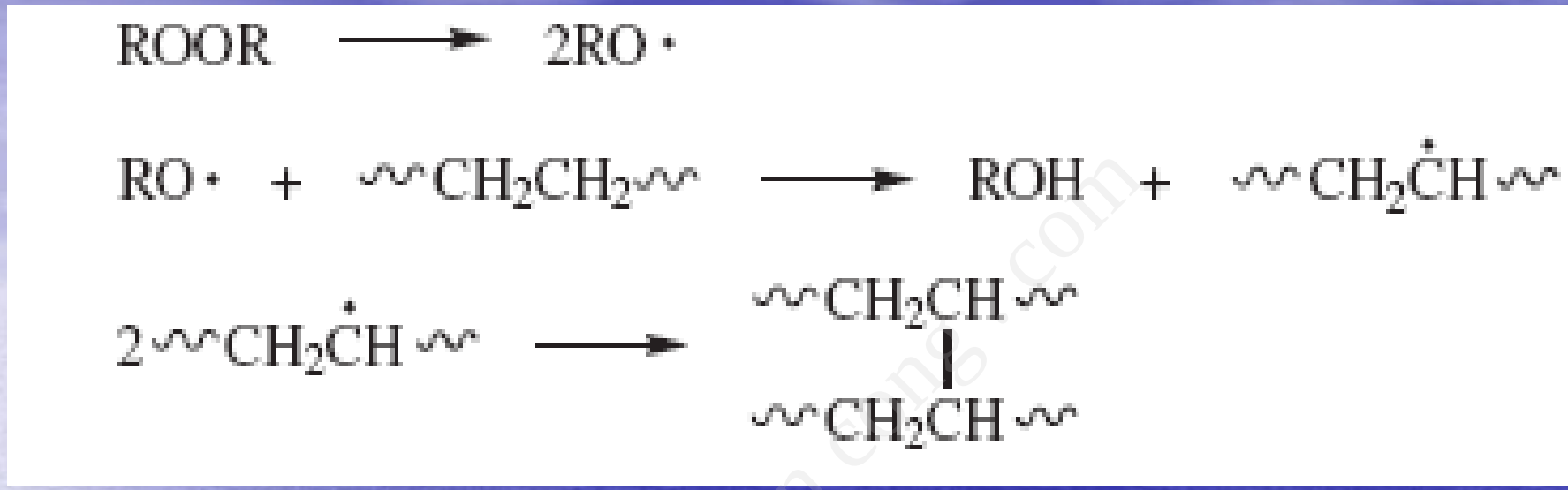
XXII



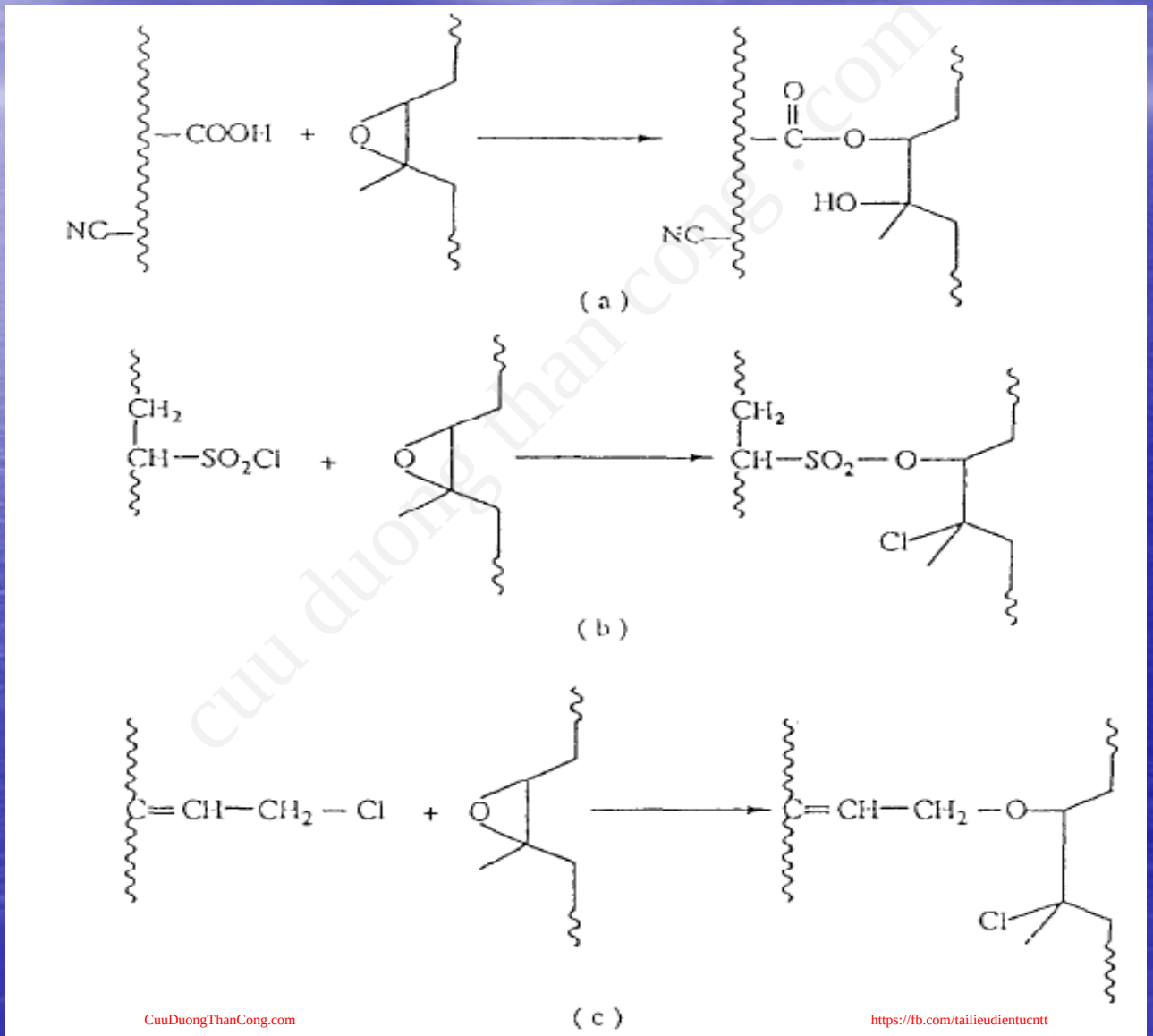
XXIII

Polydiene rubbers can also be crosslinked by heating with p-dinitrosobenzene

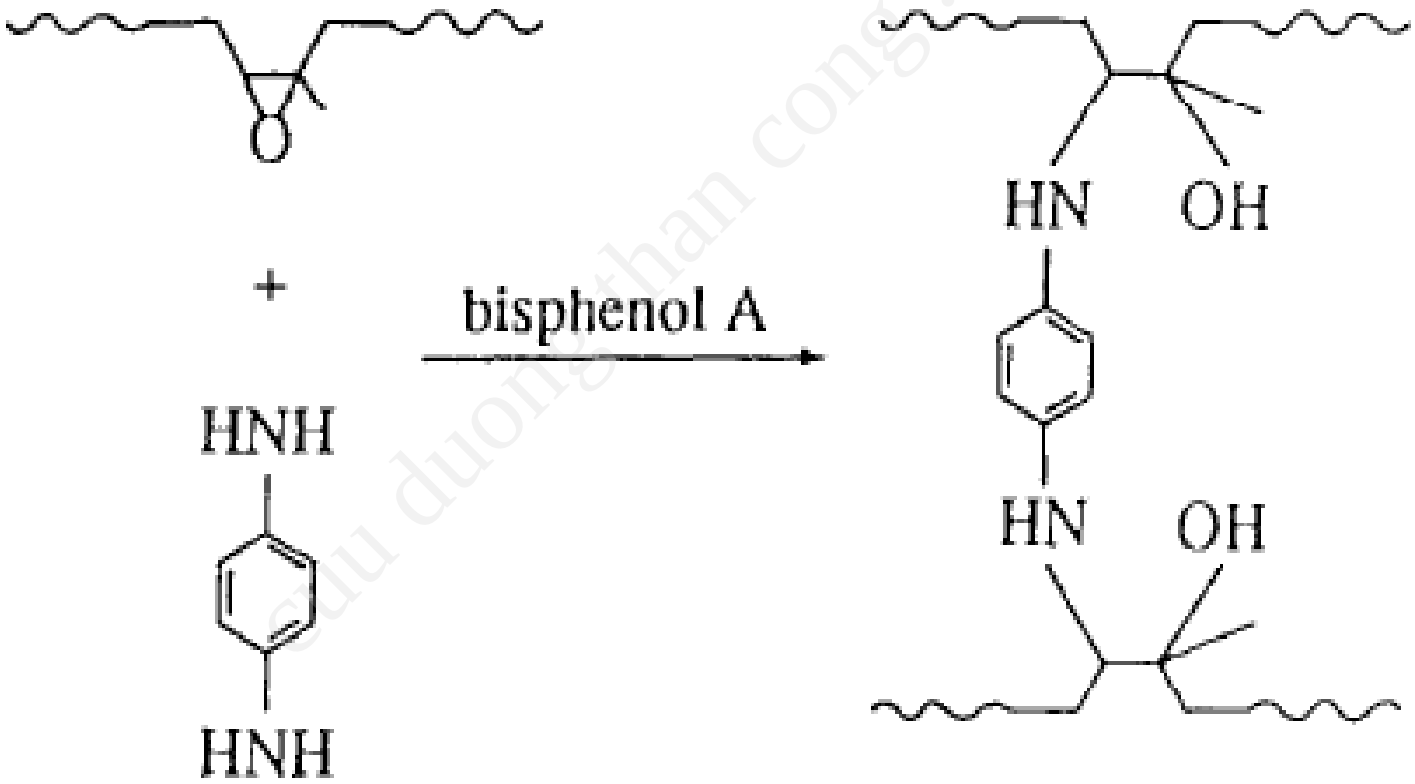




Proposed crosslinking reactions of ENR with (a) carboxylated nitrile rubber, (b) chlorosulfonated polyethylene rubber, and (c) polychloroprene rubber

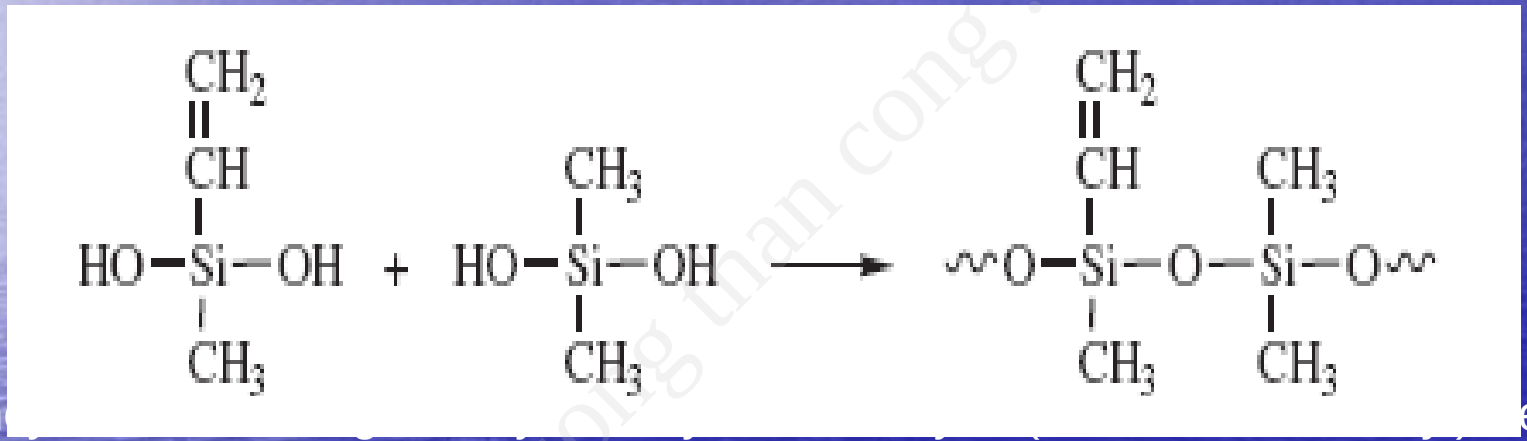


crosslinking reaction of ENR withp-phenylenediamine catalyzed by bisphenol A.



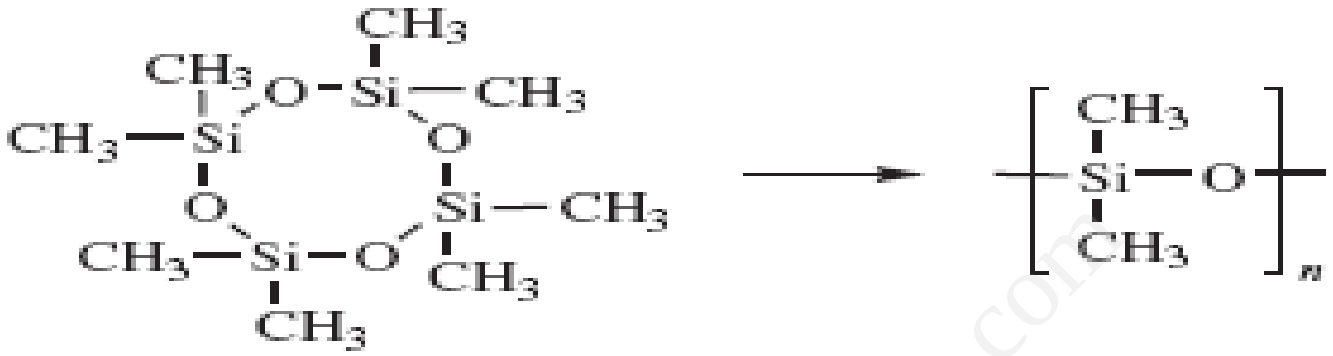
POLYSILOXANE

The crosslinking efficiency of the peroxide process can be increased for some systems by incorporating small amounts of a comonomer containing vinyl groups into the polymer.
This approach is used for polysiloxanes by copolymerization with small amounts of vinyltrimethylsilanol



Efficien eroxide

Vinyl Comonomer Content (mol %)	Number of Crosslinks per Peroxide Molecule Decomposed for Peroxide Concentration of	
	0.74%	1.47%
0.0	0.31	0.19
0.1	0.80	0.42
0.2	1.0	0.63



$\Delta H \# 0$ $\Delta S = 6,7\ J.mol^{-1}K^{-1}$