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# Graphical Abstracts/J. Fluorine Chem. 176 (2015) v–ix

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## Investigation of fluorosilicone polyacrylate film forming behavior on steel and PET substrates

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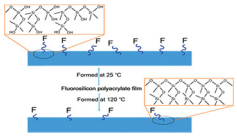

● Surface properties of fluorosilicone polyacrylate latex film are studied. ● Migration ability of fluorine is limited by silicon crosslinking reaction. ● Migration behavior of fluorine and silicon is affected by polarity of the substrate. ● Silicon containing groups are film–substrate interface enriched. ● Silicon crosslinking reactions are favored by a high film forming temperature.

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## N-perfluoro-*tert*-butylazoles

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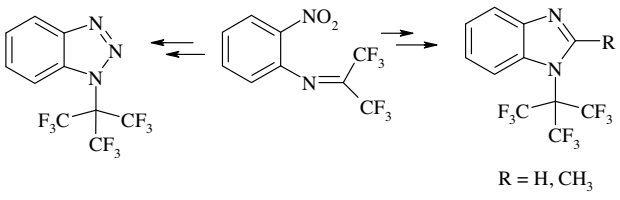


● The first benzimidazole and benzotriazole derivatives with N-perfluoro-*tert*-butyl group were obtained. ● The first heterocyclic carbene with a fully fluorinated group at the nitrogen atom was isolated. ● We report the original reaction sequence to heterocycles with N-perfluoro-*tert*-butyl group.

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## The surface properties and corrosion resistance of fluorinated polyurethane coatings

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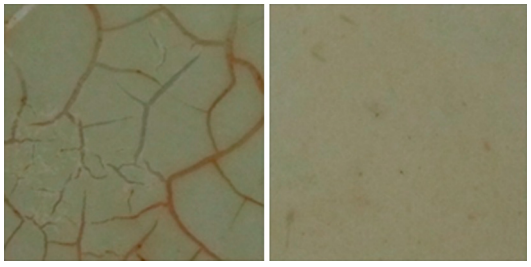

● Fluorine migrates to the top of surface and creates a low surface energy. ● Fluorinated polyurethane showed higher contact angle versus polyurethane. ● FPU coating has outstanding anti-corrosion resistance versus PU coating. ● The lower molecular weight FPO, the FPU coatings have better water resistance.

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## Flow property at capillary extrusion for ethylene–tetrafluoroethylene copolymer

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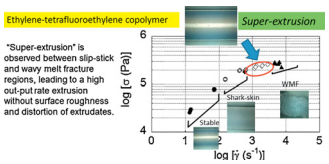
● Melt fracture of ethylene–tetrafluoroethylene copolymer is revealed. ● Super-extrusion occurs, leading to high out-put rate extrusion. ● Critical stresses of shark-skin and slip-stick failures are found.

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## Syntheses of isocyanates via amines and carbonyl fluoride

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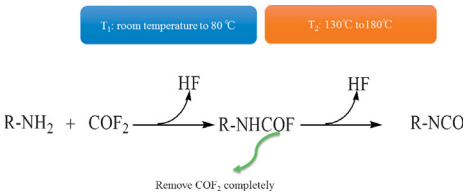
● Nine different isocyanates were first synthesized by reacting $COF_2$ with the corresponding amines. ● The reactions could be carried out under relatively mild conditions and in good yields. ● Two differences between $COF_2$ route and phosgene route are reported. ● The facile $COF_2$ route is attractive industrially.

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## On the question of zwitterionic intermediates in 1,3-dipolar cycloadditions between hexafluoroacetone and sterically crowded diazocompounds

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● Reactions of hexafluoroacetone and diazocompounds have polar nature.
● DFT calculations do not provide confirmation for stepwise mechanism.
● All attempts at optimization of zwitterions ended unsuccessfully.


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## Experimental studies on the flammability of mixtures of dimethyl ether

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● An experimental apparatus for testing explosion limits was developed. ● DME/R134a mixture reaches its CFR when the volume ratio of R134a to DME is about 5. ● An explosion limit of DME/R1234yf/R134a mixture is 10.7% by volume. ● The critical suppressive line of DME/R1234yf/R134a mixture was investigated.