



Graphical Abstracts/J. Fluorine Chem. 157 (2014) iv–vii

New nucleophilic rearrangement in the mechanism of the three-component domino cyclisation affording fluoroalkylated (pyrrolo)quinazolines

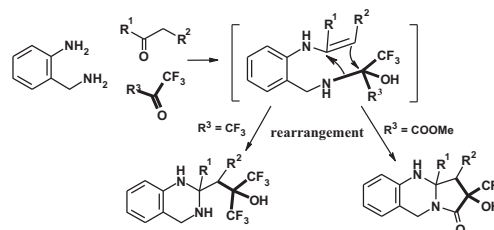
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- Mechanism of the domino three-component cyclisation was studied, which consists of three or four steps depending on the character of highly reactive component.
- A new nucleophilic rearrangement was proved as the crucial step of the cyclisation.
- The cyclisation was extended to highly reactive ketones, e.g. hexafluoroacetone.

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Binuclear cobalt carbonyl complexes of the strong π -acceptor trifluoromethyl isocyanide

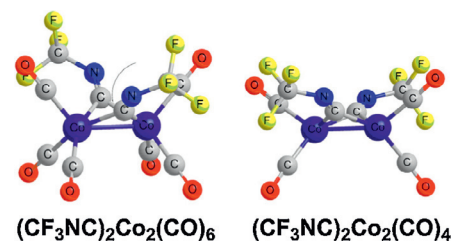
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- The species $(\text{CF}_3\text{NC})_2\text{Co}_2(\text{CO})_n$ ($n = 7, 6, 5, 4$) have been studied by density functional theory.
- Bridging CF_3NC groups are energetically preferred over bridging CO groups.
- Four-electron donor bridging $\eta^2\text{-}\mu\text{-CF}_3\text{NC}$ groups are found in higher energy $(\text{CF}_3\text{NC})_2\text{Co}_2(\text{CO})_n$ ($n = 5, 4$) structures.
- Coupling of two CF_3NC groups to form a $\text{CF}_3\text{N}=\text{C}=\text{C}=\text{NCF}_3$ ligand occurs in the $(\text{CF}_3\text{NC})_2\text{Co}_2(\text{CO})_7$ system.

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Synthesis and properties of poly(aryl ether ketone)s with 2,6-diphenylpyridyl moieties and 4-trifluoromethylphenyl side groups

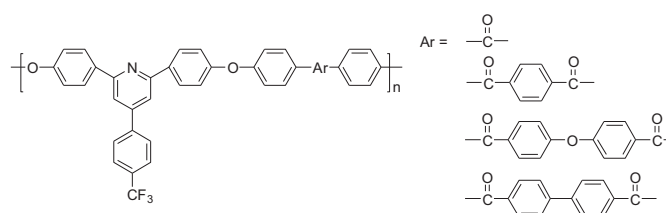
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- New bisphenol of 4-(4-trifluoromethylphenyl)-2,6-bis(4-hydroxyphenyl)pyridine was synthesized.
- Several fluorinated pyridine-containing aromatic poly(ether ketone)s (PEKs) were developed.
- These PEKs have low dielectric constants, good solubilities, and excellent thermal stability.

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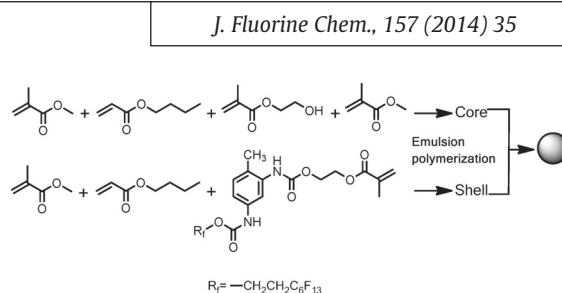
Synthesis and characterization of core-shell latex: Effect of fluorinated acrylic monomer on properties of polyacrylates

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● A fluorinated isocyanate acrylic monomer (FA) was synthesized. ● Core-shell poly(fluorine acrylate) latexes with fluorine in shell were prepared and characterized. ● Increasing FA monomer in emulsion polymerization affected latex film surface roughness and hydrophobicity. ● Water contact angles increased with film surface roughness. ● The FA monomer could enhance the abrasion resistance of the polymer films.



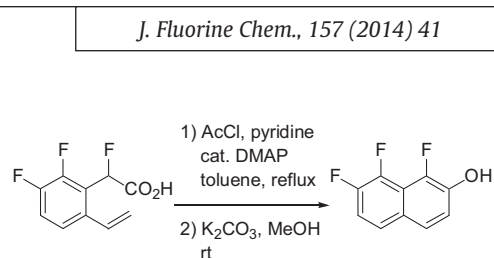
Facile synthesis of 1,7,8-trifluoro-2-naphthol via DMAP catalyzed cycloaromatization

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● 1,7,8-Trifluoro-2-naphthol, a key synthetic intermediate for liquid crystal compounds with large dielectric anisotropy value, was synthesized. ● DMAP catalyzed intramolecular cycloaromatization proceeded in good yield. ● The developed method was short and efficient.



The effect of donors-acceptors on the charge transfer properties and tuning of emitting color for thiophene, pyrimidine and oligoacene based compounds

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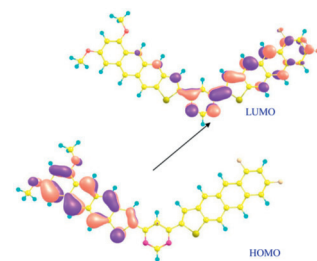
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● ICT has been improved by introducing the bridge, donor and acceptor moieties. ● Electronic, optical and charge transport properties have been tuned. ● DFT and TDDFT have been applied to predict the properties. ● The IP, EA, reorganization energies and FMOs have been discussed thoroughly.

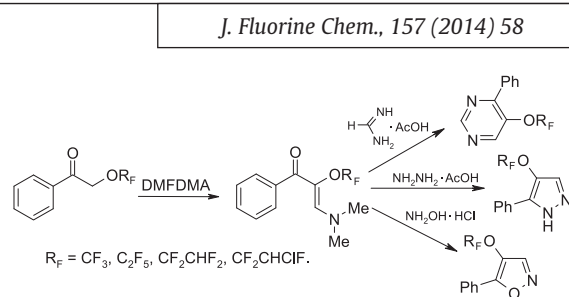


Polyfluoro- and perfluoroalkoxyenaminones in syntheses of nitrogen containing heterocycles

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● Novel fluoroalkoxyenaminones were synthesized from α -fluoroalkoxyacetophenones and dimethylformamide dimethyl acetal (DMFDMA). ● β -Enaminones with fluoroalkoxy groups were found out to be convenient precursors for heterocycles construction. ● Pyrazoles, isoxazoles and pyrimidines bearing poly- and perfluoroalkoxy groups were prepared.



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