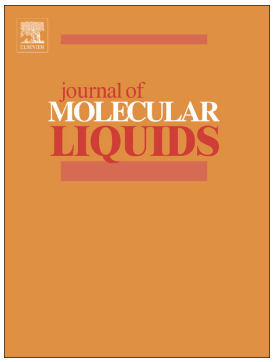

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Huifang Cheng, Hongfei Gao, Tingyan Wang, Meng Xia, Xiaohong Cheng

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Polycatenar bent-shaped liquid crystals with columnar and cubic phase: synthesis multi-responsive organogels and chemosensors

Huifang Cheng,‡[a] Hongfei Gao,‡[a] Tingyan Wang,[a,b] Meng Xia,[a] Xiaohong Cheng[a*]

[a] Key Laboratory of Medicinal Chemistry for Natural Resources, Chemistry School of Chemical Science and Technology, Yunnan University
Kunming,
Yunnan 650091,
P. R. China
Fax: (+86) 871 65032905
E-mail: xhcheng@ynu.edu.cn

[b] College of Science, Beijing University of Chemical Technology
Beijing 100029, P.R.China

‡Both authors contributed equally to this work

Abstract: Series of novel triazole polycatenar bent-shaped molecules comprising a carbonyl central core with two 1,2,3-triazole dendritic wings have been firstly synthesized *via* the copper(I)-catalyzed azide-alkyne cycloaddition (CuAAC) reaction. The effect of variation of the number and length of the terminal alkyl chains as well as the dendritic generaion, linkage group on their properties have been investigated by polarizing optical microscopy (POM), differential scanning calorimetry (DSC), X-ray diffraction (XRD), scanning electron microscope (SEM) and photoluminescence measurements. It is found that these compounds can self-assemble into hexagonal columnar and micellar cubic phases in their pure states, as well as organogels in organic solvents. In addition, fluorescence spectroscopic studies demonstrate that they can act as chemosensor of metal ions. The ester compounds exhibit dual selectivity for Fe^{3+} and Hg^{2+}, while the ether compounds show exclusive selectivity for Fe^{3+} ion.

Key words: liquid crystal, self-assembly, organogels, chemosensor