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Editorial

Nano-Grid[n]arenes: A Diverse Platform of Covalently Hierarchical Meta-molecules

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Editorial

In the background of the era of consciousness (EOC) from carbon to robot, we proposed an alternative way via the nano-architectures to challenge suspended issues from plastic electronics. Covalent meta-molecules with the features of structural diversity, hierarchy and cross-scale have absolute advantages to decode the universe law of matter and to explore the advanced materials. In the past decade, we focus on a versatile C (sp3)- C (sp2) reaction of fluorenol's Frediel-Crafts protocol (FOH's FCP) [1] as a tool of molecular installing technology, associated with the Pd-catalyzed (sp2)- C (sp2) coupling reaction such as Suzuki cross-coupling reaction. A series of the complex diarylfluorenes (CDAFs), have been synthesized, including small molecules, polymers, as well as covalent nanostructures via the A_n+B_n and/ or A_nB_n modes where A represents for fluorenol and B stands for benzeniod substrates [2-8]. Recently, we discovered nano-gridarenes that is a huge family of organic unit nanogrids [9], multigrids [10] as well as polygrids [11] after the exploration of fluorene-based nanosynthesis [12]. Grid polymers serve as the advanced soluble nanopolymers with potential application of light-emitting diodes, lasers, solar cells and memory [13]. In perspective, in the framework of systematically cross-scale and hierarchical chemistry, various meta-structures will be designed and fabricated from the range of zero-dimensional nanomolecules, one-dimensional nanopolymers via strong nano linkages, two-dimensional covalent organic frameworks, and 3D nano-architectures as well as fractal meta-structures via the fluorenol's nanosynthons, offering a series of state-of-the-art models and advanced materials.

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