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(n)]; 2.6.2 General Procedure for the Preparation of the Hetero-Dinuclear Complexes 81(1) and 81(5); 2.6.3 Synthesis at the Complex; Acknowledgements; Abbreviations; References

3 All-benzenoid Polycyclic Aromatic Hydrocarbons: Synthesis, Self-assembly and Applications in Organic Electronics

3.1 A Brief Introduction to Polycyclic Aromatic Hydrocarbons; 3.2 All-benzenoid PAHs - Synthesis, Structural Characterizations and Electronic Properties; 3.2.1 Hexa-peri-hexabenzocoronene - An Old Story with New Discoveries; 3.2.2 All-benzenoid Graphitic PAHs Larger than HBCs; 3.2.3 PAHs with Varying Peripheries; 3.2.4 "Superbenzene" Chemistry and Others; 3.3 Self-assembly and Application of Columnar Liquid Crystals based on PBAHs

3.3.1 Columnar Superstructures in the Bulk State

3.3.2 Alignment on Substrates and Device Applications of Columnar Liquid Crystals; 3.3.3 Controlled Self-assembly in Solution; 3.3.4 Two-dimensional Crystals at the Solid/Liquid Interface; 3.4 Conclusion; 3.5 Experimental: Selected Procedures; 3.5.1 Synthesis of hexa-peri-hexabenzocoronene 10 by Cu (II)-mediated oxidative cyclodehydrogenation - a general procedure to prepare unsubstituted graphitic molecules [35]

3.5.2 Synthesis of hexakis(4-dodecylphenyl)-peri-hexabenzocoronene (HBC-PhC12) - a general synthetic method towards six-fold alkyl- and alkylphenyl-substituted HBCs [38]

3.5.3 Functionalization of insoluble HBC building blocks 30-32 by Sonogashira coupling reactions [48]. Synthesis of hexakis(1-dodecynylphenyl)-peri-hexabenzocoronene (34a) as a representative example; 3.5.4 Synthesis of C<sub>96</sub>-C<sub>12</sub> precursor 1,3,5-tris[3,4-di(4-dodecylphenyl)-2,5-diphenylphenyl] benzene (44a) by Diels-Alder cycloaddition reaction - a representative procedure for the synthesis of branched oligophenylenes [50]

3.5.5 Hydrogenation of hexakis-dodecyl-peri-hexabenzocoronenes 74 [66]

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#### Sommario/riassunto

This is the only up-to-date book on the market to focus on the synthesis of these compounds in this particularly suitable way. A team of excellent international authors guarantees high-quality content, covering such topics as monodisperse carbon-rich oligomers, molecular electronic wires, polyaromatic hydrocarbons, nonconjugated small molecules, nanotubes, fullerenes, polyynes, macrocycles, dendrimers, phenylenes and diamondoid structures. The result is a must-have for everyone working in this expanding and interdisciplinary field, including organic and polymer chemists, materials scientist

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