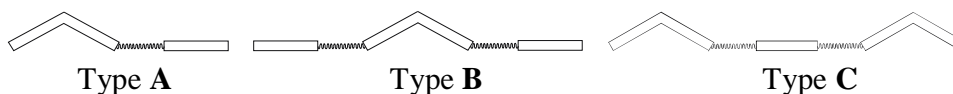


Mesomorphic and electro-optical properties of dimers and trimers composed of bent-core and calamitic mesogenic units

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Mesophases formed by bent-core mesogens are of special scientific interest due to their unique physical properties, *e.g.* ferro-/ antiferroelectric behaviour, formation of chiral superstructures although the molecules itself are achiral. The presentation is focused on the preparation and investigation of non-symmetric dimers (type **A**) and new type of symmetric trimers (type **B** and **C**) composed of bent-core and calamitic mesogenic units.



These combinations lead to compounds exhibiting polymorphism variants typical for bent molecules (SmCP, Col) as well as mesophases typical for calamitic compounds (N, SmA). These ‘calamitic phases’ present remarkable physical properties, *e.g.* biaxiality of uniaxial phases, special electroconvection patterns and high flexoelectricity of nematic phases [1-2]. The liquid crystalline properties of the new oligomers under study strongly depend on the length and the parity of the aliphatic spacer, the length of the terminal chains, the number of the aromatic rings, the type and the direction of the connecting groups between different units and the nature of the calamitic part. Exciting behaviour as unusual *odd-even* effects (phase sequences, transition temperatures) varying the spacer length, the existence of SmC_s–SmC_a phase transitions and ‘chirality flipping’ in SmCP phases of several oligomer series will be reported. The new materials are characterised by POM, DSC, X-ray diffraction, electro-optical and dielectric measurements.

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