

## Reentrancy of the SmC phase and continuous pitch evolution in the AFLC SmC<sub>α</sub> phase – two faces of one interaction

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Antiferroelectric liquid crystals were discovered twenty years ago (1), however the mechanisms that lead to the rich variety of phases found in these interesting materials are still not completely understood. Recent detailed measurements (2,3) revealed few interesting questions

- In some materials 4-layer SmC<sub>FI2</sub> phase does not enter but the pitch evolves continuously toward smaller periods below four layers (2).

- In some materials the 4-layer SmC<sub>FI2</sub> phase does appear directly below the SmC<sub>α</sub> but at lower temperature the SmC phase develops (3).

Both situations can be explained within the framework of discrete phenomenological model (4-7) as a consequence of quadrupolar interlayer interaction. In one case i.e. continuous pitch evolution, the electrostatic component of the quadrupolar interaction prevails while in another case, the reentrant SmC phase, the geometric van der Waals originated type of interlayer interaction is more important.

### References

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