

(ref. 15 and 16) as well as theoretical papers on the TGB<sub>C</sub> phase. It is quite surprising that in her comment Geetha Nair does not refer to her publication of 1994. I am afraid that the second sentences of both the first and second paragraphs of her comments are misleading.

Square grid patterns are known to occur in smectic-C as well as smectic-C\* phases even in the absence of an external field for a variety of reasons (see for e.g., D. Johnson and A. Saupe, *Phys. Rev.*, 1977, A15, 2079). We conducted several experiments which were designed to demonstrate that the square grid pattern that we found corresponded to a new liquid crystalline phase different from the TGB<sub>C</sub> phase. As we have mentioned toward the end of our paper, we have found other systems which exhibit this phase.

It is interesting that Geetha Nair has now found square grid patterns in a mixture which she had studied earlier. Interestingly, one of the components of the mixture is the same as the one which we used in our studies. From the last sentence of her comment, it is not clear if the square grid corresponds to the new phase that we have found. It may be worthwhile to make a more systematic study to confirm this point.

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### *Response:*

I read the comments by Geetha G. Nair with interest. I also read her Ph D thesis carefully. The phase diagram and the textures reported in the thesis correspond to the TGB<sub>A</sub> phase. There is no mention of the observation of any square grid pattern. The contents of the relevant chapter of the thesis have been published more recently (Prasad, S. K., Raja, V. N., Nair, G. G. and Goodby, J. W., *Molecular Crystals and Liquid Crystals*, 1994, 250, 239). In this paper the phase diagram presented in the thesis is reproduced and again there is no mention of the observation of a square grid pattern. The authors found only TGB<sub>A</sub> to smectic-A to smectic-C\* and TGB<sub>A</sub> to smectic-C\* sequences in their mixtures. However, the authors refer to 'tilted TGB' (which is now called TGB<sub>C</sub>) which had by then been discovered and give references to experimental