

**Liquid-crystal periodic zigzags from geometrical and surface-anchoring-induced confinement:
Origin and internal structure from mesoscopic scale to molecular level**

D . K ,^{1,2} J^M,³ , H K^M,¹ M. C. C ,⁴ J K^M,³ O^M t ,⁵ . r K^M,³ r ,⁵
M K^M,^{6,7}

~~M~~ s tr t tr s r s r , r r r ~~M~~ t
r s L DMLB ~~M~~ F r s . tr r s
EM s , LC ~~M~~ s r fr t r ~~M~~ t , -
tr , t t 5 r f Pt, , s . FEI
r FE- EM t N t N f C tr NNFC K -
r A I st t t f T . KAI T .

III. RESULTS

T	r - s	,	r st	1,
4'~5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-	- - - - -	t	, r -	
t s	r t t t t r	t	st r, ss -	
1 F. s. 1	2 t s	r	rg F.	
4,16,17. T t n	s tr st f	r	st 1	
m ts tr st	fr	st	t	
s t - s =185 C,	t fr t	s	m t	
s ft r st	s t =111 C.	T	s t LC	
str m r f	r st 1	s st	D	1 -
at r	14 - t	s t t	ss	s
r	r	t	r	
f s	r r t t	D	ss rr	t
r t r	s m t	s r	.	
T s	D tt rs	F. 3	s m s -	
r s r m s t s	t	=1.0	m 1	
=6.0	T - s str t r s	r s	at t	
s f r	s t s	r	t s	
str t	fr	r	r r r	
18,19. T m r s	r t t s f	r st	1	
s s	r st	F. 3	,	s
m	t	19. B s	t s	, f t ,
s m r m t	t r	, at	st	
r s t fr t r	, t	f	t	
r str t r	T s t s	r t	t t	
- t f r t	r str t r	, t	f	
=6.02	=7.20	A t	, t r	ff s
s s m t	, 1=12.6			
2=15.3	3=17.0	t	st	t s
f r t t	r t r	s	T	,
str t r m f t	s f m	r st	1	s
st s	fr t s	t	r s	t
s ft r	CE I 2 A r s,	D	, CA,	A.
As F. 3	r st 1 s st	t	ttr	π
st	t r t	t	m r s,	
t s	f	r st	1	
t	1	s ~3.52	Fr t	1
f ~0.50	2 s r t t t	t	ft	s
r s, ~0.41	3 t s /F3 3-400.8	t s /F3	64214F3	. 642

T t s rf s, tt r s AF , D t
t t r t r t AF , M FC-77, 3 M st
r r t s t F r AF M FC-77, 3 M st
t m r r f t s s t r t LC
rs n t t m s rf .Dr .t m ., t s |
s t m t t r tr t s t -s tr tr -
s t t r tr t f t t r f t LC
t t s t t t f t t r s m
r ss t t ss F .1 , f t r |
t r tr T r s t r str s m f LC r ,
ss t t , s t t t , r m t t
s m T s rf r f LC s r | rs
m t t s rf tt s s t rf s,
tr rs r t t s rf 5.3814 0 T D

st r ss t t f r , t s . t t t st PFC

Distr. Distrs t t Al A3
tts str tr, ffr. tr r r-
At A2, st rr. ft , t
00 s s r . , , , n tt
str rt . At A1 A3 t rr tt 9 , tr -
s s ar t tt fA2, n tt r
t m st t . s. For 3
tst t , t r tt r , t st-
tr. F. 3 , m t a-c m t t
ss. T s l m s m ft s
t r tt , rt t t tt r
tt s g r t .
T s t , m t fnt r s
s, rtrs , ts t , t rs.
H r, t . str tr s r m t s , ts
st t tr t m t rs , ts r
tt , n t , , s , r
F. s. 1 2 , F. s. 3 4 ft s -
tr tr 17 , s ts rt t , t ,
s , r t m t s m s , s st m f tr
str tr t s , r m t s , , t s.
Mr s st t r t s t r r t s
s ss m r ftr t ft , t f , m t
t r s s t s r t t s s st t
t s r t r r r r f t s
t r s t t f f f ts,
r r r r r s f r f s PFCs ,
r st m PFCs 8,10,14,15. T s f t r r s tr
r f , t t r r r s t t r t
r -str ss r s r r , t r r , t

T t r r P t s t s
 F. s. 2 , 4. , 4. m r s r s t
 f t f t f f s s t str t r-
 t t f s fr t t r rs

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