Table 3. *Chemically independent bond lengths in naphthalene*

Bond	Experimental	E.s.d.	Theoretical
AB	1·365 Å	0·006 Å	1·384 Å
BC	1·425	0·005	1·416
AE′	1·404	0·009	1·406
CC′	1·393	0·010	1·424

Table 4. *Chemically independent bond lengths in anthracene*

Bond	Experimental	E.s.d.	Theoretical
AB	1·371 Å	0·006 Å	1·382 Å
BC	1·424	0·005	1·420
CD	1·396	0·004	1·406
AG′	1·408	0·010	1·410
CE′	1·436	0·007	1·430

et al. For anthracene the agreement between the experimental and theoretical results is now as close as can be expected from the experimental errors and the admitted imperfections of the theory. For naphthalene the agreement is less good, the bond *AB* and the central bond *CC′* showing significant differences between theory and experiment.

We have also computed the carbon peak heights in the observed and calculated syntheses. These are given in Tables 5 and 6. Since models with identical atoms were used for each molecule, the variation in the calculated peak heights shows that a substantial part of the variation in the observed heights, previously commented on by Robertson *et al.*, is due to the effect of finite series.

Table 5. *Peak heights in naphthalene*

Atom	Observed synthesis	Calculated synthesis
A	6·86 e.Å^{-3}	6·90 e.Å^{-3}
B	7·33	7·02
C	8·28	7·41
D	7·43	7·06
E	7·05	6·98

Table 6. *Peak heights in anthracene*

Atom	Observed synthesis	Calculated synthesis
A	7·56 e.Å^{-3}	7·94 e.Å^{-3}
B	8·28	8·51
C	9·76	9·10
D	9·27	8·78
E	9·66	8·93
F	8·59	8·47
G	7·61	8·17

The differential syntheses needed in this work were computed in duplicate by Hollerith methods and on the electronic digital computer of the Computing Machine Laboratory of Manchester University. Very close agreement, within 0·02% on the densities, was obtained between the two sets of results. These are the first crystallographic calculations to be made on the Manchester computer. Apart from programming time and about 8 hr. for punching the data tapes, only about 2 hr. 20 min. were needed on the computer itself for the observed and calculated syntheses of the two molecules.

Further work is in progress and a full account will be published later.

Our thanks are due to Prof. E. G. Cox for his encouragement and interest and for the Hollerith computing facilities available in this laboratory; to Dr Mary B. Hesse who joined us in programming the differential syntheses on the Manchester electronic computer; and to Mr R. A. Brooker and other in the Manchester Computing Machine Laboratory for their assistance and for the use of the machine.

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Mechanical twinning of indium.

By J. H. Becker, B. Chalmers and E. C. Garrow, *Department of Metallurgical Engineering, University of Toronto, Toronto, Ontario, Canada*

(*Received* 1 *August* 1952)

It is generally believed (Craig & Clark, 1952) that metals having the face-centred cubic struct cannot deform by twinning, either as a result of impa or of a continuously applied stress.

Recent experiments have shown that indium, which has a face-centred tetragonal structure with $c/a = 1·078$, is subject to twinning as a mode of deformation. The twin plane is (011), (0$\bar{1}\bar{1}$), (101) or ($\bar{1}$0$\bar{1}$), but not (110) or ($\bar{1}\bar{1}$0); none of these planes can act as twinning planes in the cubic structure, because there would be no difference between the twinned and the original structure.

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