



AAST-Cairo

EC210

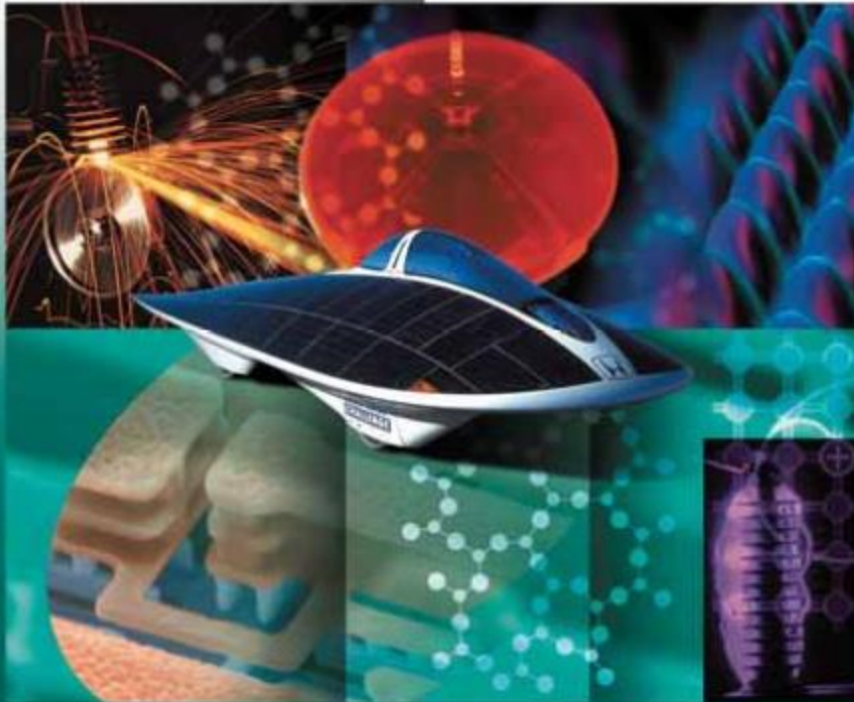
Solid State Electronics

Lec. 2: Miller Indices

Spring 2014

Principles of Electronic Materials and Devices

Third Edition



S. O. Kasap

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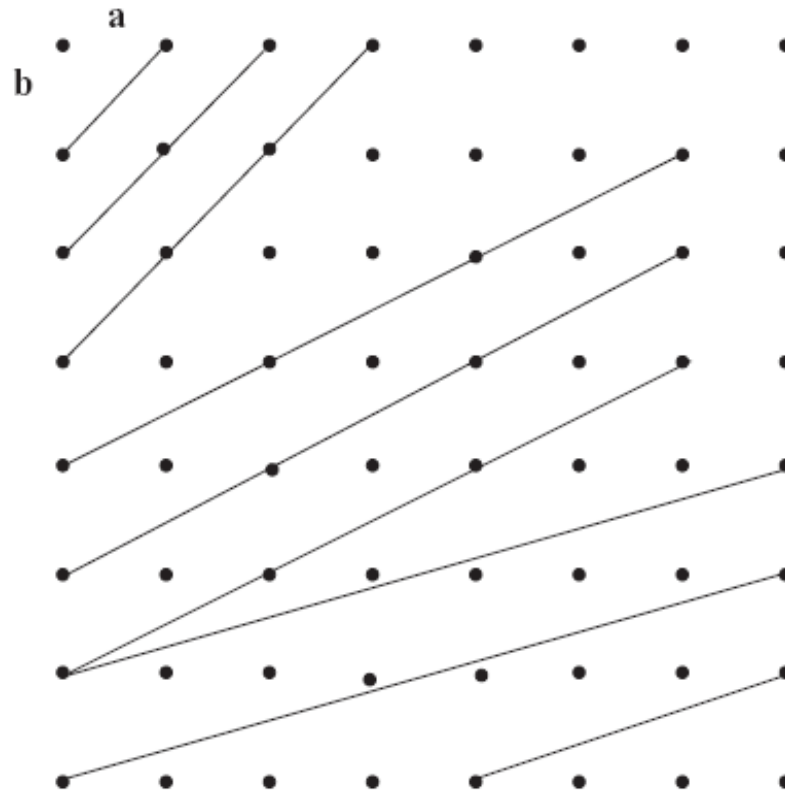
- P. 56 to 60
- Section 1.82 Crystal directions and planes
without planar concentration

P. 9 to P. 23

- Section 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5 (1.3.6 is not included)



Miller Indices



Miller indices are groups of numbers used to express different planes and directions in the crystal lattice.



Plane

$()$

Family of planes

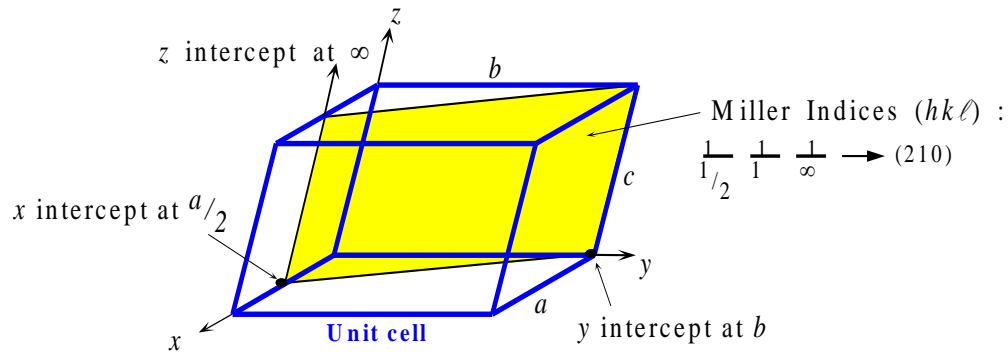
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Direction

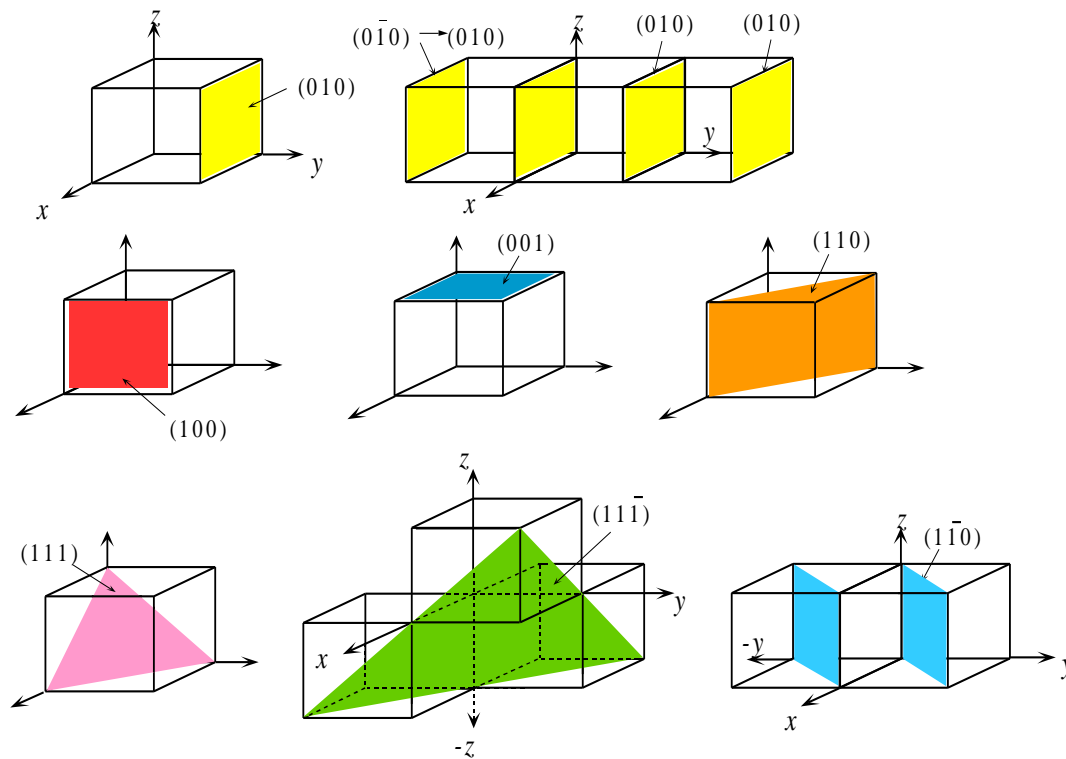
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Family of directions

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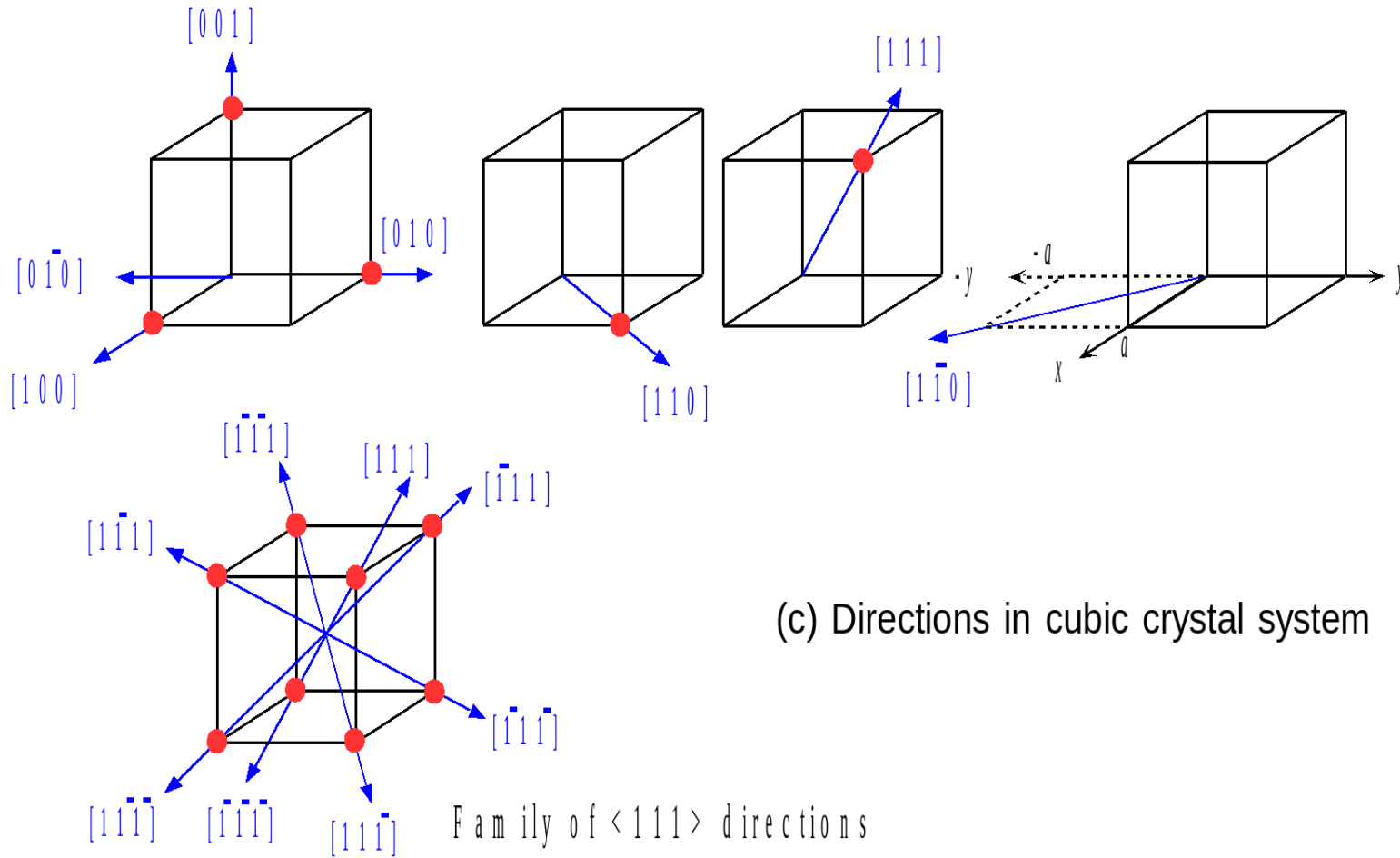
(a) Identification of a plane in a crystal



(b) Various planes in the cubic lattice

Fig. 1.40: Labelling of crystal planes and typical examples in the cubic lattice

origin



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