OPEN UNIVERSITY LIBRARY

PROGRAMME SEQUENCE LIST

CU S100/10

Title : Science course unit 10
(Covalency)
Contributors : M.J.Pentz
Roger Hill (R.R.Hill on credits)

Tape No. 6LT/10056
Project No. 00520/1110
Date Recorded 24.7.70.
Form VTR

1st TX: 13.3.71.

Seq.	Time	Footage	Sequence List	Sound Cue
1	35"		Prof. Pentz introduces the unit.	
2.	6'55"		R.R. Hill illustrates the shapes of covalent molecules with balloon analogues. He models the following: Boron Trifluoride Beryllium Dichloride Phosphorous Pentafluoride Sulphur Hexafluoride	541.224 for covalent molecules
	8'25"		Prof. Pentz introduces the principle of chirality. In an experiment he superimposes a teacup on its own image.	you'll have seen
	10'00"		Pentz tries to do the same with an oil can. It cannot be superimposed on its image and is therefore chiral.	
3	13'21"		Pentz introduces the plane of symmetry concept as a useful tool for determining chirality of objects and molecules. He then changes the chirality of a teacup by moving a black dot which was bisected by the plane of symmetry to another place on the cup.	a chiral one
	14'55"		P.R. Hill explains the importance of chirality at the molecular level. He shows a model of a glucose molecule together with one of its mirror image. It cannot be superimposed on its image.	well, chirality is-----
4	19'09"		(+) Glucose and its image (-) glucose are examined with a polarimeter. The polarised light is shifted in different directions by each type of glucose. Molecules that react in this way are called optical isomers.	547.12252 547.7813 541.7 541.7028
5			How do enzymes in a living organism distinguish between optical isomers? R.R. Hill demonstrates with an analogue. He places his hands (optical isomers) into a cloth bag (ordinary chemical reagent). Both hands fit He then tries to place each hand into a glove (enzyme). The left hand will not fit the right hand glove.	547.758

OPEN UNIVERSITY LIBRARY

PROGRAMME SEQUENCE LIST
Continuation

Seq.	Time	Footage	Sequence List	Sound Cue
5	21'37"		Enzymes are chiral templates and as such can distinguish between optical isoners.	mirror image pairs
6			Pentz speculates on what would happen if one were to be transported into another world where all things were mirror images of this world.	Well, that's all------
	24'08"	6	Credits.	It can't be done