

## Khēng



*Tân Lê-soat, Teng Liân-chong*

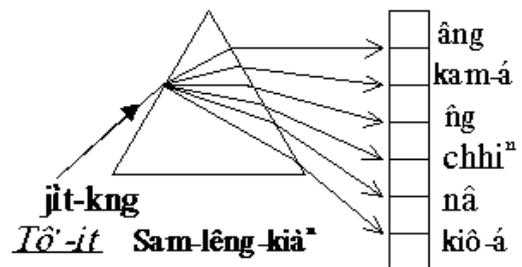
Lí bat khòa<sup>n</sup>-tiòh khēng--bô, tī chá-khí á-sī hông-hun ê sī, nā-sī lòh-hō liáu, á-sī tī chú-chhiang pi<sup>n</sup>..a, koh ũ khòa<sup>n</sup>-tiòh jít-kng ê sī, lán chiū ôe-tit-thang tī lēng-gōa hit pēng ê thi<sup>n</sup>-téng khòa<sup>n</sup> tiòh chit-chōa oan-oan pò<sup>a</sup>-î<sup>n</sup>-hēng, chin-súi ê khēng. I ũ âng-sek, kam-á-sek, ng-sek, chhi<sup>n</sup>-sek, nâ-sek, tiān-sek kap kiô-á-sek. Lâng lóng kóng chhái-hông ũ chhit sek, m̄-kú góa khòa<sup>n</sup>--tiòh..ê, chha-put-to sī âng-sek, ng-sek, chhi<sup>n</sup>-sek kap nâ-sek..ê, m̄ chai lí bat khòa<sup>n</sup>-tiòh pát chióng sek--bô.

Nā-sī khòa<sup>n</sup>-tiòh khēng ê sī, koh chhiá<sup>n</sup> lí chim-chiok khòa<sup>n</sup> i ê téng-kôn, ôe-tit-thang chhōe-tiòh lēng-gōa chit-chōa chhin-chhiū<sup>n</sup> khēng ê chhái-hông, sek-chhái pí khēng ũ kah chhián--chit--sut--á, m̄-nā án-ni, i ê sek-chhái hun-pò<sup>a</sup> tú hó kap khēng tò-péng. Lí kiam chai-ia<sup>n</sup> chit-ê kiò-chò sím-mih miâ? I chiū-sī hō-chò “Gê” lah! Lí kiam beh chai-ia<sup>n</sup> sī sím-mih gōan-in lâi chiá<sup>n</sup>-chò khēng kap gê leh?

Tī kong-gōan 1666 nî, Eng-kok ê Bút-lí hák-ka *Issac Newton* iông jít-kng lâi chiò kòe Sam-lêng-kiá<sup>n</sup>, chiū ē chhut-hiān chhin-chhiū<sup>n</sup> chhái-hông ê kok chióng sek-chhái, *Newton* ká in hō-chò “Kng-phó”(spectrum), chit-khóan jít-kng thong-kòe Sam-lêng-kiá<sup>n</sup> lâi chiá<sup>n</sup>-chò Kng-phó ê hiān-siōng hō-chò “Sek-sàn”(dispersion), chhin-chhiū<sup>n</sup> *Tô-it*.

*Newton* kóng jít-kng sī kok chióng

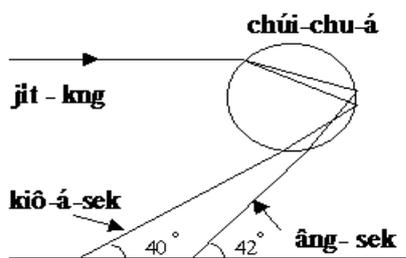
sek-kng ê hók-háp-kng. Kàu ta<sup>n</sup>, lán chai-ia<sup>n</sup> kok chióng sek-kng lóng ũ i ka-kī ê pîn-lút(frequency), bô sio-siāng pîn-lút ê kng ē hō lán bô káng-khóan ê sek-chhái-kám. Bô káng pîn-lút ê kng thong-kòe Sam-lêng-kiá<sup>n</sup>, chiū ē chhut-hiān bô káng hong-hiòng ê chiat-siā(refraction). In-ūi kng tī kài-chit(medium) lâi-té, i ê sok-tō ē piàn bân. Kiô-á-sek..ê sok-tō siōng bân, só-í chiat-siā hō i ê phian-hiòng siōng tōa, âng-sek..ê sok-tō siōng kín, só-í chiat-siā hō i ê phian-hiòng siōng sè, pát chióng sek-kng ê chiat-siā, tú hó hun-pò<sup>a</sup> tī chit n̄ng sek ê tióng-ng, chhin-chhiū<sup>n</sup> *Tô-it*.



Tī Tô-it, lán khòa<sup>n</sup> tiòh jít-kng thong-kòe Sam-lêng-kiá<sup>n</sup> ũ n̄ng-pái ê chiat-siā. Nā sī lòh-hō liáu, á-sī tī chú-chhiang pi<sup>n</sup>..a, thi<sup>n</sup>--nih chhiong-bóan sè-sè-liáp-á ê chú-chu, hit sī tú-hó ũ jít-kng chiò--kòe--lâi, lán chiū ôe-tit-thang tī jít-thâu ê lēng-gōa hit pēng khòa<sup>n</sup> tiòh khēng--lòh! Khēng chhiū-sī jít-kng thong-kòe chú-chu, ũ n̄ng-pái ê chiat-siā kap chit-pái ê hóan-siā só chiá<sup>n</sup>-chò ê Sek-sàn hiān-siōng, chhin-chhiū<sup>n</sup> *Tô-jī*.

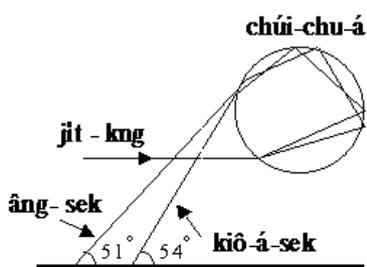
Lán só khòa<sup>n</sup>--tiòh chit-tiâu gióng-kak 42°..ê, chiū-sī âng-sek..ê, hit-tiâu gióng-kak 40°..ê, chiū-sī kiô-á-sek..ê. Só-í lán khòa<sup>n</sup>--tiòh ê khēng,

âng-sek..ê sī tī téng-kòan hit-khò,  
kiô-á-sek..ê sī tī lâi-khò.



**Tō-jī Chúi-chu sek-sàn chiá-chò khēng**

Gê chūi-sī jit-kng thong-kòe chúi-chu, ũ nng-pái ê chiat-siā kap nng-pái ê hóan-siā só chiá-chò..ê, âng-sek-kng ê gióng-kak sī 51°, kiô-á-sek..ê sī 54°, chhin-chhiū "Tō-sa". Só-í lán khò--tiòh ê gê ē chhut-hiān tī khēng ê téng-kòan, sek-chhái hun-pòr kap khēng tò-péng, sek-chúi iáh khah chhián--chit--sut--á! Che sī in-ūi ke chit-pái ê hóan-siā, lêng-liōng ũ kiám koh khah chió ê gòan-in.



**Tō-sa Chúi-chu sek-sàn chiá-chò gê**

Chham-khó chu-liāu:

- 1 物理二 郭鴻銘 三民書局
- 2 [www.phy.ntnu.edu.tw](http://www.phy.ntnu.edu.tw)  
物理教學示範實驗教室  
光與彩虹的形成

**Léng-gán Khò "E" Sī-tāi ê Gín-á**

Ong Gē-jū

Chòe-kīn phah-khui tiān-sī á-sī pò-chóa, jip-bák só khò, só thia-tiòh..ê, m̄-sī chheng siàu-liân chū-sat, chiū-sī in khi sat-jīn, chhin-chhiū sè-miā tī chit-tīn siàu-liân gín-á ê bák-chiu--nih, sī bô sím-mih kè-tát..ê, ē-tit-thang sūi-piān húi-tiāu, chit-tiám-á tiòh m̄-chai ài tin-sioh pē-bú só siū-sù hō in ê chit-hūn pó-kui lé-bút.

Hiān-chāi ê gín-á, lán lóng chheng-ho in sī "E" sī-tāi..ê, in ê siū-hoat chiān-ōe, chòe-hoat chiān-ōe, sī-siōng ē chòe chhut hō lāng liāu-sióng bōe kàu ê tāi-chì, "phe-chhia, chàm pub, chiáh tók-phín, chiáh iô-thâu-ôan". Che khò tī góa chit ê chòe lāu-su, í-kip lāu-bú ê sim-lāi, sī thòng-khò koh sim-thiá, m̄-chai chit-má chòe pē-bú..ê, kiám ũ chīn tiòh in chòe sī-tōa-lāng ê chek-jīm--bô?

Lán chòe pē-bú, m̄-sī kan-ta thàn-chiá hō gín-á chiáh-hó, chhēng-hó nā-tiā. Kì-jiān se..in, chiū ài ũ gī-bū lâi kàu-iók..in, sī-siōng koan-sim..in, chhin-chhiū hiah ê phe-chhia-chòk, sa-ki pò-mi koh tī gōa-bīn teh lōa-lōa-sô, kiám-kóng chòe pē-bú..ê, lóng m̄-chai gín-á í-keng chia óa iáu bōe tng--lâi, chin-chiá sī chiám-jiān hiah bô êng--leh? Kiám-kóng gín-á teh chòe sím-mih lóng bōe ká i koan-sim?