

What is a photocell?

Photocell is also called an electron tube, photoelectric cell, electric eye, and phototube. This is an electronic instrument that is very vulnerable to incident radiation mainly light that is utilized for the generation or regulating the output levels of electric current.

How does photoelectric current change in a photocell?

(a) Photoelectric current in a photocell increases with the increases in intensity of the incident radiation. (b) The stopping potential (V_0) varies linearly with the frequency (ν) of the incident radiation for a given photosensitive surface with the stop remaining the same for different surfaces.

Which cell is used in a photocell circuit?

The cell which is used in the photocell circuit is called a transistor switched circuit. The essential elements necessary for the construction of a photocell circuit are: The circuit of the photocell operates in two scenarios which are dark and light.

What are photoelectric cells & how do they work?

All these things are examples of photoelectric cells (sometimes called photocells)--electronic devices that generate electricity when light falls on them. What are they and how do they work? Let's take a closer look! Photo: The photovoltaics in these solar panels are just one of the three common types of photoelectric cells.

Who invented photocell?

The pre-invention of the modern-day photocell was developed by Hans and Elsterby giving few modifications to CRT (Cathode Ray Tube). So, this was the invention and a brief history of the photocell. This article explains photocell working, types, circuits, and applications. What is a Photocell?

What are the three types of photoelectric cells?

Artwork: A summary of the three types of photoelectric cells. 1) Photoconductive--light increases the flow of electrons and reduces the resistance. 2) Photovoltaic--light makes electrons move between layers, producing a voltage and a current in an external circuit.

A photo-cell is illuminated by a source of light, which is placed at a distance d from the cell. If the distance becomes $d/2$. Then number of electrons emitted per second will be ... The stopping potential for photo-electric current for this light is asked Feb 21, 2022 in Physics by BabulPandey (106k points) physics; dual-nature:-photon-and ...

Most photocell circuits involve having a resistor and photocell in series, with one side connected to a source voltage (usually 3-5V) and the other side connected to ground. The output of the circuit is the point between the resistor and photocell, and that output is used to control a transistor that turns on or off the LED.

A photoresistor (also known as a light-dependent resistor, LDR, or photo-conductive cell) is a passive component that decreases in resistance as a result of increasing luminosity (light) on its sensitive surface, in other words, it exhibits photoconductivity. A photoresistor can be used in light-sensitive detector circuits and light-activated and dark-activated switching circuits acting as a ...

When the light is bright, the resistance of the photocell is low, allowing more current to flow through the circuit. Conversely, when the light is dim, the resistance of the photocell is high, limiting the flow of current. ... They are also energy-efficient, as they do not require any external power source to operate. Photocells are used in ...

A point source causes photoelectric effect from a small metal plate. Which of the curves in fig. may represent the saturation photo-current as a function of the distance between the source and the metal?

A photocell (also known as an electric eye) is a technological application of photoelectric effect whose electrical properties are affected by the light falling on it.

It's all down to photocells employing the photoelectric effect. In this setup, a photocell plays the role of a light sensor, adjusting the electric current based on the light levels. When it is bright ...

(a) Photoelectric current in a photocell increases with the increases in intensity of the incident radiation. (b) The stopping potential (V_0) varies linearly with the frequency (ν) of the incident radiation for a given photosensitive surface with the stop remaining the same for different surfaces.

Power source: A power source, usually a battery or direct current (DC) adapter, is needed to provide energy for the circuit to function. Connecting wires: These are used to establish connections between different ...

The pre-invention of the modern-day photocell was developed by Hans and Elster by giving few modifications to CRT (Cathode Ray Tube). So, this was the invention and a ...

A photocell is an electronic device that converts light energy into an electric current. It consists of two types of silicon crystal. When light is absorbed by the silicon, ...

Q11. The diagram below shows a photocell which uses the photoelectric effect to provide a current in an external circuit. (a) Electromagnetic radiation is incident on the photoemissive surface. Explain why there is a current only if the frequency ...

In a photo cell 4 unit photo electric current is flowing, the distance between source and cathode is 4 unit. Now distance between source and cathode becomes 1 unit. What will be photo electric current now?

A photocell connected in an electrical circuit is placed at a distance d from a source of light. As a result,

current I flows in the circuit. What will be the current in the circuit, when the distance is reduced to " $d/3$ " ? (a) I (b) $6I$ (c) $9I$ (d) $18I$ (e) $27I$ (f) $36I$ (g) $45I$ (h) $54I$ (i) $63I$ (j) $72I$ (k) $81I$ (l) $90I$ (m) $99I$ (n) $108I$ (o) $117I$ (p) $126I$ (q) $135I$ (r) $144I$ (s) $153I$ (t) $162I$ (u) $171I$ (v) $180I$ (w) $189I$ (x) $198I$ (y) $207I$ (z) $216I$ (aa) $225I$ (ab) $234I$ (ac) $243I$ (ad) $252I$ (ae) $261I$ (af) $270I$ (ag) $279I$ (ah) $288I$ (ai) $297I$ (aj) $306I$ (ak) $315I$ (al) $324I$ (am) $333I$ (an) $342I$ (ao) $351I$ (ap) $360I$ (aq) $369I$ (ar) $378I$ (as) $387I$ (at) $396I$ (au) $405I$ (av) $414I$ (aw) $423I$ (ax) $432I$ (ay) $441I$ (az) $450I$ (ba) $459I$ (bb) $468I$ (bc) $477I$ (bd) $486I$ (be) $495I$ (bf) $504I$ (bg) $513I$ (bh) $522I$ (bi) $531I$ (bj) $540I$ (bk) $549I$ (bl) $558I$ (bm) $567I$ (bn) $576I$ (bo) $585I$ (bp) $594I$ (bq) $603I$ (br) $612I$ (bs) $621I$ (bt) $630I$ (bu) $639I$ (bv) $648I$ (bw) $657I$ (bx) $666I$ (by) $675I$ (bz) $684I$ (ca) $693I$ (cb) $702I$ (cc) $711I$ (cd) $720I$ (ce) $729I$ (cf) $738I$ (cg) $747I$ (ch) $756I$ (ci) $765I$ (cj) $774I$ (ck) $783I$ (cl) $792I$ (cm) $801I$ (cn) $810I$ (co) $819I$ (cp) $828I$ (cq) $837I$ (cr) $846I$ (cs) $855I$ (ct) $864I$ (cu) $873I$ (cv) $882I$ (cw) $891I$ (cx) $900I$ (cy) $909I$ (cz) $918I$ (da) $927I$ (db) $936I$ (dc) $945I$ (dd) $954I$ (de) $963I$ (df) $972I$ (dg) $981I$ (dh) $990I$ (di) $999I$ (dj) $1008I$ (dk) $1017I$ (dl) $1026I$ (dm) $1035I$ (dn) $1044I$ (do) $1053I$ (dp) $1062I$ (dq) $1071I$ (dr) $1080I$ (ds) $1089I$ (dt) $1098I$ (du) $1107I$ (dv) $1116I$ (dw) $1125I$ (dx) $1134I$ (dy) $1143I$ (dz) $1152I$ (ea) $1161I$ (eb) $1170I$ (ec) $1179I$ (ed) $1188I$ (ee) $1197I$ (ef) $1206I$ (eg) $1215I$ (eh) $1224I$ (ei) $1233I$ (ej) $1242I$ (ek) $1251I$ (el) $1260I$ (em) $1269I$ (en) $1278I$ (eo) $1287I$ (ep) $1296I$ (eq) $1305I$ (er) $1314I$ (es) $1323I$ (et) $1332I$ (eu) $1341I$ (ev) $1350I$ (ew) $1359I$ (ex) $1368I$ (ey) $1377I$ (ez) $1386I$ (fa) $1395I$ (fb) $1404I$ (fc) $1413I$ (fd) $1422I$ (fe) $1431I$ (ff) $1440I$ (fg) $1449I$ (fh) $1458I$ (fi) $1467I$ (fj) $1476I$ (fk) $1485I$ (fl) $1494I$ (fm) $1503I$ (fn) $1512I$ (fo) $1521I$ (fp) $1530I$ (fq) $1539I$ (fr) $1548I$ (fs) $1557I$ (ft) $1566I$ (fu) $1575I$ (fv) $1584I$ (fw) $1593I$ (fx) $1602I$ (fy) $1611I$ (fz) $1620I$ (ga) $1629I$ (gb) $1638I$ (gc) $1647I$ (gd) $1656I$ (ge) $1665I$ (gf) $1674I$ (gh) $1683I$ (gi) $1692I$ (gj) $1701I$ (gk) $1710I$ (gl) $1719I$ (gm) $1728I$ (gn) $1737I$ (go) $1746I$ (gp) $1755I$ (gq) $1764I$ (gr) $1773I$ (gs) $1782I$ (gt) $1791I$ (gu) $1800I$ (gv) $1809I$ (gw) $1818I$ (gx) $1827I$ (gy) $1836I$ (gz) $1845I$ (ha) $1854I$ (hb) $1863I$ (hc) $1872I$ (hd) $1881I$ (he) $1890I$ (hf) $1899I$ (hg) $1908I$ (hh) $1917I$ (hi) $1926I$ (hj) $1935I$ (hk) $1944I$ (hl) $1953I$ (hm) $1962I$ (hn) $1971I$ (ho) $1980I$ (hp) $1989I$ (hq) $1998I$ (hr) $2007I$ (hs) $2016I$ (ht) $2025I$ (hu) $2034I$ (hv) $2043I$ (hw) $2052I$ (hx) $2061I$ (hy) $2070I$ (hz) $2079I$ (ia) $2088I$ (ib) $2097I$ (ic) $2106I$ (id) $2115I$ (ie) $2124I$ (if) $2133I$ (ig) $2142I$ (ih) $2151I$ (ii) $2160I$ (ij) $2169I$ (ik) $2178I$ (il) $2187I$ (im) $2196I$ (in) $2205I$ (io) $2214I$ (ip) $2223I$ (iq) $2232I$ (ir) $2241I$ (is) $2250I$ (it) $2259I$ (iu) $2268I$ (iv) $2277I$ (iw) $2286I$ (ix) $2295I$ (iy) $2304I$ (iz) $2313I$ (ja) $2322I$ (jb) $2331I$ (jc) $2340I$ (jd) $2349I$ (je) $2358I$ (jf) $2367I$ (jg) $2376I$ (jh) $2385I$ (ji) $2394I$ (jj) $2403I$ (jk) $2412I$ (jl) $2421I$ (jm) $2430I$ (jn) $2439I$ (jo) $2448I$ (jp) $2457I$ (jq) $2466I$ (jr) $2475I$ (js) $2484I$ (jt) $2493I$ (ju) $2502I$ (jv) $2511I$ (jw) $2520I$ (jx) $2529I$ (jy) $2538I$ (jz) $2547I$ (ka) $2556I$ (kb) $2565I$ (kc) $2574I$ (kd) $2583I$ (ke) $2592I$ (kf) $2601I$ (kg) $2610I$ (kh) $2619I$ (ki) $2628I$ (kj) $2637I$ (kk) $2646I$ (kl) $2655I$ (km) $2664I$ (kn) $2673I$ (ko) $2682I$ (kp) $2691I$ (kq) $2700I$ (kr) $2709I$ (ks) $2718I$ (kt) $2727I$ (ku) $2736I$ (kv) $2745I$ (kw) $2754I$ (kx) $2763I$ (ky) $2772I$ (kz) $2781I$ (la) $2790I$ (lb) $2799I$ (lc) $2808I$ (ld) $2817I$ (le) $2826I$ (lf) $2835I$ (lg) $2844I$ (lh) $2853I$ (li) $2862I$ (lj) $2871I$ (lk) $2880I$ (ll) $2889I$ (lm) $2898I$ (ln) $2907I$ (lo) $2916I$ (lp) $2925I$ (lq) $2934I$ (lr) $2943I$ (ls) $2952I$ (lt) $2961I$ (lu) $2970I$ (lv) $2979I$ (lw) $2988I$ (lx) $2997I$ (ly) $3006I$ (lz) $3015I$ (ma) $3024I$ (mb) $3033I$ (mc) $3042I$ (md) $3051I$ (me) $3060I$ (mf) $3069I$ (mg) $3078I$ (mh) $3087I$ (mi) $3096I$ (mj) $3105I$ (mk) $3114I$ (ml) $3123I$ (mn) $3132I$ (mo) $3141I$ (mp) $3150I$ (mq) $3159I$ (mr) $3168I$ (ms) $3177I$ (mt) $3186I$ (mu) $3195I$ (mv) $3204I$ (mw) $3213I$ (mx) $3222I$ (my) $3231I$ (mz) $3240I$ (na) $3249I$ (nb) $3258I$ (nc) $3267I$ (nd) $3276I$ (ne) $3285I$ (nf) $3294I$ (ng) $3303I$ (nh) $3312I$ (ni) $3321I$ (nj) $3330I$ (nk) $3339I$ (nl) $3348I$ (nm) $3357I$ (no) $3366I$ (np) $3375I$ (nq) $3384I$ (nr) $3393I$ (ns) $3402I$ (nt) $3411I$ (nu) $3420I$ (nv) $3429I$ (nw) $3438I$ (nx) $3447I$ (ny) $3456I$ (nz) $3465I$ (oa) $3474I$ (ob) $3483I$ (oc) $3492I$ (od) $3501I$ (oe) $3510I$ (of) $3519I$ (og) $3528I$ (oh) $3537I$ (oi) $3546I$ (oj) $3555I$ (ok) $3564I$ (ol) $3573I$ (om) $3582I$ (on) $3591I$ (oo) $3600I$ (op) $3609I$ (oq) $3618I$ (or) $3627I$ (os) $3636I$ (ot) $3645I$ (ou) $3654I$ (ov) $3663I$ (ow) $3672I$ (ox) $3681I$ (oy) $3690I$ (oz) $3700I$ (pa) $3709I$ (pb) $3718I$ (pc) $3727I$ (pd) $3736I$ (pe) $3745I$ (pf) $3754I$ (pg) $3763I$ (ph) $3772I$ (pi) $3781I$ (pj) $3790I$ (pk) $3800I$ (pl) $3809I$ (pm) $3818I$ (pn) $3827I$ (po) $3836I$ (pp) $3845I$ (pq) $3854I$ (pr) $3863I$ (ps) $3872I$ (pt) $3881I$ (pu) $3890I$ (pv) $3900I$ (pw) $3909I$ (px) $3918I$ (py) $3927I$ (pz) $3936I$ (qa) $3945I$ (qb) $3954I$ (qc) $3963I$ (qd) $3972I$ (qe) $3981I$ (qf) $3990I$ (qg) $4000I$ (qh) $4009I$ (qi) $4018I$ (qj) $4027I$ (qk) $4036I$ (ql) $4045I$ (qm) $4054I$ (qn) $4063I$ (qo) $4072I$ (qp) $4081I$ (qr) $4090I$ (qs) $4100I$ (qt) $4109I$ (qu) $4118I$ (qv) $4127I$ (qw) $4136I$ (qx) $4145I$ (qy) $4154I$ (qz) $4163I$ (ra) $4172I$ (rb) $4181I$ (rc) $4190I$ (rd) $4200I$ (re) $4209I$ (rf) $4218I$ (rg) $4227I$ (rh) $4236I$ (ri) $4245I$ (rj) $4254I$ (rk) $4263I$ (rl) $4272I$ (rm) $4281I$ (rn) $4290I$ (ro) $4300I$ (rp) $4309I$ (rq) $4318I$ (rs) $4327I$ (rt) $4336I$ (ru) $4345I$ (rv) $4354I$ (rw) $4363I$ (rx) $4372I$ (ry) $4381I$ (rz) $4390I$ (sa) $4400I$ (sb) $4409I$ (sc) $4418I$ (sd) $4427I$ (se) $4436I$ (sf) $4445I$ (sg) $4454I$ (sh) $4463I$ (si) $4472I$ (sj) $4481I$ (sk) $4490I$ (sl) $4500I$ (sm) $4509I$ (sn) $4518I$ (so) $4527I$ (sp) $4536I$ (sq) $4545I$ (sr) $4554I$ (ss) $4563I$ (st) $4572I$ (su) $4581I$ (sv) $4590I$ (sw) $4600I$ (sx) $4609I$ (sy) $4618I$ (sz) $4627I$ (ta) $4636I$ (tb) $4645I$ (tc) $4654I$ (td) $4663I$ (te) $4672I$ (tf) $4681I$ (tg) $4690I$ (th) $4700I$ (ti) $4709I$ (tj) $4718I$ (tk) $4727I$ (tl) $4736I$ (tm) $4745I$ (tn) $4754I$ (to) $4763I$ (tp) $4772I$ (tq) $4781I$ (tr) $4790I$ (ts) $4800I$ (tu) $4809I$ (tv) $4818I$ (tw) $4827I$ (tx) $4836I$ (ty) $4845I$ (tz) $4854I$ (ua) $4863I$ (ub) $4872I$ (uc) $4881I$ (ud) $4890I$ (ue) $4900I$ (uf) $4909I$ (ug) $4918I$ (uh) $4927I$ (ui) $4936I$ (uj) $4945I$ (uk) $4954I$ (ul) $4963I$ (um) $4972I$ (un) $4981I$ (uo) $4990I$ (up) $5000I$ (uq) $5009I$ (ur) $5018I$ (us) $5027I$ (ut) $5036I$ (uv) $5045I$ (uw) $5054I$ (ux) $5063I$ (uy) $5072I$ (uz) $5081I$ (va) $5090I$ (vb) $5100I$ (vc) $5109I$ (vd) $5118I$ (ve) $5127I$ (vf) $5136I$ (vg) $5145I$ (vh) $5154I$ (vi) $5163I$ (vj) $5172I$ (vk) $5181I$ (vl) $5190I$ (vm) $5200I$ (vn) $5209I$ (vo) $5218I$ (vp) $5227I$ (vq) $5236I$ (vr) $5245I$ (vs) $5254I$ (vt) $5263I$ (vu) $5272I$ (vv) $5281I$ (vw) $5290I$ (vx) $5300I$ (vy) $5309I$ (vz) $5318I$ (wa) $5327I$ (wb) $5336I$ (wc) $5345I$ (wd) $5354I$ (we) $5363I$ (wf) $5372I$ (wg) $5381I$ (wh) $5390I$ (wi) $5400I$ (wj) $5409I$ (wk) $5418I$ (wl) $5427I$ (wm) $5436I$ (wn) $5445I$ (wo) $5454I$ (wp) $5463I$ (wq) $5472I$ (wr) $5481I$ (ws) $5490I$ (wt) $5500I$ (wu) $5509I$ (wv) $5518I$ (wz) $5527I$ (xa) $5536I$ (xb) $5545I$ (xc) $5554I$ (xd) $5563I$ (xe) $5572I$ (xf) $5581I$ (xg) $5590I$ (xh) $5600I$ (xi) $5609I$ (xj) $5618I$ (xk) $5627I$ (xl) $5636I$ (xm) $5645I$ (xn) $5654I$ (xo) $5663I$ (xp) $5672I$ (xq) $5681I$ (xr) $5690I$ (xs) $5700I$ (xt) $5709I$ (xu) $5718I$ (xv) $5727I$ (xw) $5736I$ (xy) $5745I$ (xz) $5754I$ (ya) $5763I$ (yb) $5772I$ (yc) $5781I$ (yd) $5790I$ (ye) $5800I$ (yf) $5809I$ (yg) $5818I$ (yh) $5827I$ (yi) $5836I$ (yj) $5845I$ (yk) $5854I$ (yl) $5863I$ (ym) $5872I$ (yn) $5881I$ (yo) $5890I$ (yp) $5900I$ (yq) $5909I$ (yr) $5918I$ (ys) $5927I$ (yt) $5936I$ (yu) $5945I$ (yv) $5954I$ (yw) $5963I$ (yx) $5972I$ (yz) $5981I$ (za) $5990I$ (zb) $6000I$ (zc) $6009I$ (zd) $6018I$ (ze) $6027I$ (zf) $6036I$ (zg) $6045I$ (zh) $6054I$ (zi) $6063I$ (zj) $6072I$ (zk) $6081I$ (zl) $6090I$ (zm) $6100I$ (zn) $6109I$ (zo) $6118I$ (zp) $6127I$ (zq) $6136I$ (zr) $6145I$ (zs) $6154I$ (zt) $6163I$ (zu) $6172I$ (zv) $6181I$ (zw) $6190I$ (zx) $6200I$ (zy) $6209I$ (zz) $6218I$ (aa) $6227I$ (ab) $6236I$ (ac) $6245I$ (ad) $6254I$ (ae) $6263I$ (af) $6272I$ (ag) $6281I$ (ah) $6290I$ (ai) $6300I$ (aj) $6309I$ (ak) $6318I$ (al) $6327I$ (am) $6336I$ (an) $6345I$ (ao) $6354I$ (ap) $6363I$ (aq) $6372I$ (ar) $6381I$ (as) $6390I$ (at) $6400I$ (au) $6409I$ (av) $6418I$ (aw) $6427I$ (ax) $6436I$ (ay) $6445I$ (az) $6454I$ (ba) $6463I$ (bb) $6472I$ (bc) $6481I$ (bd) $6490I$ (be) $6500I$ (bf) $6509I$ (bg) $6518I$ (bh) $6527I$ (bi) $6536I$ (bj) $6545I$ (bk) $6554I$ (bl) $6563I$ (bm) $6572I$ (bn) $6581I$ (bo) $6590I$ (bp) $6600I$ (bq) $6609I$ (br) $6618I$ (bs) $6627I$ (bt) $6636I$ (bu) $6645I$ (bv) $6654I$ (bw) $6663I$ (bx) $6672I$ (by) $6681I$ (bz) $6690I$ (ca) $6700I$ (cb) $6709I$ (cc) $6718I$ (cd) $6727I$ (ce) $6736I$ (cf) $6745I$ (cg) $6754I$ (ch) $6763I$ (ci) $6772I$ (cj) $6781I$ (ck) $6790I$ (cl) $6800I$ (cm) $6809I$ (cn) $6818I$ (co) $6827I$ (cp) $6836I$ (cq) $6845I$ (cr) $6854I$ (cs) $6863I$ (ct) $6872I$ (cu) $6881I$ (cv) $6890I$ (cw) $6900I$ (cx) $6909I$ (cy) $6918I$ (cz) $6927I$ (da) $6936I$ (db) $6945I$ (dc) $6954I$ (dd) $6963I$ (de) $6972I$ (df) $6981I$ (dg) $6990I$ (dh) $7000I$ (di) $7009I$ (dj) $7018I$ (dk) $7027I$ (dl) $7036I$ (dm) $7045I$ (dn) $7054I$ (do) $7063I$ (dp) $7072I$ (dq) $7081I$ (dr) $7090I$ (ds) $7100I$ (dt) $7109I$ (du) $7118I$ (dv) $7127I$ (dw) $7136I$ (dx) $7145I$ (dy) $7154I$ (dz) $7163I$ (ea) $7172I$ (eb) $7181I$ (ec) $7190I$ (ed) $7200I$ (ee) $7209I$ (ef) $7218I$ (eg) $7227I$ (eh) $7236I$ (ei) $7245I$ (ej) $7254I$ (ek) $7263I$ (el) $7272I$ (em) $7281I$ (en) $7290I$ (eo) $7300I$ (ep) $7309I$ (eq) $7318I$ (er) $7327I$ (es) $7336I$ (et) $7345I$ (eu) $7354I$ (ev) $7363I$ (ew) $7372I$ (ex) $7381I$ (ey) $7390I$ (ez) $7400I$ (fa) $7409I$ (fb) $7418I$ (fc) $7427I$ (fd) $7436I$ (fe) $7445I$ (ff) $7454I$ (fg) $7463I$ (fh) $7472I$ (fi) $7481I$ (fj) $7490I$ (fk) $7500I$ (fl) $7509I$ (fm) $7518I$ (fn) $7527I$ (fo) $7536I$ (fp) $7545I$ (fq) $7554I$ (fr) $7563I$ (fs) $7572I$ (ft) $7581I$ (fu) $7590I$ (fv) $7600I$ (fw) $7609I$ (fx) $7618I$ (fy) $7627I$ (fz) $7636I$ (ga) $7645I$ (gb) $7654I$ (gc) $7663I$ (gd) $7672I$ (ge) $7681I$ (gf) $7690I$ (gh) $7700I$ (gi) $7709I$ (gj) $7718I$ (gk) $7727I$ (gl) $7736I$ (gm) $7745I$ (gn) $7754I$ (go) $7763I$ (gp) $7772I$ (gq) $7781I$ (gr) $7790I$ (gs) $7800I$ (gt) $7809I$ (gu) $7818I$ (gv) $7827I$ (gw) $7836I$ (gx) $7845I$ (gy) $7854I$ (gz) $7863I$ (ha) $7872I$ (hb) $7881I$ (hc) $7890I$ (hd) $7900I$ (he) $7909I$ (hf) $7918I$ (hg) $7927I$ (hi) $7936I$ (hj) $7945I$ (hk) $$