NKUV'OH'HKI WTGU''

- $\label{eq:fig.1.1} \textbf{Fig.1.1}" \ VkQ_8" \ r \ qn \ j \ gf \ tc" \ uj \ qy \ kpi " \ vj \ g" \ vj \ tgg" \ r \ qn \ q \ dtr \ j \ u" \ qh" \ VkQ_4 < 'twkrg" \ *c+." \ cpcvcug'*d+"cpf ''dtqqnkg'*e+0'Vk'ku'tgr \ tgugpvgf ''cu'y \ j \ kg''cpf ''Q''cu'tgf ''ur \ j \ gtgu0']4_"$
- Fig.1.2 Xctkqwu''uvgr u''kpxqnxgf ''kp''uqn'i gn'r tqeguu''vq''u{pvj gukţ g''pcpquvtwewxtgf '' o cvgtkcn0']8_''
- $\label{eq:fight} \textbf{Fig.1.3}" C" f qpqt" grgevtqp" kp" ku" j {f tqi gpke" qtdkv" eqwr rgu" y ky " ku" ur kp" cpvkr ctcmgn"vq"ko r wtkxkgu"y ky "c"5f "uj gm'vj cv'ku"j cm/hwn'qt"o qtg"vj cp"j cm/hwn'b' Ecvkqp" uksgu" ctg" tgr tgugpvgf "d{" uo cm' ektergu0' Qz {i gp" ku" pqv' uj qy p=" yj g" wpqeewr kgf "qz {i gp"uksgu"ctg"tgr tgugpvgf "d{"us wctgu0']42_"}$
- **Fig.1.4**" Uej go cvle "kmwntcvlqp" qh" *c+" yi g"f kmtkdwklqp" qh" o ci pgvle "ecvlqpu" kp" c" f kmwg" o ci pgvle "qzkf g" cpf "*d+" yi g" tguwnkpi "o ci pgvle "uwuegr vkdktk {0]42_"
- Fig.1.5" Vj g" ej cti g" vtcpuhgt" kpxqnxgf" kp" c" u{uvgo " y kj " c" hgttqo ci pgvke" kpuvcdkrkv{0"|43_"
- **Fig.1.6**"Ewtxgu"uj qy kpi "yj g"xctkcvkqp"qh"grgevtqpke"cpf "pwergct"gpgti {"rquu"eqttgur qpf kpi "vq"yj g"kpgrcuvke"cpf "grcuvke"eqnkukqpu'tgur gevkxgn{"qh"ukrxgt"dgco "rcuukpi "yj qwi j "[DEQ"cv'xctkqwu"gpgti kgu0"]45_"
- $\label{eq:Fig.2.1} \textbf{Fig.2.1}"\ O\ ci\ pgvkucvkqp"\ cu''\ c''\ hwpevkqp''\ qh''\ cr\ r\ nkgf\ ''\ o\ ci\ pgvke''\ hkgrf\ ''\ hkgrf\ ''\ hkgrf\ ''\ kgrf\ '$
- Fig.2.2" O/J " qh" $Vk_{20.7}Eq_{2027}Q_{4/}$ " "c+" O gvcmke." kpvgto gf kcvg." cpf " kpuwrcvkpi " cpcvcug'uco r rgu0"d+"O gvcmke "twkrg'uco r rg0"56_"
- Fig.2.3"J cm'xqnxci g"xgtuwu"crrnkgf "o ci pgyke"hkgrf "cv'522"M"hqt"z"? "20280'Vj g" gzytcqtf kpct {" J cm' ghhgev' f qo kpcygu" cv' rqy " hkgrf u" cpf " uj qy u" j {uvgtgyke" dgj cxkqyt'cu'uj qy p"kp'yj g"kpugy0']5; _"
- $\label{eq:power_power_power} \textbf{Fig.2.5}"C"tgr tgugpvcvkqp"qh"c"yi kp"hkm "qh"Eq<\!\!VkQ_4"kp"yj kej "hgttqo ci pgvkuo "ctkugu"dgecwug"vkvcpkwo "5f "grgevtqpu"*i tggp+"vtcxgn"ctqwpf "yi g"o cvgtkcn"cnki pkpi "yi g"ur kp"qh"eqdcnv"cvqo u"*r kpn+"uq"yi cv'yi g{"cm'r qkpv'kp"yi g"uco g"f ktgevkqp0"Vj g" dnwg"cpf "dtqy p"ur j gtgu"eqttgur qpf "vq"vkvcpkwo "cpf "qz {i gp"cvqo u."tgur gevkxgn{0' l66_"}$
- **Fig.2.6**"*c+"Ur nkwkpi "qh"f "ngxgnı"kp"cp"qevcj gf tcn"et {uvcn"Łgrf "cpf "*d+"r quukdrg" qeewr cvkqp"uej go gu"hqt"c"Eq⁴⁻ *5f ⁹6u²+"cvqo 0'Wpr cktgf "ur kpu"ctg"j ki j nki j vgf 0']67_"
- **Fig.2.7**"VGO 'ko ci g''qh''V k_0 : Eq₂₀₂₄Q_{4/} 'hkro ''cv'f khhgtgpv'o ci pkhecvkqpu0']68_"
- Fig.2.8"Vk'4r "eqtg/rgxgri'RGU"qh"Eq</kQ4"yi kp"Łm "d{"J ctf "z/tc{"RGU"*dnwg+" cpf "uqhv" z/tc{" RGU" *tgf +" tgur gevkxgn{0' Vj g" kpugv" ku" yi g" o ci pgvkucvkqp" xu0' o ci pgvke'Łgrf "ewtxg"qh'yi g'uco g'Łm "o gcuwtgf "cv'tqqo "yo r gtcwtg0]69_"

- Fig.3.1 'Gzr gtko gpvcn'uej go g'hqt'u{pyj guku'qh'VkQ4'pcpqr ctvkergu0']72_"
- ${\bf Fig.3.2}$ "Gzr gtko gpvcn'uej go g"hqt"u{pvj guku"qh"Eq/f qr gf "VkQ₄"pcpqr ctvkergu0']72_"
- Fig.3.3 Rctt"cwqercxg"*672"o nt"O qf gn"6782."WUC+"wugf "hqt"vj g"j {f tqvj gto cn" tgcevlqp0"]73_"
- **Fig.3.4**" Gzr gtko gpvcn' uej go g" hqt" u $\{pvj guku" qh" VkQ_4" pcpqy ktgu" wukpi " j <math>\{f tqvj gto cn'vgej pks wg0']74_"$
- Fig.3.5" Uej go cyke 't gr t gugpycykap "qh'RNF 'u { uvgo "f gr keykpi "xctkaywu"r ct vu0" | 75_"
- Fig.3.6'Rj qvqi tcr j ''qh''y g''RNF ''ej co dgt''f wtkpi ''f gr qukkqp''qh''y kp''hkro u0']77_''
- Fig.3.7 Grgevtqp''dgco ''gxcr qtcvkqp''wpkv'wugf 'hqt''y g'f gr qukxkqp''qh''VkQ4''hkro 0' 178_"
- Fig.3.8" Uej go cvke" tgrtgugpvcvkqp" qh" g/dgco "gxcrqtcvkqp" u{uvgo "fgrkevkpi" xctkqwu'rctvu0]78_"
- Fig.3.9C" uej go cyle" f kci tco " uj qy kpi " xctkqwu" rctvu" qh" yj g" Rgmgvtqp" Ceegngtcvqt0]7: _"
- Fig.3.10'TDU'ur gevtc"qh'EVQ''vcti gv'*dreem'rkpg'ku'vj g''gzr gtko gpvcn'f cvc''cpf 'vj g'' uko wrcvgf ''ur gevtwo ''ku''uj qy p''kp''tgf +'']86_''
- Fig.3.11'V{r lecnhqwt'r tqdg'cttcpi go gpv0]93_"
- **Fig.4.1**'ZTF 'r cwgtpu'qh'VkQ₄'pcpqr ct\kergu'u{ pyj gukugf ''cv*'c+''rJ ''? ''607'*'uco r rg'' C+.''cpf '*'d+''rJ ''? ''807'*'uco r rg''D+''ecrekpgf ''cv\f khhgtgpv\'go r gtcwtgu0']97_''
- Fig.4.2"Too cp"ur gevtc"qh"*c+"uco r rg"C"cpf "*d+"uco r rg"D"ecrekpgf "cv"f khqtgpv" vgo r gtcwtgu0[98_"
- **Fig.4.3**"HV/KT"qh"uco r rg"C/722"cpf "D/7220' Kpugv"uj qy u" yj g"eqo r ctkuqp"qh" uco r rgu'D/722'y kj 'D/8720']9: _"
- **Fig.4.4** Vtcpuo kuukqp" grgevtqp" o ketqi tcr j u" qh" *c+" C/722" cpf " *d+" D/722" uco r rgu0UCGF 'r cwgtpu'qh'uco r rg'C/722'*e+'cpf '*f +'cpf 'D/7220]: 2_"
- $\label{eq:fig.4.5} \textbf{Fig.4.5} "P q to crk gf "Z RU" ur gewc" qh'uco r rgu "C/722" cpf "D/722<" c+"Vk'4r "eqtg" rgxgru" cpf "\d'+Q'3u" eqtg "rgxgru"]: 3_"$
- **Fig.4.6** F geqpxqnwkqp"qh"Q"3u"eqtg"rgxgrk"Qc"cpf "Qd"r gcmu"qh"C/722"cpf "D/722"uco r rgu"ctg"uj qy p"kp"%c+"cpf "%d+"tgur gevkxgn[0]: 3_"
- $\label{eq:cv'rJ} \textbf{Fig.4.7''*c+'ZTF''r cwgtpu''qh''Vk}_{3/z}Eq_zQ_{4"}*z''?''2.''2@3.''2@5''cpf''2@7+'u\{pyi gukugf'' cv'rJ'''?''807''cpf''ecrekpgf''cv'722''^qE0', 'f gpqvgu''yi g'EqVkQ5''''rj cug0''*d+'C''v\{r kecn'' Ng/Dckri'r tqhkrg''hkwlpi ''qh''VkQ_{4"}*lvg0''z''?''2+']: 6_'''}$

- **Fig.4.8**"Too cp"ur gevtc"qh"V $k_{s/z}$ Eq $_z$ Q $_4$ "*z"?"2."2@3."2@5"cpf "2@7+"ecrekpgf "cv" 722' 4 E0', 'f gpqvgu'yj g'EqVkQs"r j cug0]: 8_"
- **Fig.4.9**"HV/KT"ur gevtc"qh"Vk_{3/z}Eq_zQ_{4"}*z"? '2."2023."2025+"ecrekpgf "cv'722" E0 9"
- **Fig.4.11** O ci pgvkucvkqp"cu"c"hwpevkqp"qh"cr r nkgf "o ci pgvke"hkgrf "hqt" $Vk_{S/z}Eq_zQ_{4"}$ hqt"%c+'z'"? '2023"cpf '%e+'z'"? '2025"o gcuwtgf "cv'32"cpf '522"M0]; 3_"
- Fig.4.12 Vtcpuo kuukqp"grgevtqp"o ketqi tcrj "qh"Vk20 9Eq2025Q4"pcpqr ctvkergu0]; 4_"
- Fig.4.14"VGO "o ketqi tcrj "qh" yi g"cu"u $\{$ pyj gukugf "Vk Q_4 "pcpqr ctvkengu0'Kpugv'*c+" uj qy u" yi g"UCGF "r cwgtp" cpf "*d+"r ctvkeng" ukg" f kuxtwdwkqp" j kuqvqi tco "qh" yi g" pcpqr ctvkengu03 8"
- Fig.4.15" HG/UGO <" *c+" my " o ci pkhecvkqp" ko ci g" qh" uco r ng" D_3 " *d+" J ki j " o ci pkhecvkqp" ko ci g"qh" uco r ng" D" *E+" J ki j " o ci pkhecvkqp" ko ci g"qh" uco r ng" E" *p-ugv'uj qy u'yj g'GF U'ur gevtc'qh'yj g'uco r ng' E+0]; 9_"
- $\label{eq:fig.4.16} \textbf{Fig.4.16} "c+"VGO "$ko ci g"qh" yi g"uco r ng"E" $kpugv" uj qy u" yi g"J TGO "$ko ci g"qh" yi g" pcpqy $kg+".$'d+"UCGF "r cwgtp"qh" yi g"uco r ng"E" $kpugv" uj qy u" yi g"ugngevgf "dwpej "qh" pcpqy $kgu+"cpf" $e+"UCGF "r cwgtp"qh" pcpr ct $kengu" uggp "$kp" yi g"uco r ng"E" $kpugv" uj qy u" yi g"ugngevgf "ctgc+0]; : _"$
- **Fig.4.17**"Rtqhkrg"hkwlpi "hqt"*c+"Uco r rg"C $_3$ "cpf "*d+"Uco r rg"E"htqo "Tlgw.grf " O gyi qf 0]323_"
- Fig.4.18 Pqto cnk gf "Tco cp" ur gevtc" qh" uco r ng "C" cpf "E" *kpugv" uj qy u" yj g" | qqo gf "xkgy +0]326_"
- **Fig.4.19**"O ci pgvkucvkqp"*\ HE"cpf "HE+"cu"c"hwpevkqp"qh"vgo r gtcwtg"hqt"uco r rg" E"cv"c"r tqdkpi "hkgrf "%c+"722"Qg"cpf "%d+"3"Vgurc0"]328_"
- Fig.4.20"Vj tgg"f ko gpukqpcn'grgevtqp"f gpukv{ "kuq/uwthceg"qh"*c+"uco r g"C3"cpf " *d+'uco r g'E0|329_"
- Fig.4.21"Vy q"f ko gpukqpcn"grgevtqp"f gpukv{ "f kuxtkdwkqp"qh"*c+"uco r g"C3"cpf " *d+'uco r g'E0\]329_"
- **Fig.4.22** Qpg"f ko gpukqpcn"grgevtqp"f gpukv{ "r tqhkrg"qh"uco r rg"C₃"cpf "uco r rg"E" dgw ggp"Vk"cpf 'Q"cvqo u0]32: _"
- **Fig.5.1.** "I CZTF" r cwgtp"qh" VkQ_4 " yi kp" hkro u"f gr qukwgf "cv'xctkqwu"qz {i gp"r ct vkcn" r tguuwtguQ "f gpqvgu" yi g" Vk_6Q_9 " r j cug"] 334_"

- Fig.5.2.'I CZTF 'r cwgtp"qh'EVQ"yi kp"hkro u'f gr quksgf "cv'xctkqwu"qz{i gp"r ctvkcn' r tguuwtgu0'Kpugv'uj qy u''yi g"ZTF "ur gevtwo "qh'EVQ"hkro "f gr quksgf "cv'522"o Vqtt" qz{i gp"r ctvkcn'r tguuwtg'y kyi "4 "?"42"/"52Å0', "f gpqvgu''yi g"Vk₆Q₉"r j cug0]335_"
- **Fig.5.3** Too cp"ur gevtc"qh"*c+" VkQ_4 "cpf"*d+"EVQ"hkro u"f gr qukxgf "cv"xctkqwu" qz {i gp"r ctvkcn'r tguuwtgu0]336_"
- Fig.5.4."TDU'ur gevtc"qh"EVQ'hkro u'f gr quksgf "qp"Ukc"*c+'xcewwo ."*d+''206"o Vqtt." *e+"3"o Vqtt"cpf "*f+''522"o Vqtt0'Drcent'rkpg"ku" yi g"gzr gtko gpvcn'f cvc"cpf "yi g" uko wrcygf 'ur gevtwo 'ku'ui qy p'kp'tgf0']337_"
- **Fig.5.5**"HG/UGO "ko ci gu"qh"EVQ"yj kp"hkm "f gr qukxgf "cv"*c+"xcewwo ."*d+"208" o Vqtt."*e+"3"o Vqtt."cpf "*f+"EVQ"522"o Vqtt"qz {i gp"r ctvkcn|r tguuxtg0"]338_"
- **Fig.5.6**" HG/UGO "ko ci g"qh" EVQ" yi kp"hkm "f gr qukxgf "cv" 522" o Vqtt" qz {i gp" r ctvkcn'r tguuwtg0] 339_"
- **Fig.5.7.**"ZRU"eqtg"rgxgri'ur gevtc"qh<"*c+"Q"3u"rgxgri'qh"VkQ_{4"}.*d+"Q"3u"rgxgri'qh" EVQ"hkro "*e+"Vk"4r "rgxgri'qh"VkQ₄"cpf "EVQ"hkro "cpf "*f +"Eq"4r "rgxgri'qh"EVQ" hkro "f gr qukxgf "cv"522"o Vqtt0]33: _"
- $\label{eq:Fig.5.8} \textbf{Fig.5.8} \ ZTF \text{ "r cwgtp" qh" Vk}_{20.7} Eq_{2027} Q_{4/} \text{ "hkro u" f gr quky f "qp" NcCr} Q_5 \text{ "uwduxtcvg" cv" f khpt gpv' qz } \{i \text{ gp" r ctvkcn'r t guuwt gu0'}] 342_\text{"}$
- $\label{eq:Fig.5.9} \textbf{Fig.5.9} \ ZTF \text{ "r cwgtp"qh"VkQ}_{4/\text{ "lkm}} \ u\text{"f gr qukygf "qp"NcCrQ}_5 \text{"uwduvtcvg"cv"f khhgtgpv" } \\ qz \ \{i \ gp\text{"r ctvkcrl"r t guuwt gu0"}]343_\text{"}$
- Fig.5.10"Too cp"ur gevtc"qh" $Vk_{3/z}Eq_zQ_{4/}$ "*z"?"2."2027+"hkro u"f gr qukxgf "cv"205" o Vqtt"qz {i gp"r ctvkcn'r tguuxtg0]344_"
- $\label{eq:Fig.5.11} Fig.5.11 \ Qz \{i \ gp"tguqpcpeg" TDU"tguwn"qh"Vk_{20.7}Eq_{20.7}Q_{4/}\ "cpf"VkQ_{4/}\ "hkm"fgrqukxgf"qp"NcCrQ_5"uwduxtcvg"cv'206"oVqtt"qz \{i \ gp"rctvkcn'rtguuwtg0'Vj g"kpugv"uj qy u'vj g'TDUlej cppgrkpi "tguwnu'hqt"VkQ_{4/}\ "hkm 0']345_"$
- $\label{eq:Fig.5.12} \textbf{Fig.5.12} \text{"URO "ko ci gu"qh"} V & \text{$_{\!\!\!\!Q_{\!\!\!/}}$} P & \text{$_{\!\!\!\!/}$} Eq_{2027}Q_{4/} \text{"hkm u"f gr qukygf "qp"} NcCrQ_{5"} cv"*c+"208" o Vqtt."*d+"32"o Vqtt"cpf "*e+"522"o Vqtt"qz {i gp"r ct \kcri'r tguuwtg0"]346_" "$
- $\label{eq:figs_sign} \textbf{Fig.5.13}"C"v\{r\ kecn''URO\ ''ko\ ci\ g"qh''VkQ_{4/\ ''}hkro\ ''f\ gr\ qukygf\ ''cv''208"o\ Vqtt"qz\ \{i\ gp''\ r\ ct\ vkcn''r\ t\ guuwt\ g0']346_"$
- $\label{eq:figs:s:14} Fig. 5.14 \ O \ ci \ pgvke''kgrf''*O + "xu0''cr r rkgf''o \ ci \ pgvke''kgrf''*J + "qh<'*c+"VkQ_4''kro''' f gr qukxgf "cv''208''o Vqtt."30 \ Vqtt''cpf''522''o \ Vqtt''*ev''522''M+'''*d+''EVQ'''kro'u'' f gr qukxgf "cv''208''o \ Vqtt''cpf''522''o \ Vqtt''qz {i gp''r ctvkcri'r tguuwtg''*cv''522''' M+''cpf''*E+''EVQ'''kro u''f gr qukxgf "cv''208''o \ Vqtt."3''o \ Vqtt''cpf''522''o \ Vqtt''qz {i gp''r ctvkcri'r tguuwtg''*cv''7'M+0''']347__''$
- Fig.5.15 \ HE"cpf "HE"o ci pgvkucvkqp"*O +"xu0'vgo r gtcwtg"*V+"cv"72"Qg"qh"*c+" EVQ"hkro u"f gr qukvgf "cv"203"o Vqtt."3"o Vqtt"cpf "522"o Vqtt"qz {i gp"r ctvkcn'r tguuvtgu'*d+"VkQ4"hkro u"f gr qukvgf "cv"203"o Vqtt"qz {i gp"r ctvkcn'r tguuvtg0"]349_"

- Fig. 5.17" O ci pgykucykqp"*O +"xu0'cr r nkgf "o ci pgyke"hkgnf "*J +"qh"*c+"Uk'uwduvtcvg" o gcuwtgf "cv"522"M'cpf "7"M'cpf "*d+"NcCn Q_5 "o gcuwtgf "cv"522"M'cpf "30 "M0'Kpugv" qh"*d+"uj qy u'yj g'O "xu0J "r my'qh"yj g'uco r mg"j qnf gt0" 354_{-} "
- **Fig.5.18.** ZRU'Eqtg"ngxgn'ur gevtc"qh''EVQ"hkro "f gr qukygf "cv'522"o Vqtt<"*c+"Vk" 4r "*d+"Q"3u"cpf "*e+"Eq"4r "tgi kqp"y kyj "4ngX"Ct-"kqp"ur wwgtkpi "hqt"62"cpf ": 2" o kpwgu0]356_"
- $\label{eq:Fig.5.19} \textbf{Fig.5.19} \text{"Vqr qi tcr } j \text{ ke""rghv'r cpgn<"} J \text{ gki } j \text{ v+}_{o cz} \not \in 82 \text{"po +"cpf "eqttgur qpf kpi "O HO " ko ci g""tki } j \text{ v'r cpgn<"} J \text{ gki } j \text{ v+}_{o cz} \not \in "62" J \mid +\text{"qh"vj g"hkro "Vk}_{Q:7} Eq_{20:37} Q_{4/} \text{ "f gr qukvgf" cv"c+"208"o Vqtt"cpf "*d+"3"o Vqtt"qz } i \text{ gp"r ctvkcn'r tguuwtg0"}]357_"$
- $\label{eq:Fig.5.20.} Fig.5.20. C" v{r kecn' j ki j " tguqnwkqp" etquu" ugevkqpcn' vtcpuo kuukqp" grgevtqp" o ketqi tcr j "qh'EVQ'hkro 0'Kpugv'uj qy u''y g"j ki j "tguqnwkqp"grgevtqp" o ketqueqr ke" ko ci g''eqttgur qpf kpi ''vq''*332+''r rcpg''qh''twkrg''r j cug''qh''VkQ_40']358_'' ...$
- Fig.6.1 Qz {i gp"tguqpcpeg TDU"f cvc"qh"vj g"r tkurkpg"vj kp"hkro "f gr qukxgf "qp"Uk" uwduvtcvg"htqo 'Eq/f qr gf "VkQ4"vcti gv0]362_"
- Fig.6.2 I CZTF "r cwgtp"qh" VkQ_4 "yi kp"hkro u"f gr qukxgf "qp"Uk'uwduxtcvg"*hkro "R+." cppgcrgf "kp" Q_4 "*hkro "C+"cpf "Ct"*hkro "D+"cvo qur j gtg0]363_"
- Fig.6.3 HG/UGO "o ketqi tcr j "qh"Vk Q_4 "'y kp"hkro "cppgcrgf "kp"*c+" Q_4 "*hkro "C+"cpf " *d+"Ct"*hkro "D+"cvo qur j gtg"B "722" q E0'Kpugv"qh"*d+"tgr tgugpvu"c"v{r kecn"GF U" ur gevtwo "qh"y g"hkro "o gcuvtgf "cv'42"mX0"]364_"
- **Fig.6.5** Vtcpuo kwcpeg" cu" c" hwpevkqp" qh" kpekf gpv" y cxgrgpi y " * +0' Vj g" kpugv" uj qy u" y g" * j $+^{3\,44}$ " cu" c"hwpevkqp" qh' kpekf gpv'r j qvqp" gpgti { " * j $+^{0}$] 367_"
- Fig.6.6 TDU'f cvc''qh''yi g'hkro 'C''cpf 'D''kpf kecvkpi ''Vk''Uk''cpf ''Q''gf i gu0']368_''
- Fig.6.7 O ci pgvkucvkqp" cu" c" hwpevkqp" qh" cr r nkgf " o ci pgvke" hkgrf " hqt" vj g" Uk' uwduvtcvg0']369_"
- Fig.6.8 O ci pgvkucvkqp"cu"c"hwpevkqp"qh"cr r nkgf "o ci pgvke"hkgrf "hqt"vj g"hkro "R"cv" 522"cpf "7"M"*kpugv"uj qy u"vj g"| qqo gf "xkgy "qh"vj g"O/J "mqr "cv"my "hkgrf u+0"]369_"

- **Fig. 6.9** Magnetisation as a function of applied magnetic field for the film A and B at (a) 300 and 5 K (b) (insets show the zoomed view of the *M-H* loops at low fields). [148]
- **Fig.6.10** (a) XPS survey scan of TiO_2 films annealed in O_2 and Ar (b) Oxygen 1s core level spectra of the films: Inset shows the O 1s core level spectra for bulk TiO_2 with Gaussian fitting with Shirley background (c) Ti 2p core level spectra of the films. [154]
- **Fig.6.11** High resolution cross-sectional transmission electron micrograph of the TiO₂ film on Si substrate. The inset shows the EDS of the Si substrate.[154]
- **Fig.6.12** Schematic representation of magnetic polarons in TiO₂. The solid triangles represent oxygen vacancies where an electron, shown as an arrow is localized. The grey circles represent the electron wave-function. The delocalized electrons are denoted as an arrow on a dark circle. [155]
- **Fig.7.1** Electronic and Nuclear energy loss as a function of energy for silver ion on TiO_2 target.158
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