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**Exabyte.ioä;£çŤĺãČďãČŇãČěãČćãČň**

***Release 1.0***

**Exabyte**

**Jun 18, 2020**



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ăAŞăAőăČŽăČijăČŷăAğăAřăĂAExabyte.ioăAőăŞ■ăIJăŮăzăşŤăČŠćŧ'zăžŇăAŮăAŁăAŽăĂĆ



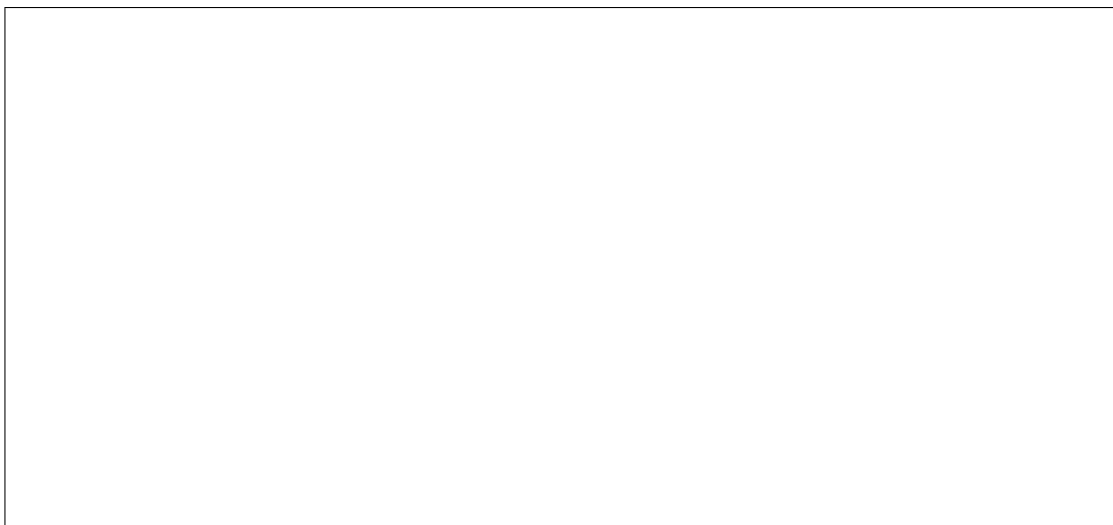
## 1.1 ä;£çŤíåL'■èí■åóŽ

Exabyte.ioăĈŠăj;ƒçŦlăAžăĈNăyŁăAğăAœél■ăoŽăAňăAđ'ăAĎăAęèłmæŸŎăAŮăAŁăAžăĂĈ

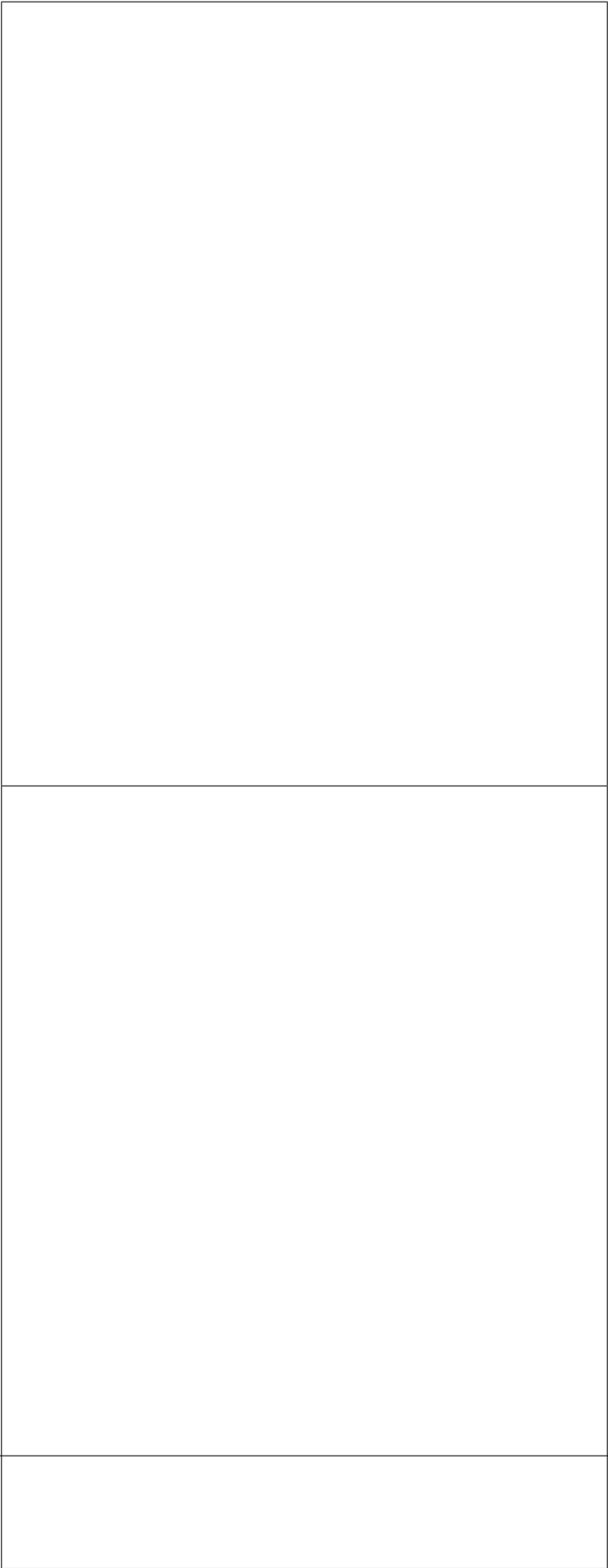
### 1.1.1 Exabyte.ioãĆcãCnãÇẽãÇšãČĹä¡ĲæĹŘæÚzæſŢ

Exabyte.ioãAõãCćãCňãÇẽãÇšãČľãČŠajJæŁŔãAžãČNæŮžæşȚãČŠěmæŸŎãAŮãAĵãAžãĂ

1 EXABYTE.IO ĆŻēēŃšăĈŽăĈijăĈyăĂyăĈăĈrăĈzăĈzăĂĂăĖŖăĈrăĈlăĈĈăĈr

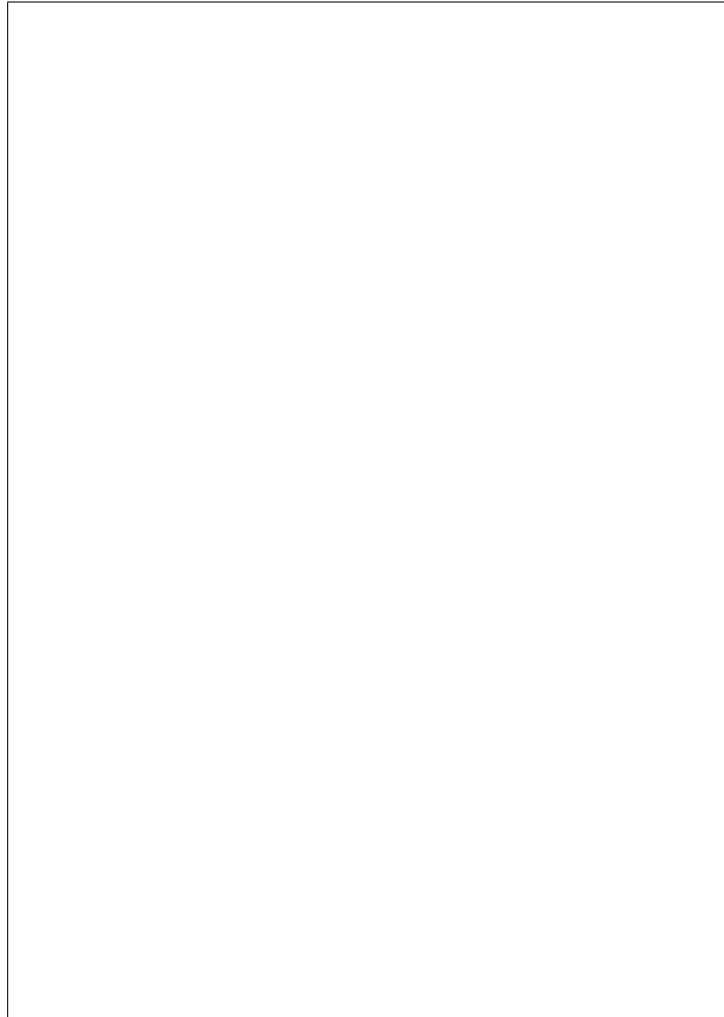


2 ãÇãÇijãČnáĆcãČLřãČňãČzãČSřãĚãŁZãAŮãĀAĬãĀZm not robotãĀňãČAãČġãČČãČřãČSřãĚãČŇãAęęšłãŤRãAņnèğç■řãĀĆãAĬãA  
verification codeãČSřãČřãČĬãČČãČř

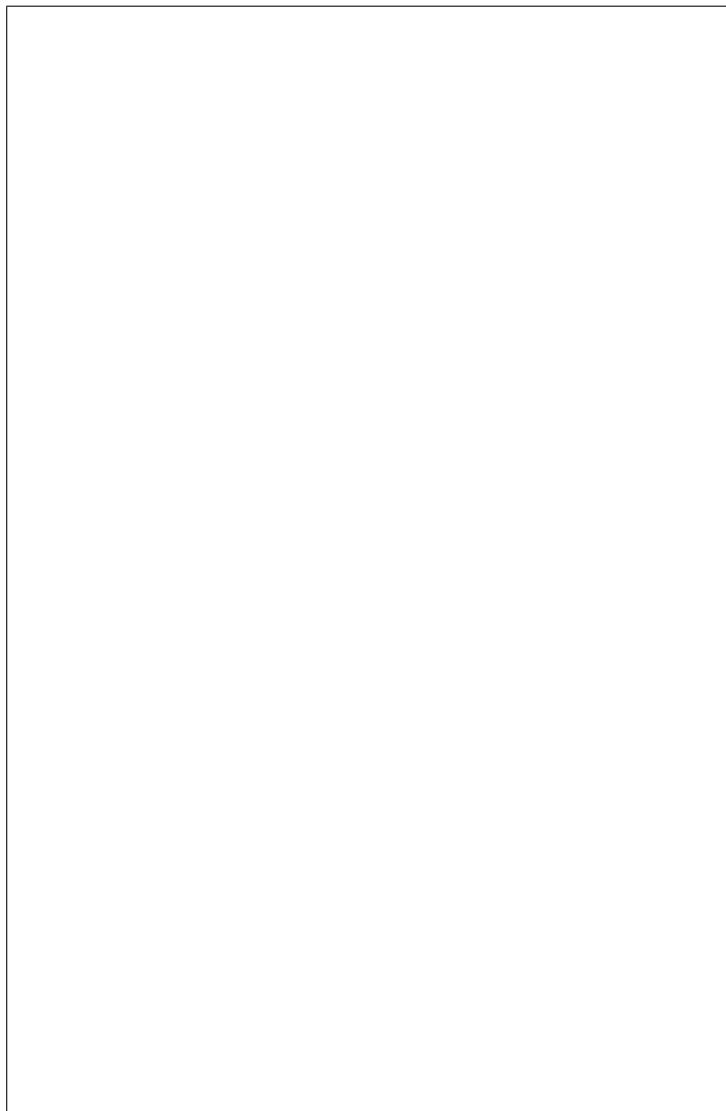




3 āŘŇāAŸçŤzeÍcāAğāČqāČijāČŇāČćāČĹ'āČŇāČzāőZāAñéĀAŁqāAŤāČŇāAşè■èÍijāČşāČijāČĹ'āČŞāĚēāŁŽ



4 èĞèžŇāAőæČĚāăśāČŞèÍŸāĚēāĀAèÍŸāĚēāŮŇāĀŇRegister ->āĀ■āČŞāČřāČĹāČĈāČř



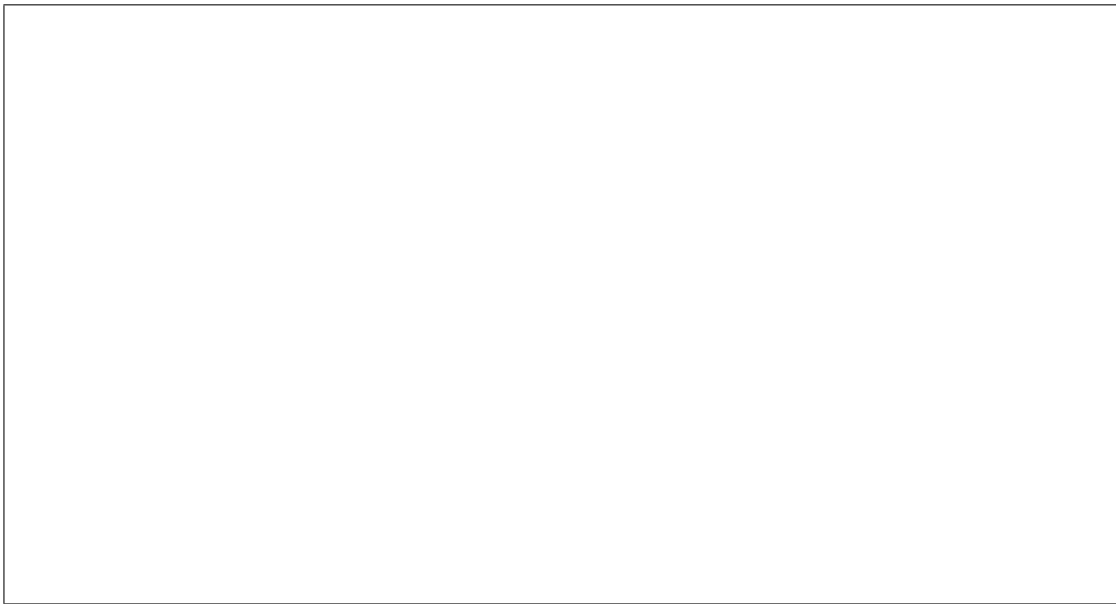
5 ϥŻzéŇśăĀŇăőŇăžĒăZăĆŇăĀĺϥĐăăžŇăĆŧăĆď'ăČşăĆď'ăČşăĀZăĆŇăĀşăĀĺăĀŇăĀğăĀăĀăĀZăĂĆ



### 1.1.2 æŏNénŸăAŇăĈĹ'èĹĹčŏŮéă■ăĈŠăĈAăĈċăĈijăĈŸăAŽăĈŇăăť'ăŘĹ

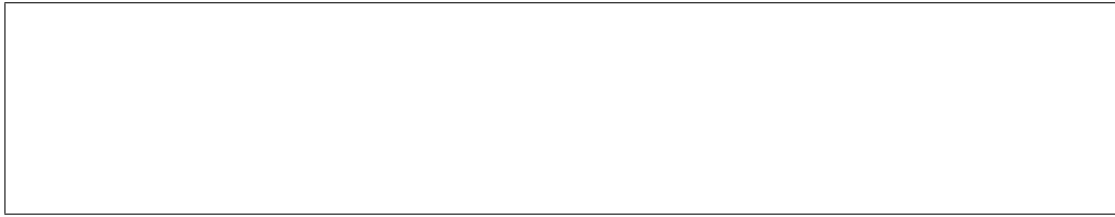
ăAşşăAşşăAşşăAřăĂăExabyte.ioăAňăĈAăĈċăĈijăĈŸăAŮăAşşéă■ăAŇăĈĹ'ăĂăĹčŏŮéă■ăĈŠăĹ'şăĈĹăAřăĈŇăŮăŹăşŤăĈŠăĹăŸăŮăAŮă

ăĈAăĈċăĈijăĈŸăæŏNénŸăAŇăĈĹ'èĹĹčŏŮăAŮăBalanceăAňăĚăĹăăAăŽăĈŇăăť'ăŘĹăAřăĂăăĂăŇăBilling & PaymentsăĂăăĈăŞăAşşăĹăďăAŮăAăăăAăŽăăĈă

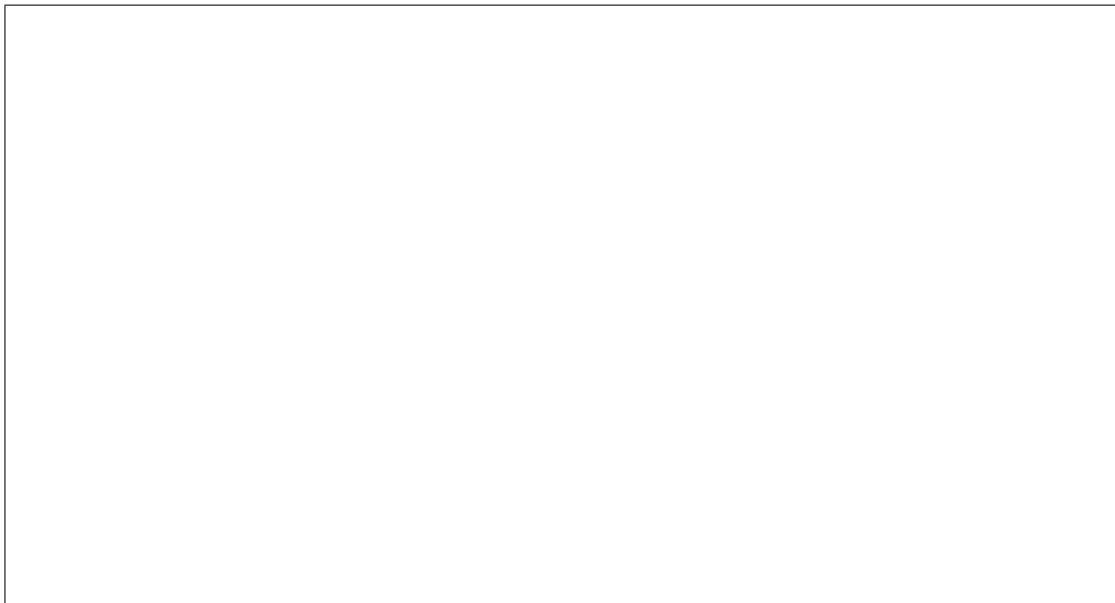


ăĂăŇăPayment Method-

sāĀ■āAőāC£āČŮāAŇāCL'āĀAāČAāČčāČijāČÿéĜSéa■āĀAæőNénŸāĀAæIJL'āŁzæIJšéŹŔāAłāAł'çćžel■āAŽāČNāAšāAłāAŇāAğāA



æőNāČŁæőNénŸāAŇāCL'āĀAēÍŁçőŮéa■āAőBalanceāČŠácŮāČĐāAŽāāt'āŔĹāĀABalanceāAőæÍāAłāAČāČNāĀŇApply  
CreditāĀ■āČSéAÿæŁďāAŮāAġāAŽāČ



āČAāČčāČijāČÿāAŮāAšāAĐéa■āČSéAÿæŁďāAŮāĀAāĀŇAdd  
CreditāĀ■āAğæŇĜăőŽāAŮāAšéa■āAŇèŁ;āŁāāAŦāČNāAġāAŽāČ



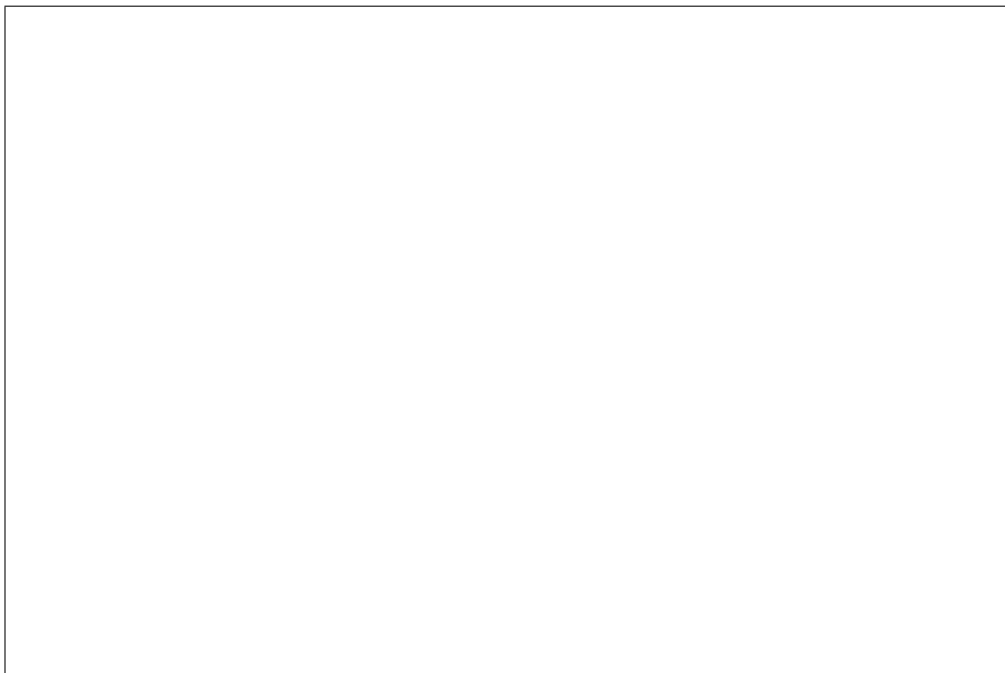
EXabyte.ioāAōāČíāČşāĆráĚĹ

EXabyte.ioāAōăžŇăĹŇéŽE

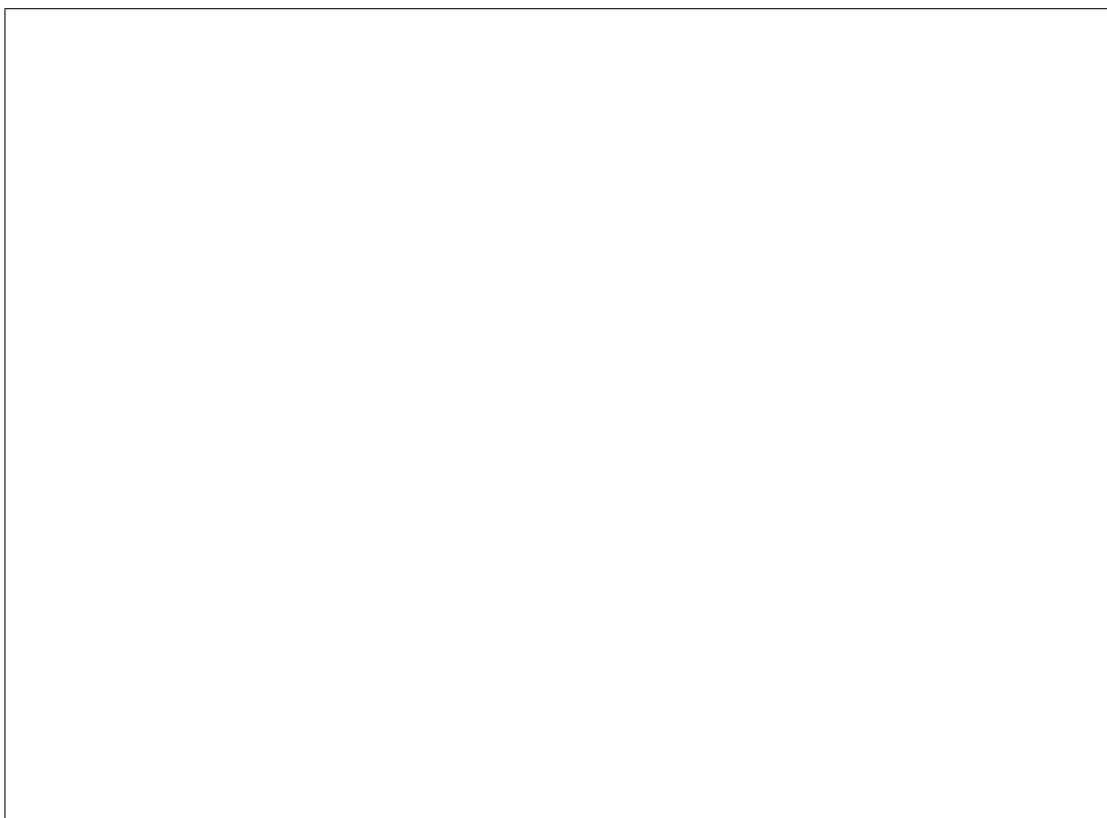
### 1.1.3 āĆzāČĹāČňāČijāČyēĞŖāČŠēξ;āŁāāAŻāĆŇāāt'āŘĹ

āAşāAşāAğāAřāĀAExabyte.ioāAŋāČAāČćāČijāČyāAŮāAşēa■āAŇāČĹ'āĀAāČzāČĹāČňāČijāČyāČŠāćŮāČĎāAŻāĚŮzæşŦāČŠēġæŸ

æōŇāČĹæōŇēŋŸāAŇāČĹ'āĀAāČzāČĹāČňāČijāČyāČŠāćŮāČĎāAŻāāt'āŘĹāĀABalanceāAōæĪāAŋāAČāĆŇāĀŇAdd  
StorageāĀāČŠēAşæŁďāAŮāAĹāAŻāĀĆ



äÿŇèÍŸãAõãČęãČčãČšãČĽ'ãČijãAňëáĽd'žãAŤãČŇãAĽãAžãĂĆ



ăĀşăĀşăĀğăĀřăĂĀ10GBè£;ăŁăăĀŽăČŇăL'ŇçűŽăĀăăĆŞèąŇăĀłăĀďăĀĹăăĀŽăĂĆăĀĹăĀôăăť'ăŘĹăĀřăĂĀ10GB  
StorageăĆŞéĀÿăŁďăĀŮăĂĀăĂŇRequest StorageăĂăăĆŞăĹĵăĀŮăĀĹăăĀŽăĂĆ



ăČłăĆřăĆłăĆžăČĹăĆŞèąŇăĀłăĀĒăĀĹăĂĀăĀŖşăÿŇăĀŋăČłăĆřăĆłăĆžăČĹăĆŞèąŇăĀłăĀćăĀşăăĀşăăĀłăĆŞçď'žăĀŽăČăăĆćăĆžăČĵăČÿ







řijŚřijŘřijğřijćè£;âŁăăAŤăČŇăĂAřijŤřijŘřijğřijćăAŇăCL'řijŮřijŘřijğřijćăAŇăAŤăAčăAęăAĎăAĹăAŽăĂČ



èaŹđ'žăAŇăZt'æŮřăAŤăČŇăAęăAĎăAŤăAĎăât'âRLăAřăĂAăRşăyŁăAăăČlăČ■ăČijăČL'ăČIJăČĤăČşăČŚăLijăAŮăAęăAŤăAăăAŤăA



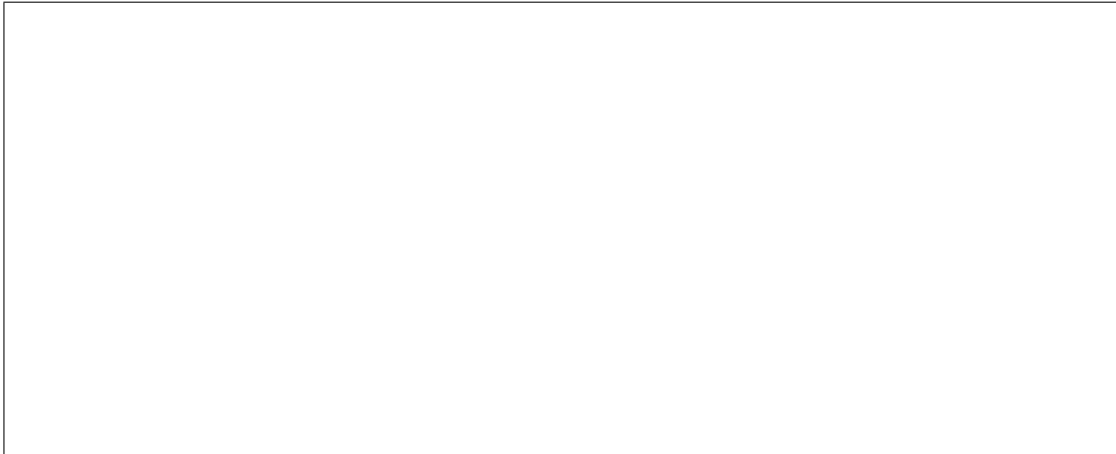
**Note:** äzzäĎŔăĂœëĹŁçõŬăÇîăČijăČŘăČijăĂőăĆzăĽĹăČňăČijăČÿăĈŞê;ǰăĽăăĂŻăĆŇăŽăŅăĂŃăŦăŕêĈ;ăĂğăĂŻăĂőăĂĞăĂÀê;ǰăĽăăĈ

**1.1.4** **çtDçzTãĆcãĆnãĆęãČšãČŁãĄnãČęãČijaĆúè£;ǻŁǻ**

çṭı̣ð̣ç̣ẓṭạ̃ç̣ạ́ç̣ṇạ̃ç̣ẹạ̃ç̣ş̣ạ̃ç̣ḷạ̃ạṇạ̃ç̣ẹạ̃ç̣ịj̣ạ̃ç̣ụ̈ạ̃ç̣ş̣ẹf̣;ạ̃ḷạ̃ạ̃ẓạ̃ç̣ṇẹụ́ẓæ̣ş̣ṭạ̃ç̣ş̣ẹḥṇẹỵọ̃ạ̃ụạ̃ạj̣;ạ̃ạẓạ̃ç̣

ăŔșăČăăĈNăĈěăCijăAőăĂŃAccount PreferencesăĂăAŃăĈL'èăŃăAđăAŁăĂZăĂĆ

ăĈăăĈŇăĈěăĈijăĂŇPEOPLEăĂăăAőăRşÿyŁăAąăăAĈăĈŇeİšăAőăĈUăĈl'ăĈzăĈIăĈfăăĈşăăAŇăĈL'eğjăăăăAűăăăăăZăăĈ

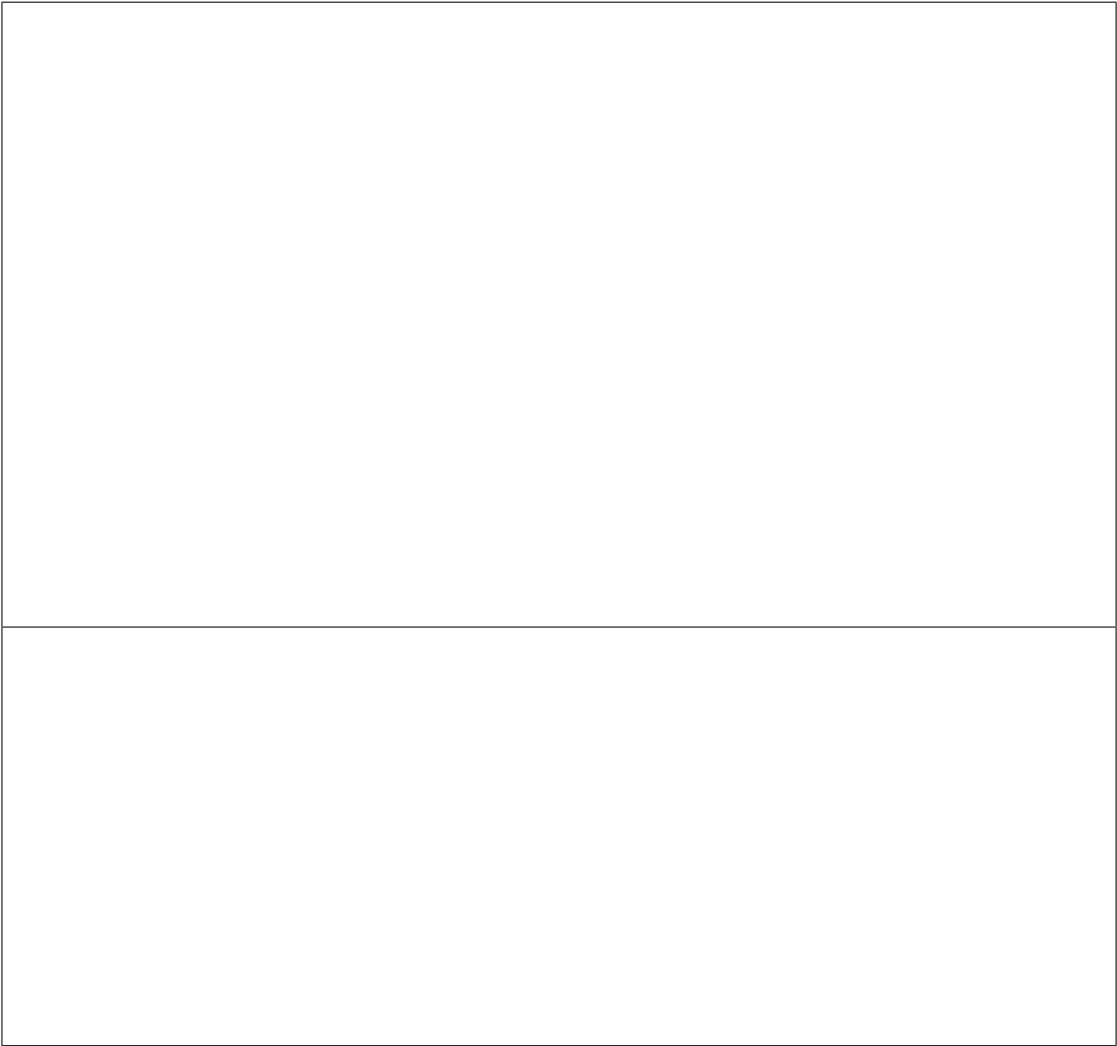


èŽŋçĬĭjéŔăăAőæŋĎăAğăĂAè£;ăŁăăAŮăAşăAĎăĈăăĈĭjăĈŭăŔăăĈŞæđ'Ĭĵť'ćăAŮăAĭăăAŽăĂĈ

è£;ăŁăăAŮăAşăAĎăĈăăĈĭjăĈŭăAŇæđ'Ĭĵť'ćăAŽăĈŇăăAşăAĬăAŇăAğăAăăAşăăĈĹ'ăĂAăăĈAăăĈğăăĈăăĈŕăăĈşăăĈăăĈŇăăŔşăăŸăăAőăăĂŇ  
ItemsăĂăăĈĬăăĈĹăăĈşăăĈŞæĬĭjăAŮăAĭăăAŽăĂĈ



è£;ăŁăăAŦăăĈŇăăAşăăĈăăĈĭjăĈŭăAŇæĬ' éŽŔăĈŞăăŸăăŸăăŖăăŮăăAşăăĈĹăăĹ'ăĹăăŽđ'ăăAŽăăĈŇăăŧ'ăăŔăăAŕăăĂAăăĈăăĈĭjăĈŭăAőăăŔşăăAŇăăĈăăĈ



çŦşēñŇăAŮăAşăăŇăžžăAőăČqăČijăČňăČćăČĹăČňăČźăAňăăAăyŇēİŸăAőăČĹăAĚăAĽăČqăČijăČňăAŇăśĹăAăăAăăAăZăăĂ

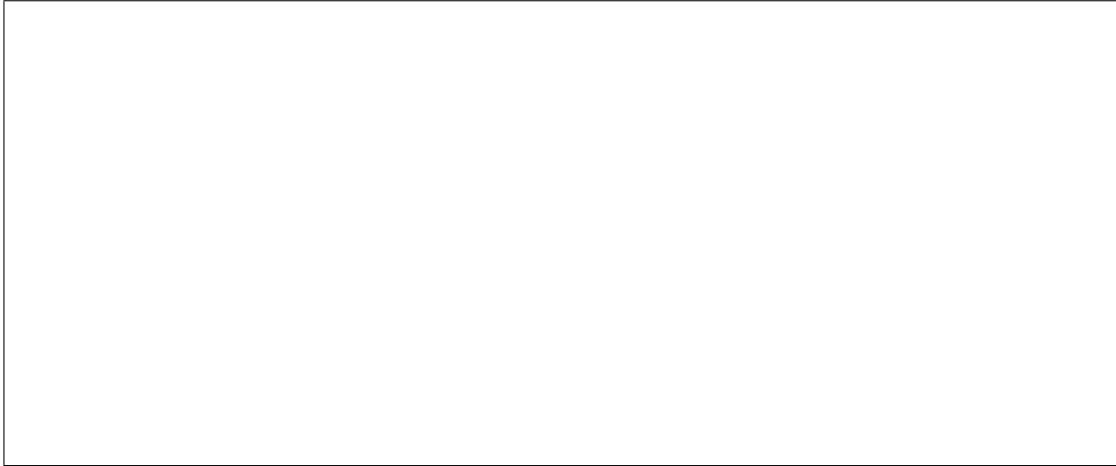
workflowăŦă	è'şçŦŕ
Remove	çŦĎçžŦăČćăČňăČěăČşăČĹăAŇăČĹăăČěăČijăČŮăĹăĹéŽď
Open	ăČěăČijăČŮăČĚăăşēăĹçď'ž
Make admin	çőăçŖĚěăĚăĹŕ' éŽŖăžŸăyŎ
Revoke admin	çőăçŖĚěăĚăĹŕ' éŽŖăĹăĹéŽď

1.1.5 äČAăČijăČăăAőă;IJăĹŖăŮăzæşŦ

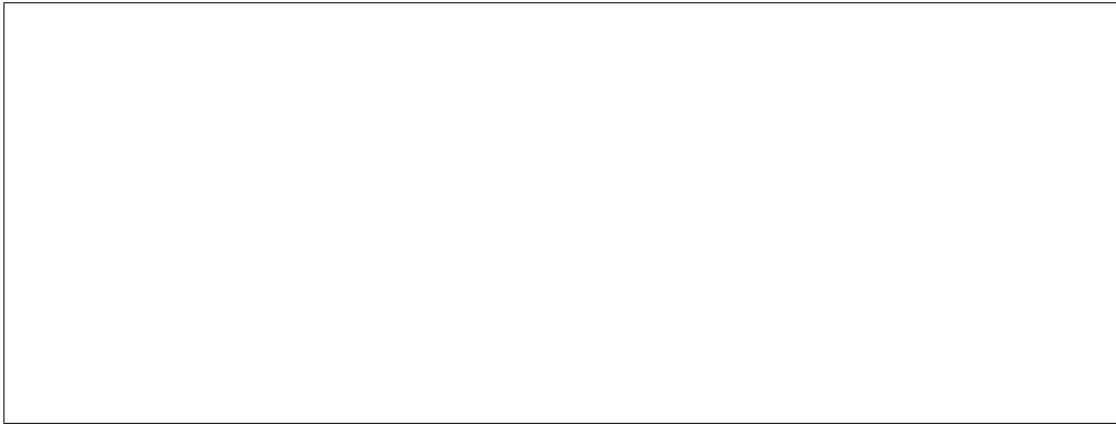
çŦĎçžŦăČćăČňăČşăČĹăAőăyŇăAňăăAăăČAăČijăČăăČşă;IJăĹŖăAŮăČŕăČňăČijăČŮăçőăçŖĚăAŽăČŇăAşăăĹăAŇăAğăAăăAăăAăZăăĂ

ăAşăăAşăăAğăăAŕăăAăăČAăČijăČăăAőă;IJăĹŖăŮăzæşŦăČŞēŦăŸŎăAŮăAăăAăZăăĂ

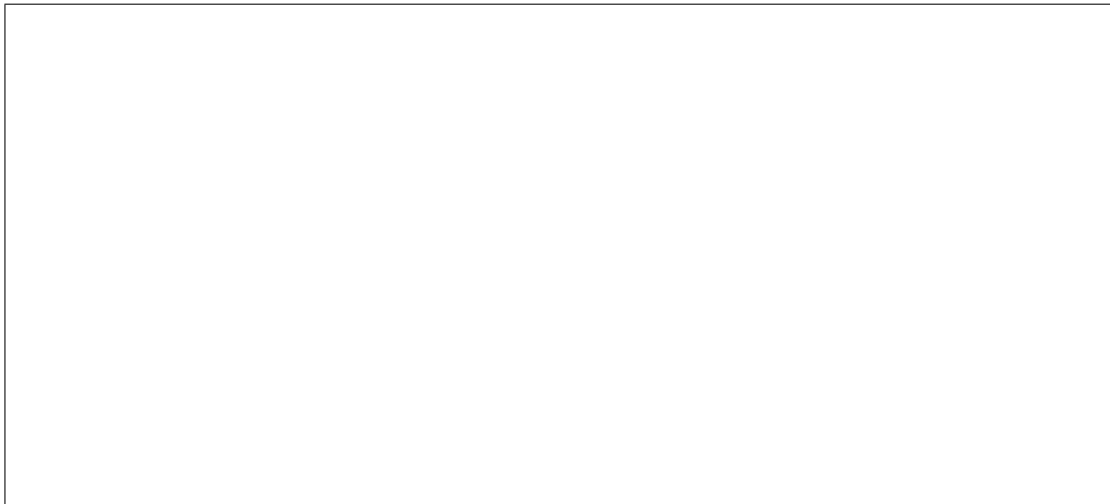
āČAāČijāČāāČšāIJæĹŘāZāČŇāāt'āŘĹāĀTEAMSāAőēāĚϙŽōāČšéAÿæĹďāAŮāAĹāAŽāĂČ



CreateāČIJāČĤāČšāČæLijāAŮāAĹāAŽāĂČ

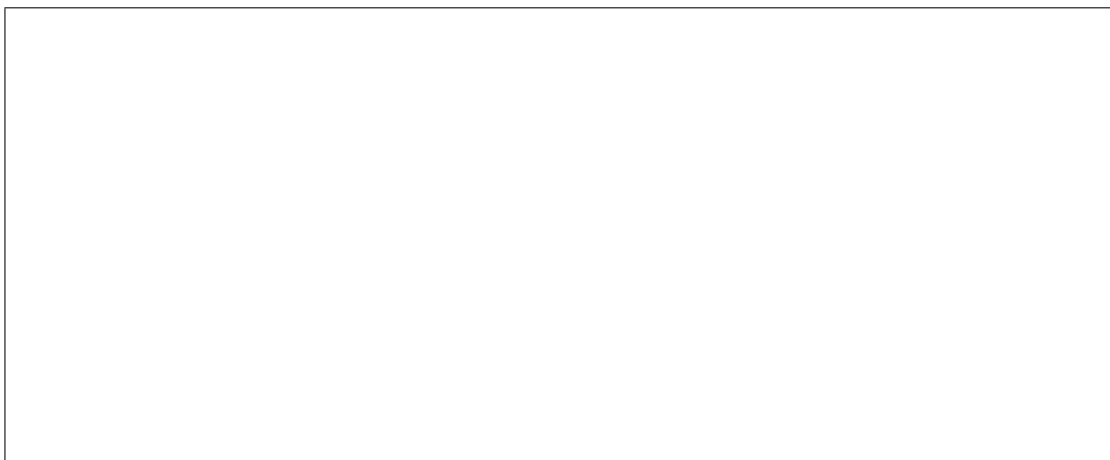


āČAāČijāČāāŘ■āČďæĹ'ēŽŘāAőēĹ■āőŽāČšéāŇāAďāAĹāAŽāĂČ

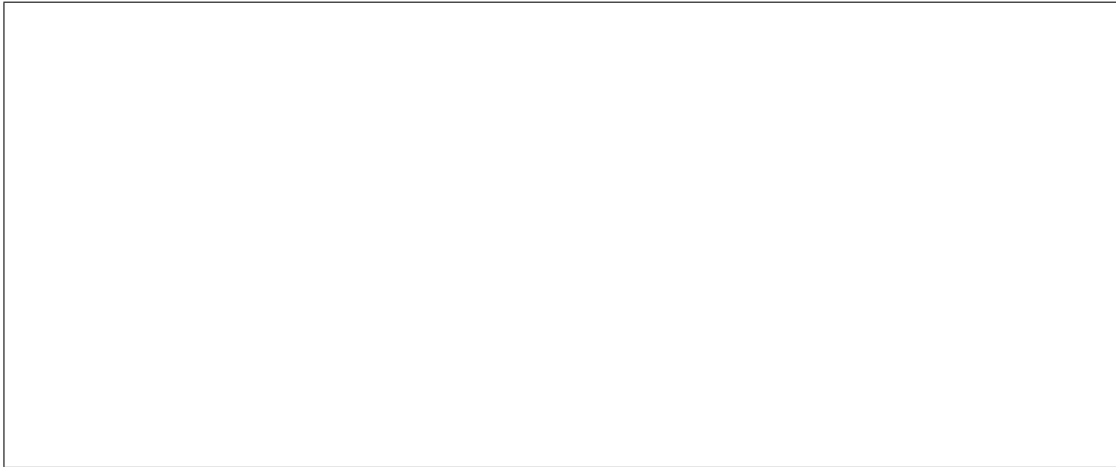


éăĚçŽôăŘ■	è'şçťř
read	èl■ăA£èçijăA£
edit	æŽÿăA■èçijăA£
comment	ăĈşăĈqăĈşăĈĹè£;ăĹă
execute	èĹĹçóŮăăőşèqŇ

ăĚĩăAęăAőæĹ' éŽŘăĈŞăÿŎăAĹăĈŇăăť' âŖĹăAŋăAŕăĂAăĚĩăAęéAÿæĹďăAŮăăAŹăĂĈ



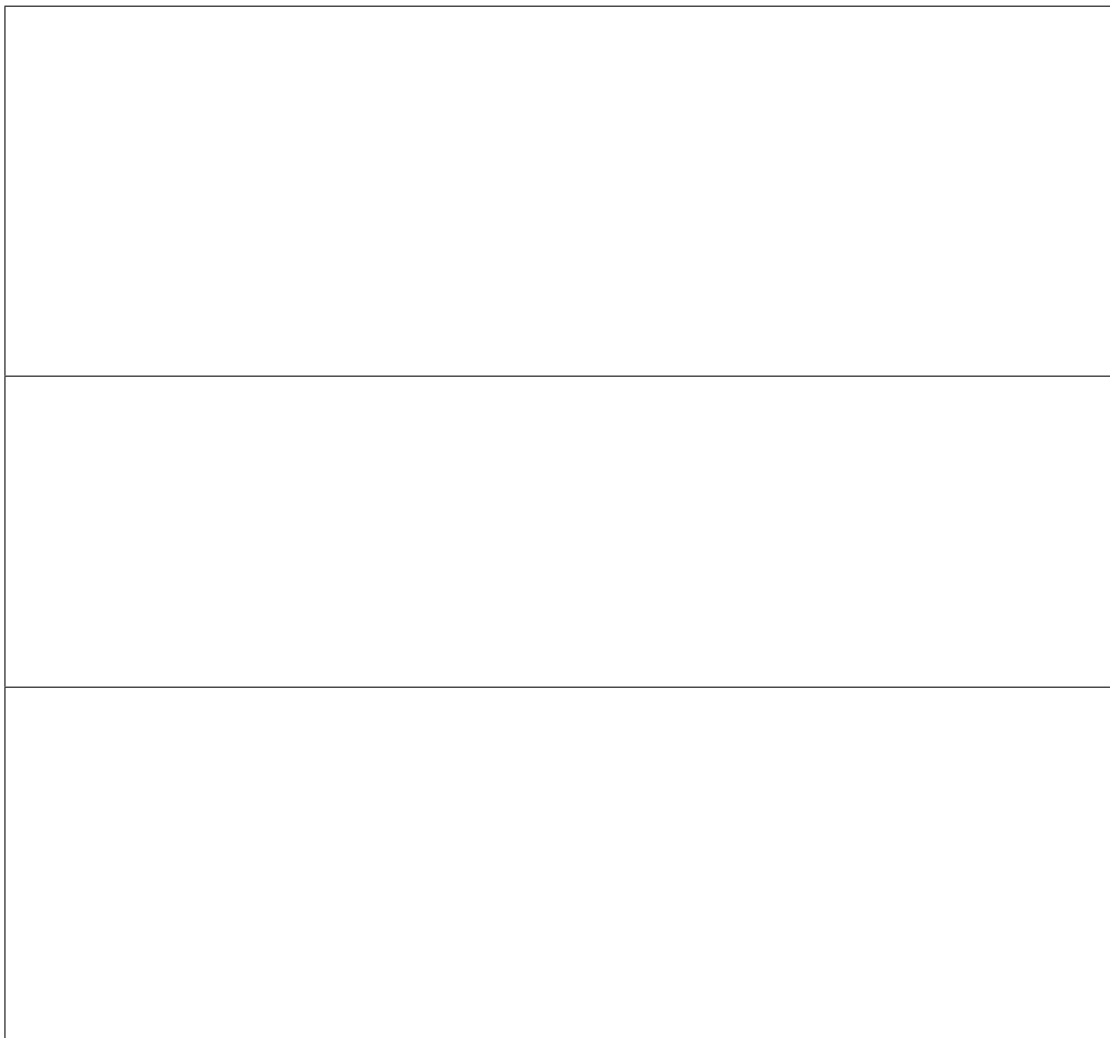
ă;ĲæĹŖăĈĲăĈĤăĈşăĈĈşæĹijăAŽăAĹăĂAă;ĲæĹŖăAŮăAşăĈAăĈijăĈăăAŇè£;ăĹăăAŤăĈŇăăA;ăAŽăĂĈ



äĲJæŁŘāAŮāA§āČAāČijāČāāAñāČqāČšāČŘāČijāČŚē;āŁāāAŮāAĹāAŽāĂČē;āŁāāAŽāČŇāČAāČijāČāāAōPEOPLEāAŇāČŁ'āČqā



åŖČåŁāāAŦāAŽāČŇāČqāČšāČŘāČijāČŚéAÿæŁđ



āĆćāĆřāĆzāĆzāŘřěČ;āAĦāČŮāČ■āĆyāĆğāĆřāČĹāČŠěĹ■ăőŽāAŻāĆŇāĂĆ




EXabyte.io; ÅõāČlāČşāĆřāĚĹ

EXabyte.io; ÅõāžŇăĹŇéŽĚ

## 1.2 çñňäYĂăŎŞçŘĚëÍŁćóÛĞUİăAıăĆrăČřăÇęăĈL'èíŁćóÛ

### 1.2.1 ĀČćāČĢāČńä;ĲæĹŖ

Exabyte.ioǻĈŠçŦĩāĐđĀēęǺşçŧŘæŻúǻĈĞăĆijăĈǼåRŮȱ; ŬǻĂǼèĹŁçőŬǻĈćăĈĞăĈñǻ;IJæĹŔǻĀńǻĀď'ǻǻĐđĀēęèłǻÿŌǻĀŮǻĀȱǻǻǻZǻǻ

ãĆzãČnáĆ£ãČďãČŮãĄóèąłçďżèł■ąőŻ

ãAşşãAşşãAğãAŗçįRæZũãĈGãĈijãĈfãĈSãRrèẽŨãNŨãAŻãĈNěZZãAñãĂAãĈẽãĈNãĈĈãĈĈLãĈZãĈñãĈĈãĈAŮãAŮãAŮãĈŮãĈĈlãĈĈşãĈĈEã

Account profileãAŁPreserenceãAŁAccount SettingsãAğèl■åŒZăCŞèaŒNăAĐăAŁãAŁZăĂC

Cell Type	è'şçř
Conventional	ãĈeãĈñãĈĈãĈLãĈZãĈñãĈAãĈÿãĈèĈľçZĐãĈAĈèãĈd'ž
Primitive	ãĈUãĈlãĈĈãĈEãĈĈãĈUãĈZãĈñ

EXabyte.ioÃŁõČłãĈşãĆrăĂL

EXabyte.ioÃAŁăžŃä¿NéZĚ

ǎĈŮǎĈlǎĈĈšǎĈĖǎĈĈǎĈŮǎĈĈzǎĈĈnǎĈlǎĈĈšǎĈĈšǎĈĈZǎĈĈšǎĈŮǎĈĈgǎĈĈlǎĈĈnǎĈĈzǎĈĈnǎĈĈl'æZi'

ãAşSãAşSãAğãArăCŭăČlăčšăČĚăČcăČŮăČzăČňăAőçťŘæŽúæǧNéĂăăAŇăCL'ăĆśăČśăČZăČšăĆůăČǵăČLăČňăČzăČńiiJŁăČęăČŃăČČ

äZŁāŽđāAřāČGāČTāĆřāČnāČLāAőSiāAğēİnæYŎāAŬāA;āAŻāĂĆ

Material designer – EDIT – Use Conventional Cell – CS – A – L – A – A – Z – A – C

[illegible]



EXabyte.ioăĀőăĈľăĈşăĈřăĚĹ

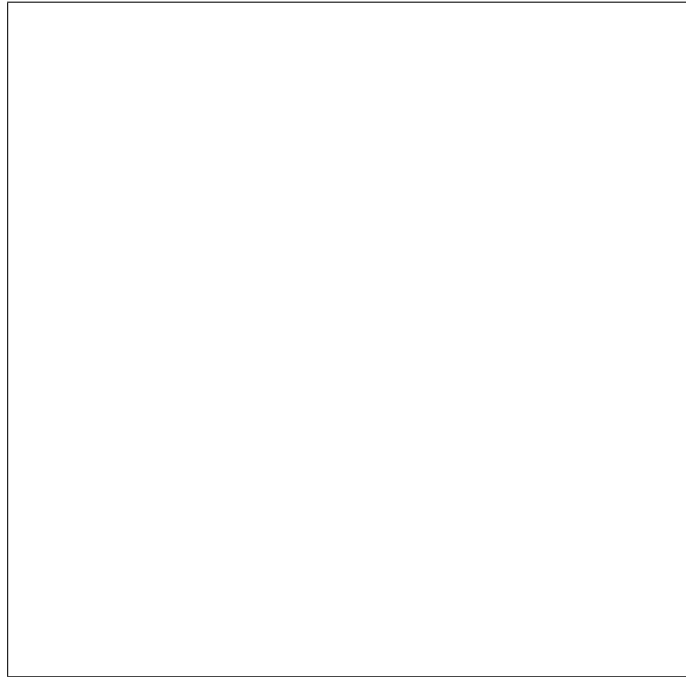
EXabyte.ioăĀőăžŇăĬŇéŽĚ

## Material Projects äĀŇăĈĹ'ċŧŔæŽúăĈĜăĈijăĈĕăŔŮăĬŮ

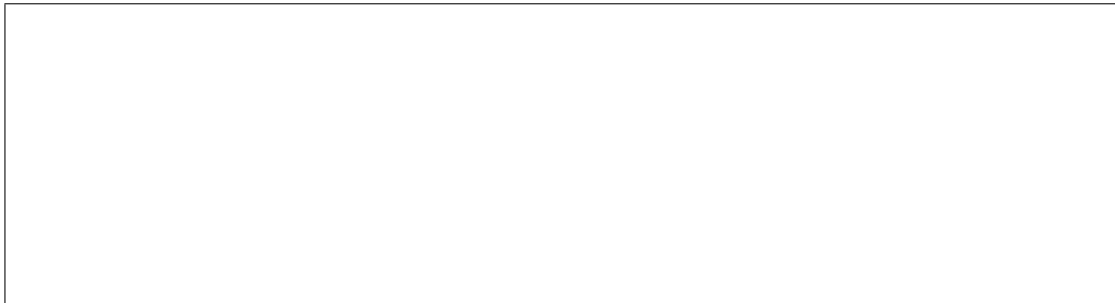
ăĀşăĀşăĀğăĀŕMaterial ProjectsăĀŇăĈĹ'ċŧŔæŽúăĈĜăĈijăĈĕăĈşăŔŮăĬŮăĀŽăĈŇăşăĬĬăĈşĕŋăşŸŎăĀŮăĀăĀŽăĈ

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ăĀăĀŽăĹĹăĈĀăĀŋăĀĀMaterialsăĀőăăĚċŽőăĈşĕĀşăĹďăĀŮăĀăĀŽăĈ

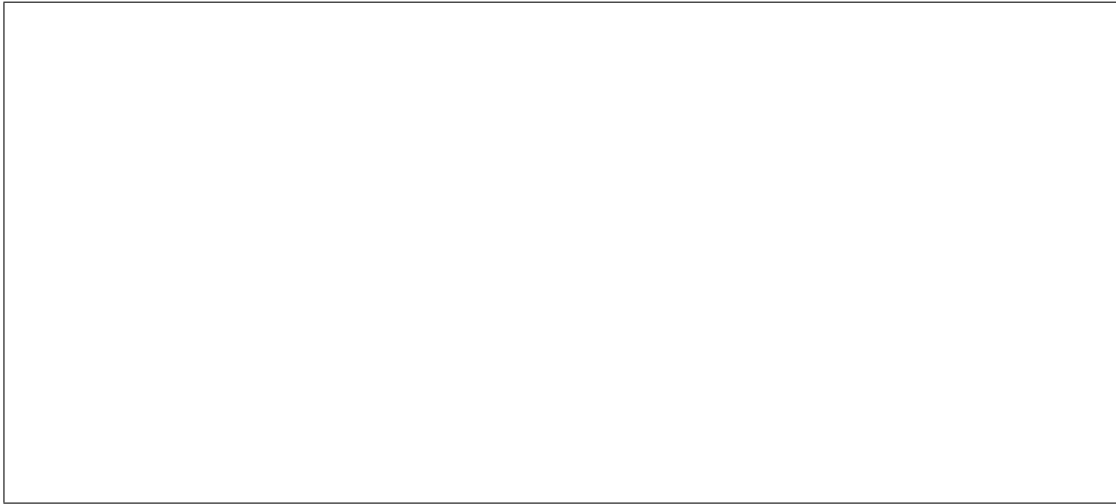


æñqăAńăĂAImportăAőăăĚçZőăČŠéAÿæŁďăAŮăăAŁăăAŽăăĆ



Import MaterilsăAőçŤzéÍcăAŇçRĹăČŇăAşăČŁ'ăĂAăĚČçť'ăelŸăRŭăăČĎæğŇéĂăăijRăČŠăĚăăLŽăăAŽăăČŇăăAĹăăĂAăăĜăăŇŤçŽăăAńMa  
ProjectsăAőăăČĜăăČijăăČĚăăČijăăČZăăAńăăĎ'ăăAĹăăAŮăăĎ'IJçť'ăăAŤăăČŇăăAŁăăăAŽăăĆ

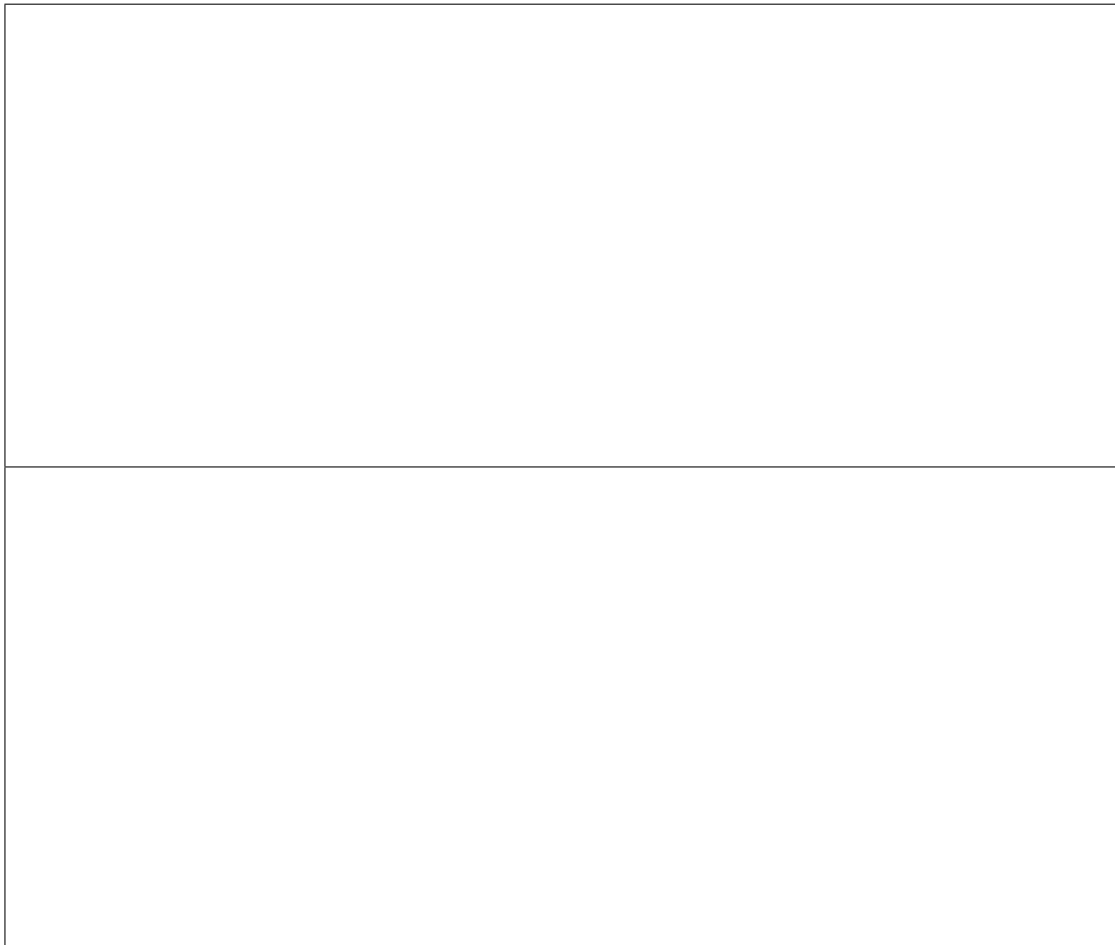




åRŮă; ŮăAŮăAşæğNéĂăăAřăĂAăĂŇăžžăAđMaterialsăAńă£Iă■ŸăAŢăĆŇăAăăAŽăĂĆ



åRŮă; ŮăAŮăAşæğNéĂăăČŚăRřêçŮăŇŮăAŽăĆŇăăť'ăŘĹăAńăAřăĂAêçNăAşăAĐçŢRæŽúéăĚçŽóăČŚéAÿæŁďăĆřăČIăČČăĆřăAğăŘ.



EXabyte.ioăAőăČłăČșăĆrăĖĹ

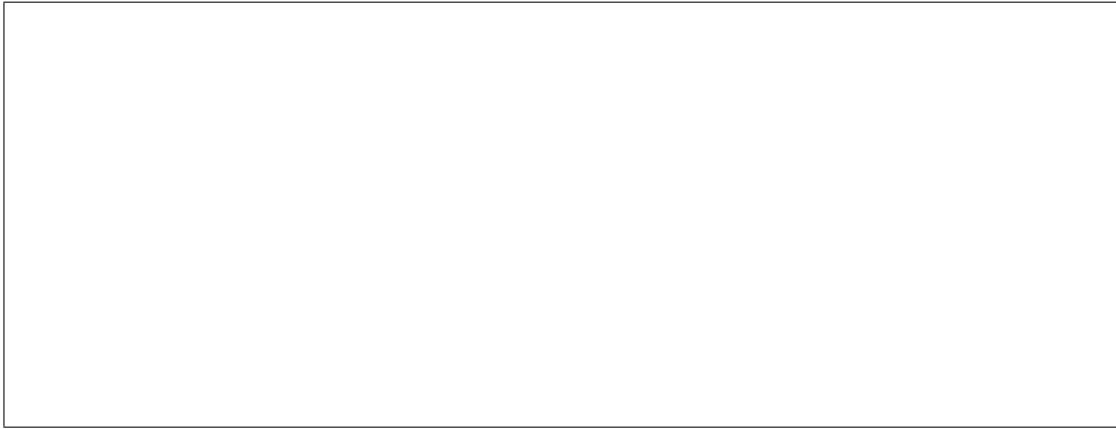
**ăĆzăČijăČŚăČijăČzăČŇăAőă;IJăĹŖ**

ăAșăAșăAğăAřăĆzăČijăČŚăČijăČzăČŇăAőă;IJăĹŖăŮzășŤăĆȘăĥăŸŎăAŮăA;ăAŽăĂĆ

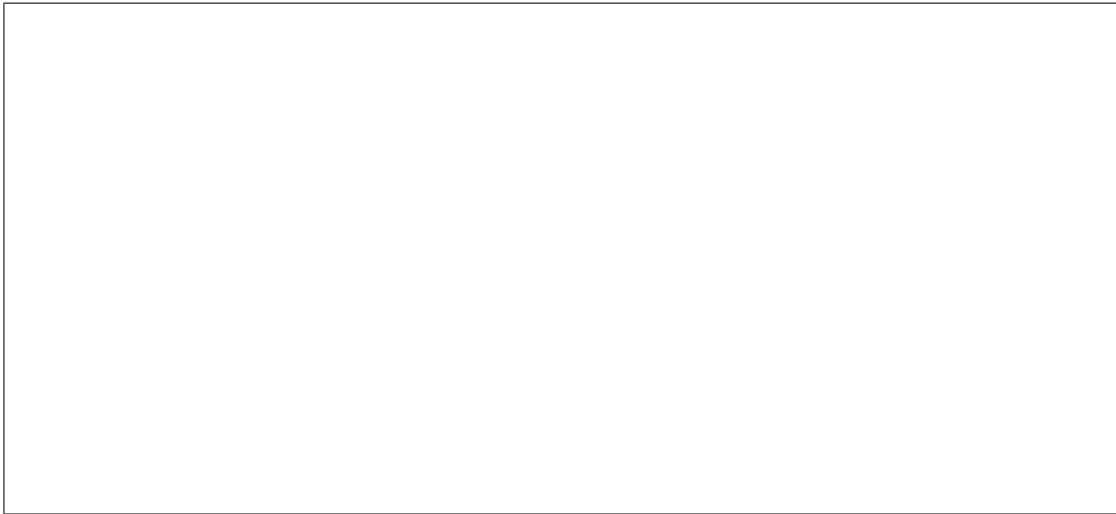
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ăA;ăAŽăĹĹăĈăAăAăĂăMaterialsăAőăăĖçŽăăĆŚăAÿăĽăăAŮăĂăĖİăăĐĭjŇăČIJăĆĽăČșăĆŚăĽijăAŮăA;ăAŽăĂĆ

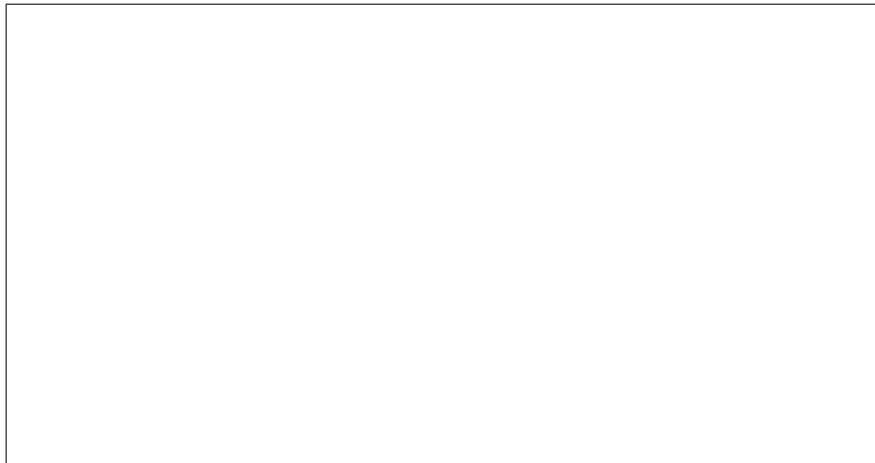




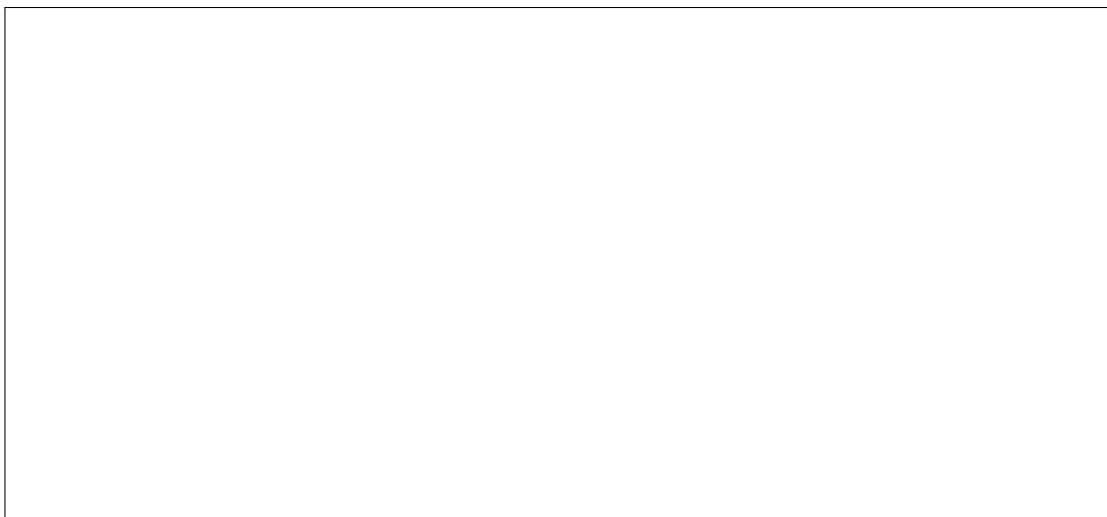
āĆzāČijāČŚāČijāČzāČńāAñāAŮāAšāAĐçŦRæŽűæğNéĂăăĆŠimportāAŮāAşâŦNăĂAăĂŦADVANCEDăĂ■āAőăĂŦSupercellăĂ■āĆŠ



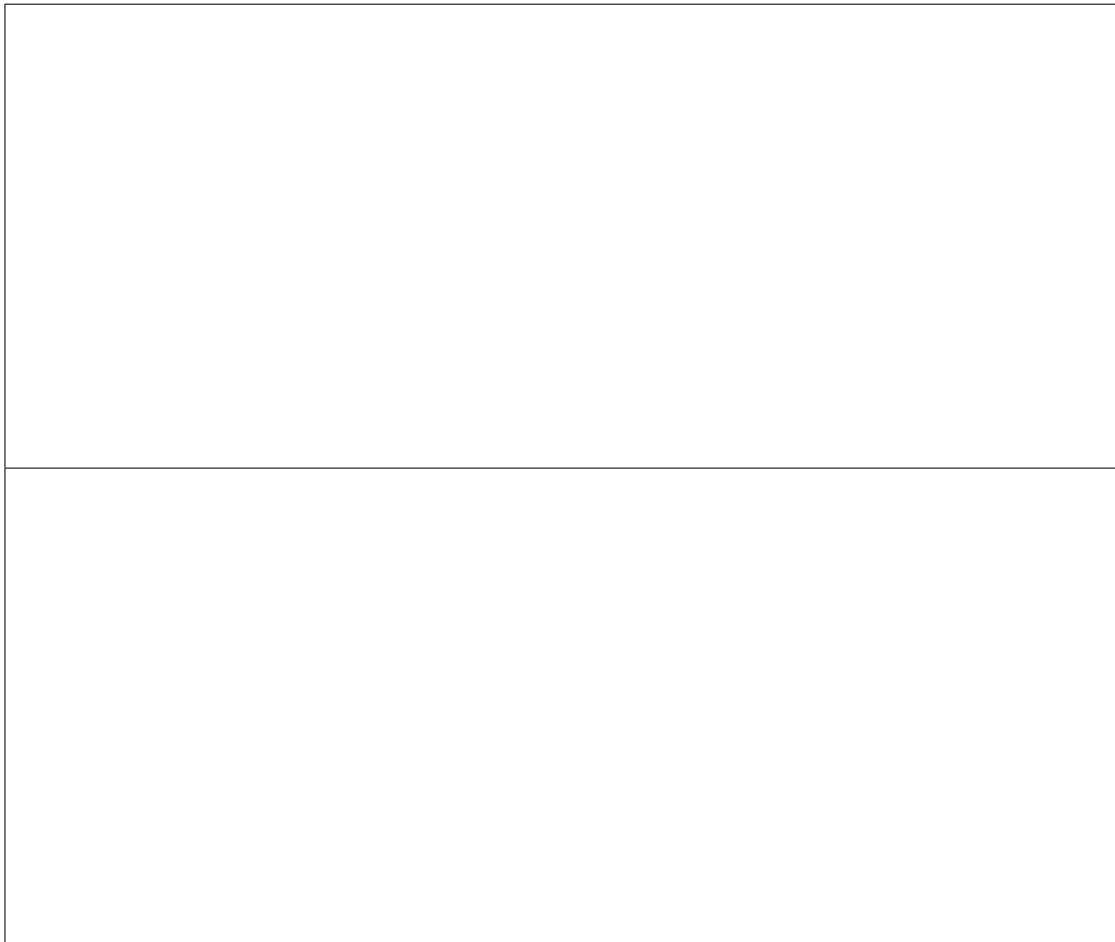
äÿNèÍŸāAőāČĹāAĚāAŦāČzāČijāČŚāČijāČzāČńä;IJæŁŦŕçŦíāAőāČęāČćāČşāČĹ'āČęāAŦŕçŦ;āČŇāAŦāAZāĂĆāŚăāAŦXæŮzāŦŚāĂAăŚ



ăĚăĹZăAŮăAşăĈzăĈijăĈŚăĈijăĈzăĈňăAŇă;IJăĹŖăAŦăĈŇăAĹăAŻăĂĈăĹŇăAŕiijŞiŦŸiijŞiŦŸiijŞăAŋăĈzăĈijăĈŚăĈijăĈzăĈňăĈŚă;



ăĚİăŸăAŮăAşăĈzăĈijăĈŚăĈijăĈzăĈňăAŕăĂAăĂŇăžžăAŮMaterialsăAŋăİçôăAŦăĈŇăĂAăĈĜăĈŦăĈŕăĈňăĈĹăŖăAğăİăŸăAŮăAĹăAşăéAÿăĹďăAŻăĈŇăAŕăŖėęŮăŇŮăAŻăĈŇăAşăAİăAŇăAğăAăAĹăAŻăĂĈ

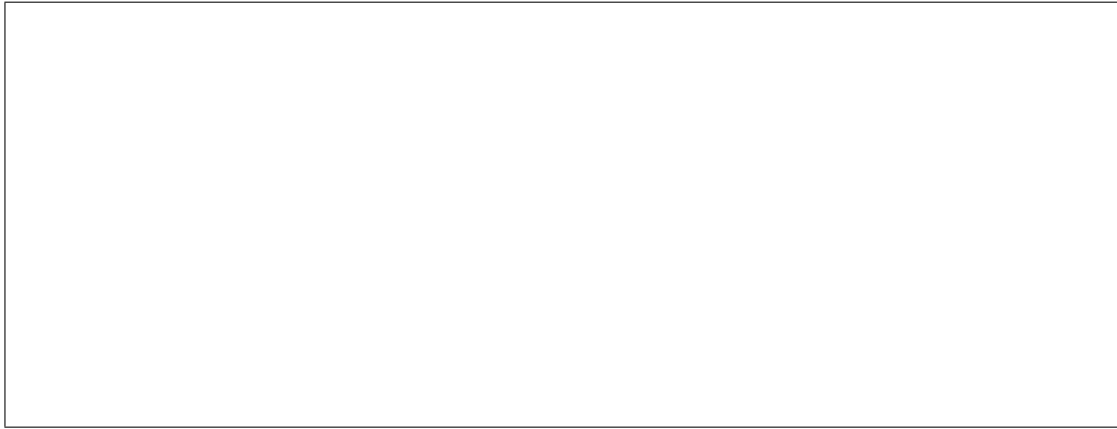


EXabyte.ioāAđāČlāČšāĆřāĚĹ

**āĆzāČřāČŮāČćāČĚāČňāAđāJāĚŘ**

āAšāAšāAğāAřāĆzāČřāČŮāČćāČĚāČňāAđāJāĚŘāŮžāšŤāĆŠēĥāēYŎāAŮāAĸāAŽāĂĆ

āAĸāAŽāĹāĹāĆAāAňāĂAMaterialsāAđēāĚϚZōāĆŠēAÿāŁďāAŮāĂAēİŠāAĐījŇāČIĴāĆĤāČšāĆŠēLijāAŮāAĸāAŽāĂĆ

[illegible]

äyNeÍYãAõãÁLãAÆãAãCãZãCÍ'ãCŨãCãCãCãGãCãNã;IJæLŘÇTÍlãAõãCẽãCãCãCșãCÍ'ãCẽãAŃçRĭãCŃãAĭãAãZãÁC



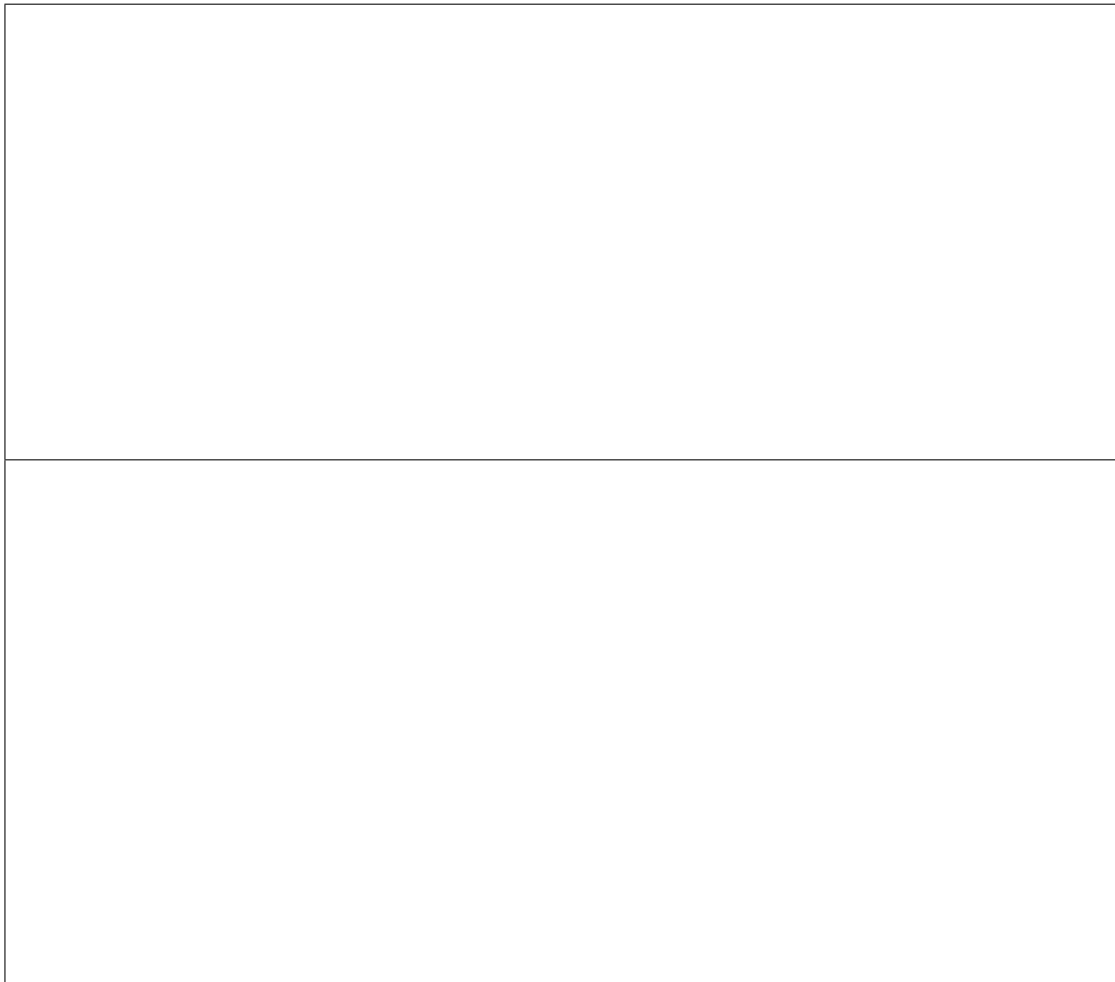
éăĚçŽǒ	è!şçŦř
Miller h	ăĈşăĈŦ'ăĈijăŇĜăŦřhăĂőăĂď'
Miller k	ăĈşăĈŦ'ăĈijăŇĜăŦřkăĂőăĂď'
Miller l	ăĈşăĈŦ'ăĈijăŇĜăŦřlăĂőăĂď'
Thickness in layers	ăĈzăĈŦ'ăĈŮăĂőăŌžăĂŦ
Vacuum ratio	çIJşçŦ'žăşď'ăĂőă■ăăĈĂăĈŇăĽ'săŦĹ
Spercell dimension X	XăŮzăŦŦŦăĂőăĈzăĈŦ'ăĈŮăĂőăď'ğăĂ■ăĂŦ
Spercell dimension Y	YăŮzăŦŦŦăĂőăĈzăĈŦ'ăĈŮăĂőăď'ğăĂ■ăĂŦ

ăŷŇèĹŶăĂőăĈĹăĂĚăĂŋăĂĂŦ111éİçèăŦéİçăĂĂăĈzăĈŦ'ăĈŮăşď'ăĂŦ3ăşď'ăĂĂçIJşçŦ'žăşď'ăĂőăĽ'săŦĹăĈŦ0.4ăĂĂxăŮzăŦŦŦăĂőăĈĹăĂş



ǎĖēāŁŻãAŮăAşæČĚāsăCŠaşžzAňáĂAãĆżăĆřăČŮăĆcăČGăČňăCŠă;JxêĹŘăAŮăAŁăAŽăĂĆ

æİİa■YāAŪāAŞşāCzāĈr'āĈŪāĈcāĈGāĈñāAřāĀAāĀNāzžāAōMaterialsāAñāİçōaāAŦāĈNāĀAāĈGāĈŦāĈr'āĈñāĈĬLāŘ■āAğāİİa■YāAŦāAŦāAŞşÉYāæŁdāAŽāĈNāAřāRřēēŪāNŪāAŽāĈNāAŞşAİāAŦāNāAğāAŦ■āAŦāAŽāĈĈ

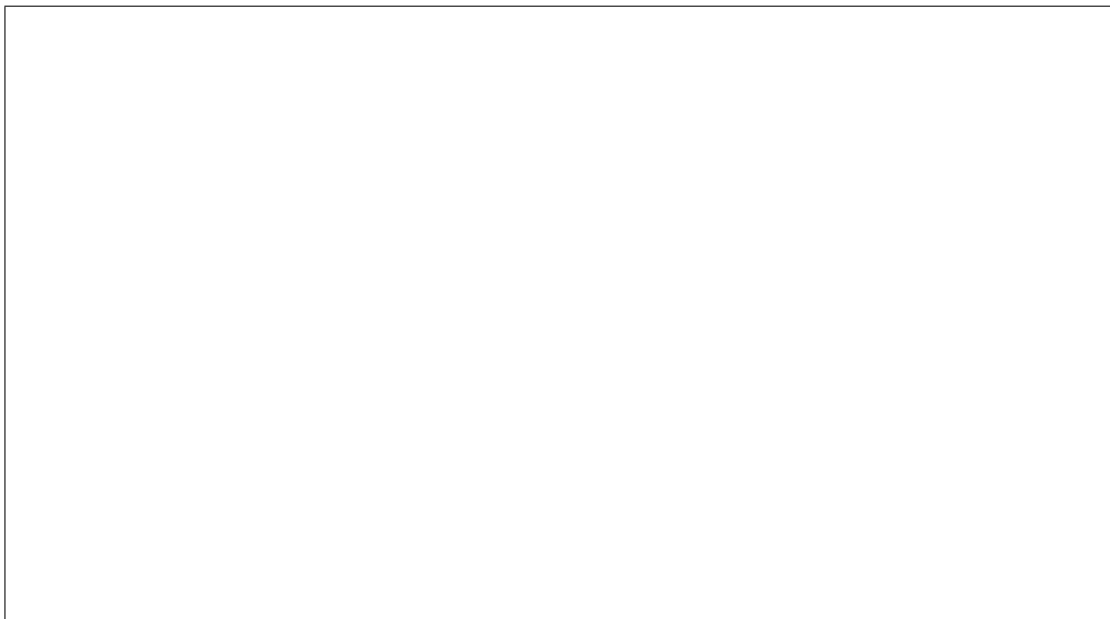


EXabyte.ioāAđāČlāČşāĆrāĚĹ

ϙIJşϙŦžéāŸāşşāAóād'L'æŽŦ'

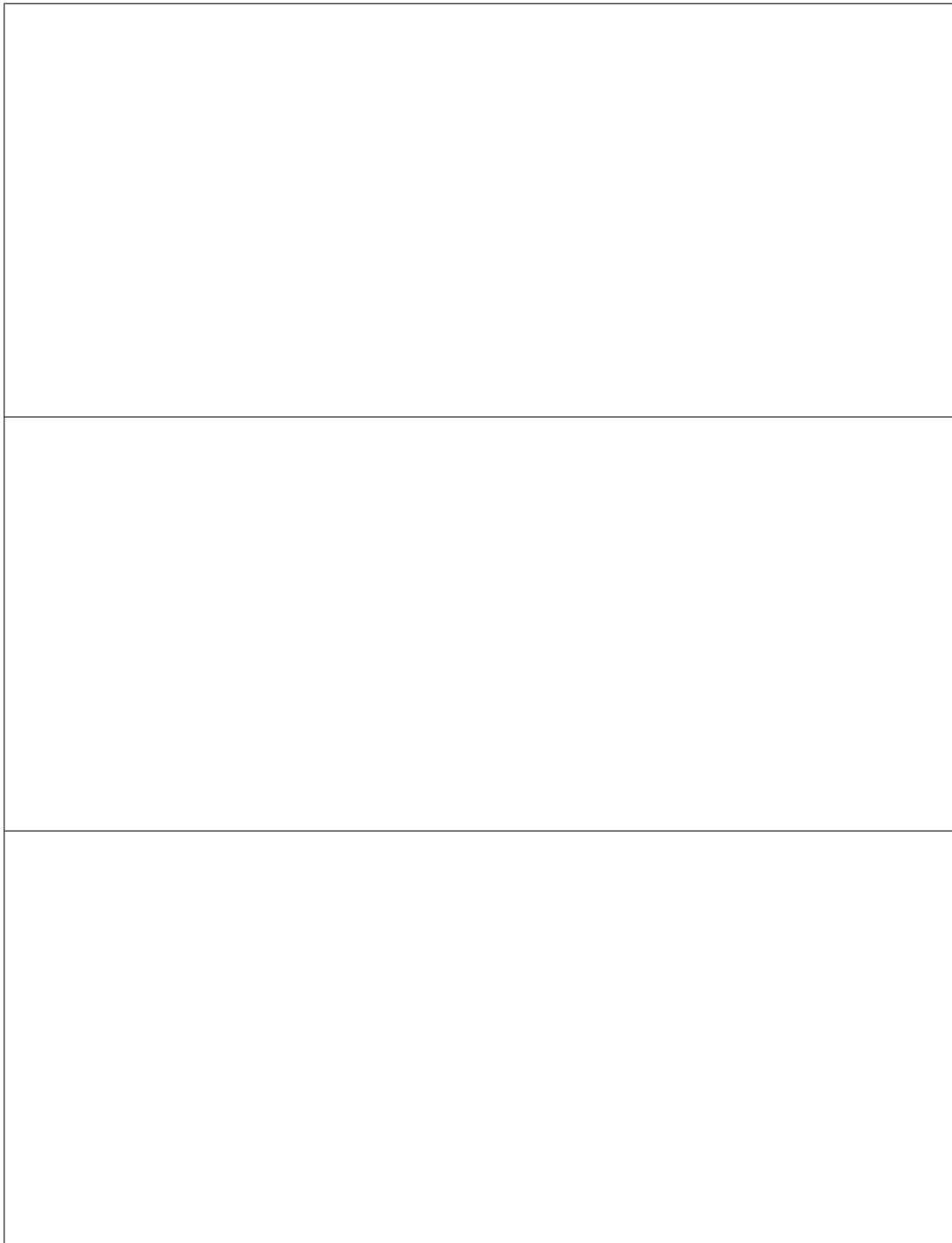
āAşşāAşşāAğāAřāIJèç;āAŮāAşşāĆzāČŦ'āČŮāČćāČĚāČŇāAóçIJşϙŦ'žéāŸāşşāĆŠād'L'æŽŦ'āAŽāČŇāæŮzæşŦāČŠèĥāŸŎāAŮāAĹāAŽāA

āĆzāČŦ'āČŮāČćāČĚāČŇāel'şèČ;āĆŠäĭāAĐāĀAāČćāČĚāČŇāĆŠäIJèç;āAŮāAĹāAŽāĀĆ

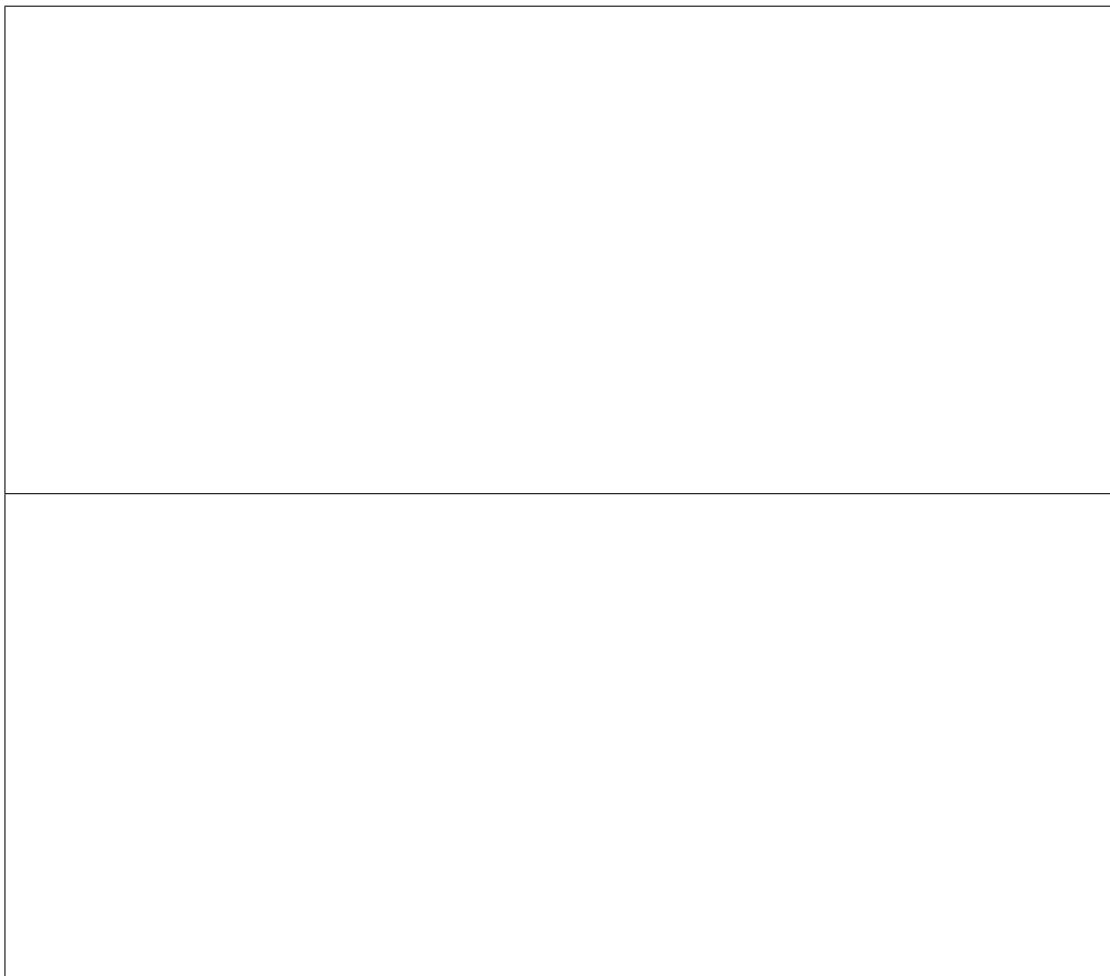


lăĂăžgæÍZçşzăĆšăĂŃCartesian UnitsăĂăĂăăAŭăĂăăžgæÍZăĆšăĈTăCjjaŬăĂęăŁăĂăăĂăăZăĂĆ

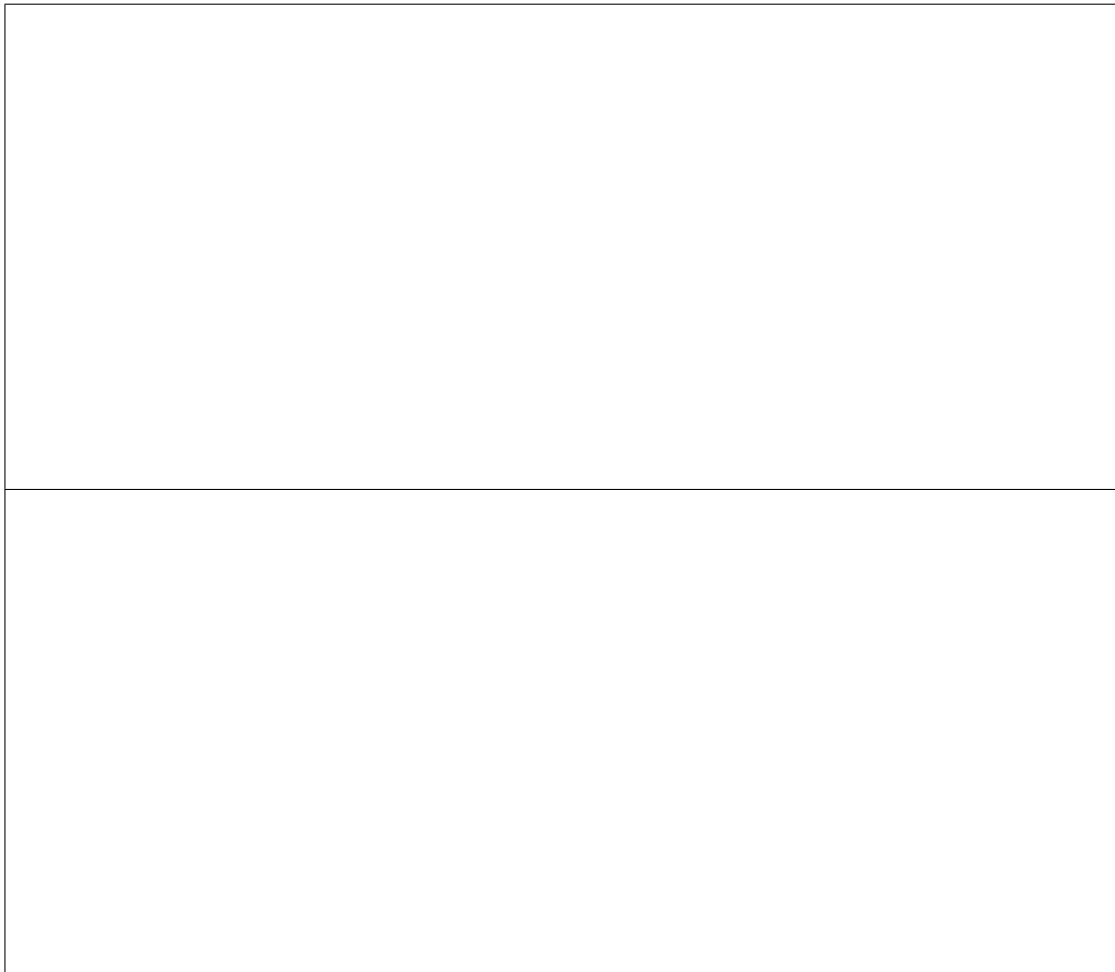




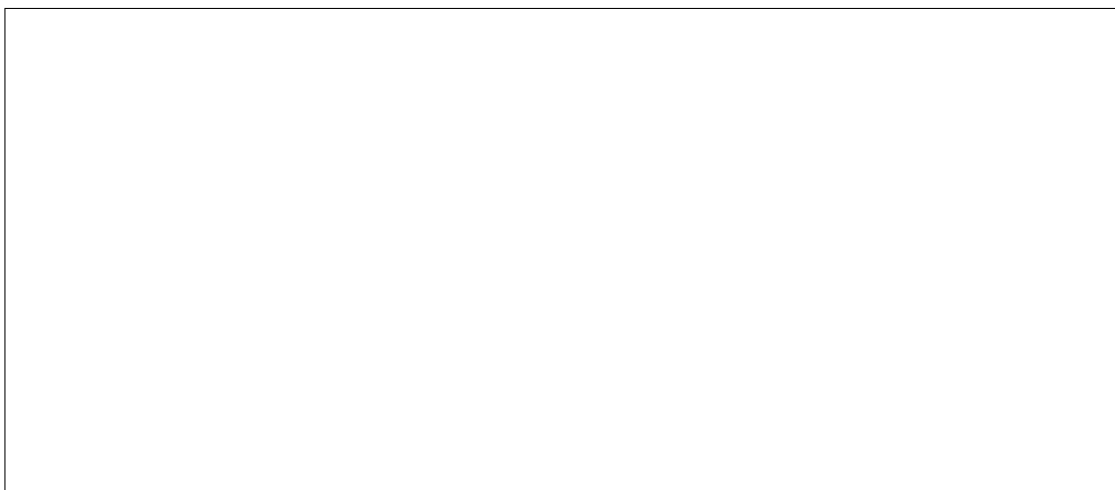
æñqăAñăĂAăČęăČijăČűăAŇėí■ăóŽăAŮăAşăAĎçIJşçŕ'žéăŸăşşăČŠăĚăăLŽăAŮăĂAăČzăČňăAñéAŕăăŁIJăAŤăAŽăAŁăAŻăĂĆ



ãĈzãĈňăĈŝăd'L'æŽt'ãĀŽăĈŇăĀĴăĂĀCrystal Unit-  
săžgæĴŹçşzãĀőăĀşăĈĀăĂĀăŎşă■Ŕă■ç;őăĀŇăd'L'æŽt'ãĀňăĀĴăĈĹăĀĴ;ãĀŽăĀŇăĂĀăžŇăL'■ăĀňăĈşăĈŤăĈijăĀŮăĀęăĀĹăĀĎăĀŖă  
ăžgæĴZăĈŝëijăĈĹăžŸăĀŖăĈŇăĀŖăăĴăĀğæ■čăĀŮăĀĎăžgæĴZăĀňăĀĴăĈĹăĀĴ;ãĀŽăĂĈ



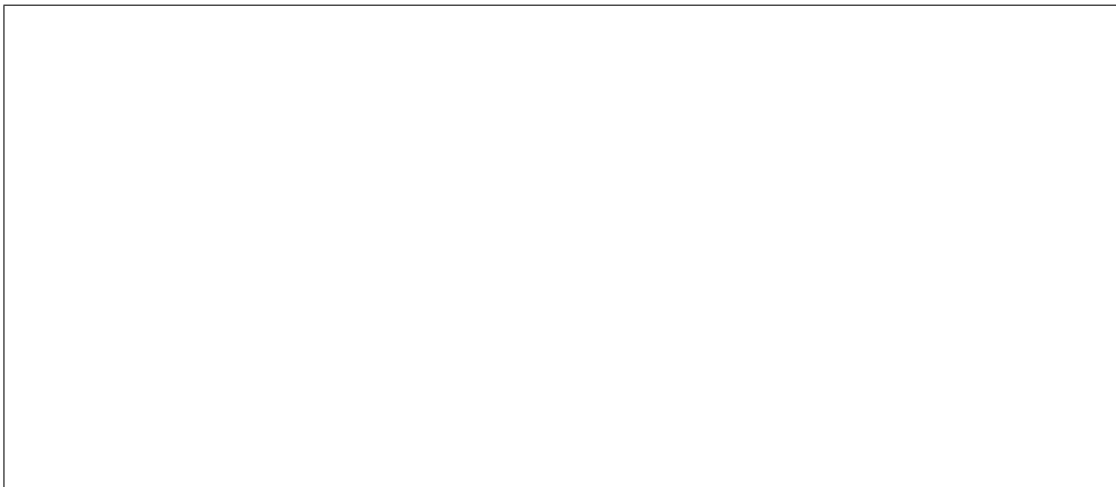
ăČęăČijăĆűăĂŃăŇĞăőŽăĂŮăĂșçIJșçl'žéăŸășșăČćăČĞăČńăĂńăđ' L'æŽt'ăĂŦăĆŇăĂĹăĂŽăĂĆ







èąŇăĀĺăĀďăĀşăĀďĕĺĹćőŰăĀőworkflowăĈşăĕď'ĬĴćť'ćăĀŰăĀĹăĀĹăĀĈăĀşăĀşăĀşăĀğăĀřăĀăĀęŇĕĀăĀĬĀĕĀĬăĤŰăĀĹăĀĈŇăĀşăĀĈĀă  
ăĬĬĀĕĹŖĕĀĔăĀŇcuratorsăĀőăĈĈăĀőăĀŇExabyteĕď'ĹăĀŇćŤĺăĎŖăĀŰăĀşăĀĈăĀőăĀğăĀĹăĀĈCopyăĀĺăĀĹăĀĈŇăĀşăĀĬăĀğăĀĀĕ



2019ăŹť'7ăĬĹćŖĹăĬĬăĀğăĀăăŸŇĕĺŸăĀőworkflowăĀŇăĬ;ŁćŤĺăŖĕĈĬăĀŇăĀĺăĀĈăĀęăĀďăĀĹăĀĹăĀĈ

workflowāŘ■	è'šçťř
Total Energy	āČlāČ■āČňāČōāČijēl'ĹčŏŮ
Fixed-cell Relaxation	æĝŇéĀāæIJĀéAĴ'āŇŮ
Variable-cell Relaxation	āČzāČŇæIJĀéAĴ'āŇŮ
Band Structure	āČŘāČšāČĹ'æĝŇéĀā
Band Structure - HSE	āČŘāČšāČĹ'æĝŇéĀāāĀHSE
Band Gap	āČŘāČšāČĹ'āČōāČčāČčāČŮ
Band Gap + DoS - HSE	āČŘāČšāČĹ'āČōāČčāČčāČŮāĀAçĹúæĚŇāřĚāžēāĀHSE
Plasmon-Pole GW Band Structure + Band Gap	Plasmon-PoleēŠäijijāĀĀGWāĀĀāAōāČŘāČšāČĹ'æĝŇéĀāāĀāČŘāČšā
Full Frequency GW Band Structure + Band Gap	GWāĀĀāAōāČŘāČšāČĹ'æĝŇéĀāāĀāČŘāČšāČĹ'āČōāČčāČčāČŮ
Density of States	çĹúæĚŇāřĚāžēāĀDOS
Band Structure + Density of States	āČŘāČšāČĹ'æĝŇéĀāāĀIDOS
Electronic Density Mesh	éŽzā■ŘāřĚāžēāŽš
Phonon Density of States	āČŤāČĴ'āČŌāČšçĹúæĚŇāřĚāžē
Phonon Density of States + Dispersions	āČŤāČĴ'āČŌāČšçĹúæĚŇāřĚāžēāĴlāĹæŤč
Zero Point Energy	āČijāČ■çČzāČlāČ■āČňāČōāČij
Surface Energy	èq'éléčāČlāČ■āČňāČōāČij
Effective Screening Medium (ESM)	ESMæšŤāAğāAōlçČžēl'ĹčŏŮ
Effective Screening Medium (ESM) Relax	ESMæšŤäyŇāAğāAōæĝŇéĀāæIJĀéAĴ'āŇŮ
Nudged Elastic Band (NEB)	āŘ■āŤIJçŤŇèûrēl'ĹčŏŮāĀĀNEBēl'ĹčŏŮ
ML: Train Model	æ' šæçřā■ççŠāČčāČčāČčāČňā;IJæĹŘ

āČŘāČijāČřāČŤāČ■āČijāAōā;IJæĹŘ

āAšāAšāAğāAřçŇñēĜlāAğworkflowāČšā;IJæĹŘāZāČŇæŮzæšŤāČšçť'žāzŇāAŮāAçāAžāĀČ

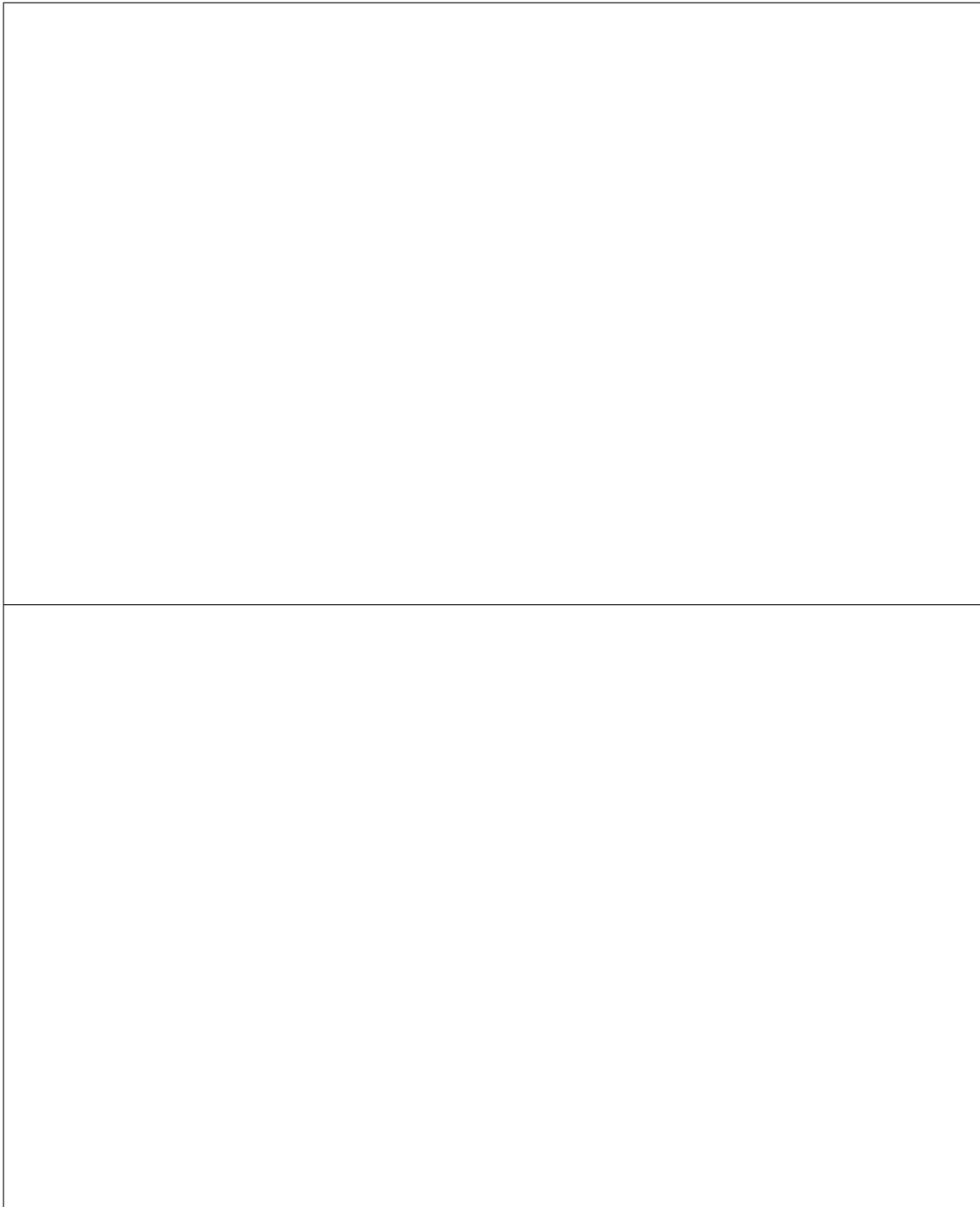
### 1.2.3 çňňäyĀāŌšçŘĚēl'ĹčŏŮ (QuantumESPRESSO)

æŠňāČlāČĚāČšāČuāČčāČňāAōèç;āĽā

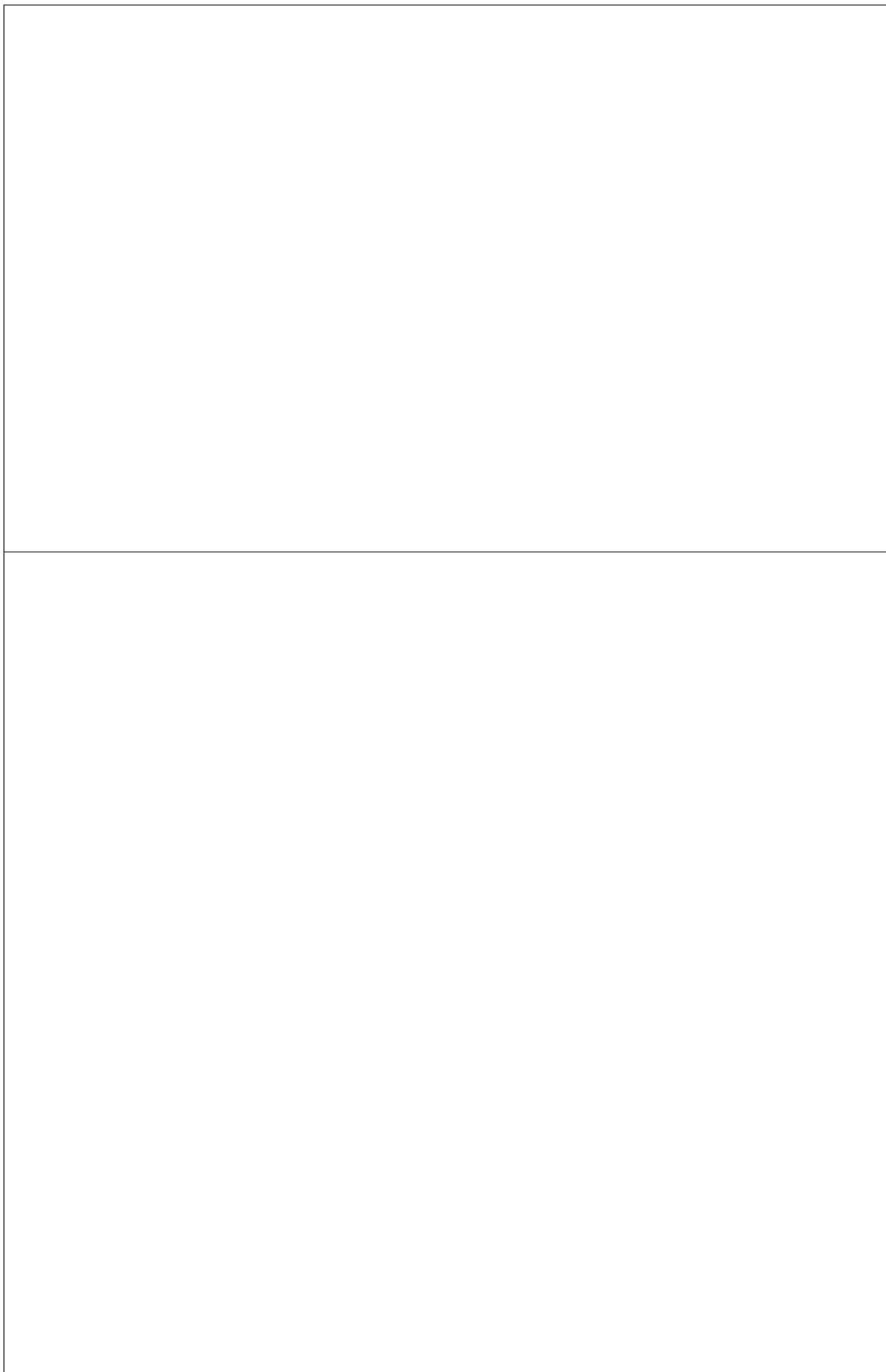
Exabyte.ioāAñēl'■āōŽāAŤāČŇāAçāAďāAĴāAďē■ŘāČlāČĚāČšāČuāČčāČčāČšā;ΕξŤlāAžāČŇāāt'āŘĹāAñāAď'āAďāAçēl'mæŸŌāAŮāA

ä;IJæĹŘäy■āAōāČyāČğāČŮāAŇāČĹ'æŠňāČlāČĚāČšāČuāČčāČčāČňāČšēç;āĽā

āČyāČğāČŮä;IJæĹŘäy■āAñExabyte.ioāAñēl'■āōŽāAŤāČŇāAçāAďāAĴāAďæŠňāČlāČĚāČšāČuāČčāČčāČňāČšēç;āĽāāAžāČŇāAñāAřāĀ



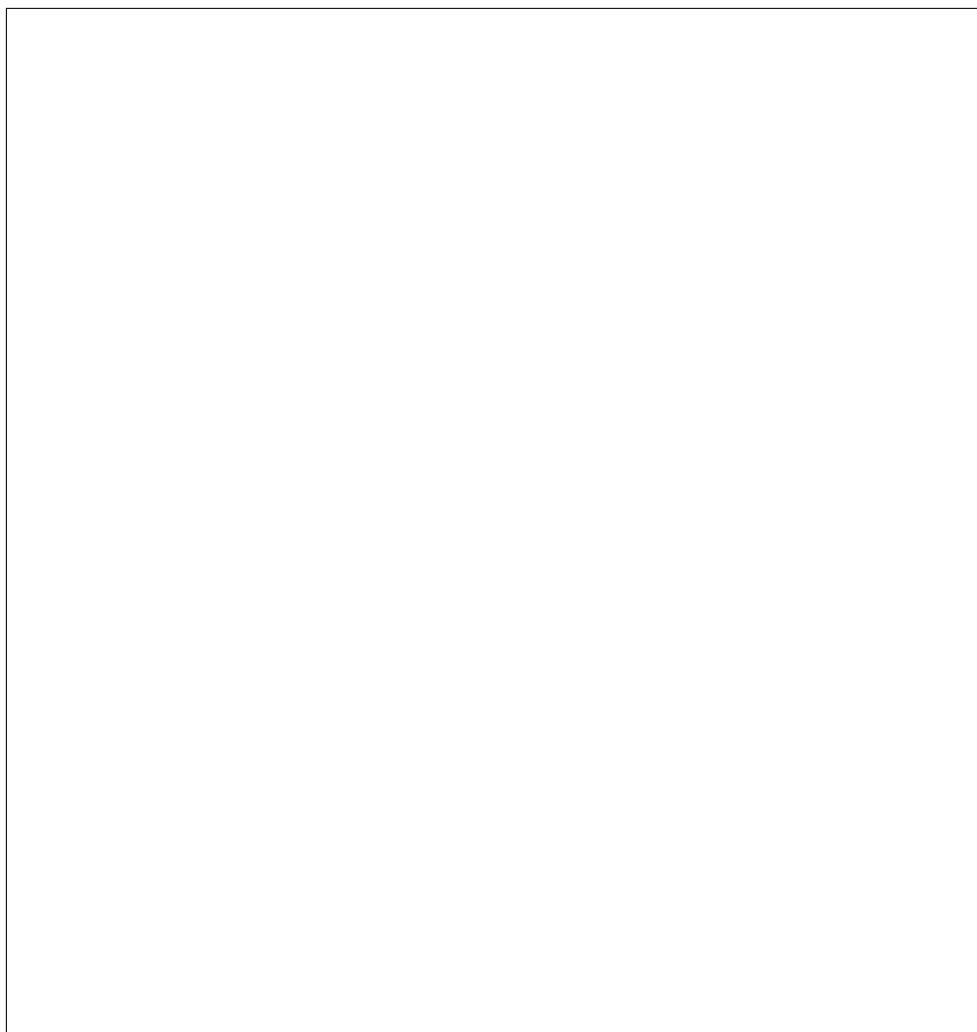
āĆćāČĆāČŮāČ■āČijāČĹ'āAŽāČŇæŞñāČíāČĚāČşāČűāČčāČńāAŮæČĚāāśāČŚèí■āóŽāAŽāČŇŕŤzéíćāAŇŕĹ;āČŇāAĹ;āAŽāĂĆ



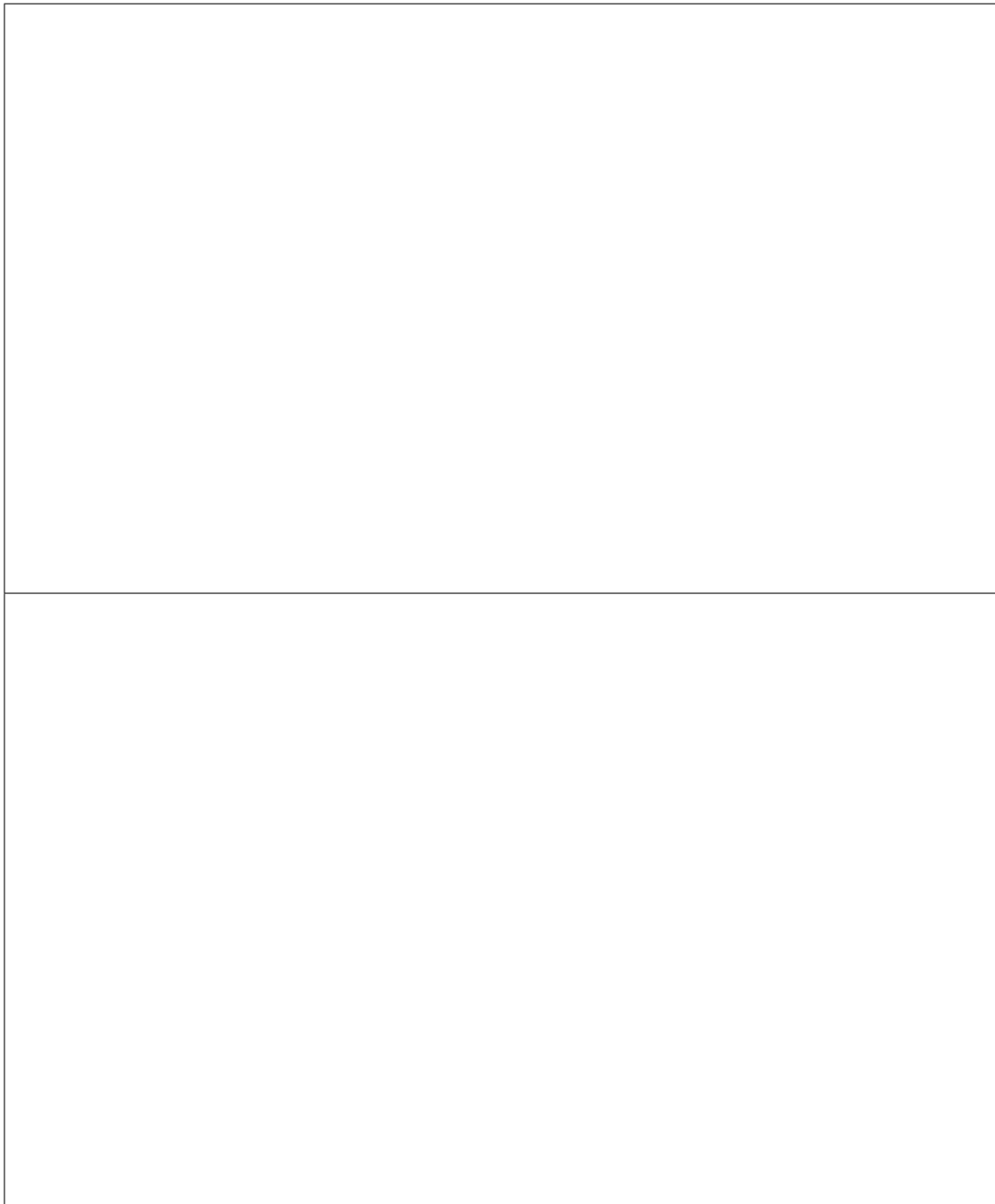


workflowăŘ■	è'şçťř
Element	ăĚĈçť'ă
Approximation	GGAăĂĂLDAăĂĂOtherăĂŇăĈL'éAÿæŁđ
Functional	PBEăĂĂPBESOLăĂĂPW91ăĂĂOtherăĂŇăĈL'éAÿæŁđ
Method/Type	PAWăĂĂNCăĂĂUSăĂŇăĈL'éAÿæŁđ
Application	Quntum ESPRESSOăĂĂVASPăĂŇăĈL'éAÿæŁđ

ăĭNăĂĹăĂřăĂĂSiăŎşă■ŘăĂőăĈŎăĈńăĈăăŁă■ŸăđNăĂőăşŇăĈİăĈĖăĈşăĈăăĈăĈńăĈşăĈcăĈĈăĈŮăĈ■ăĈijăĈL'ăĂZăĈNăăť'ăŘĹă



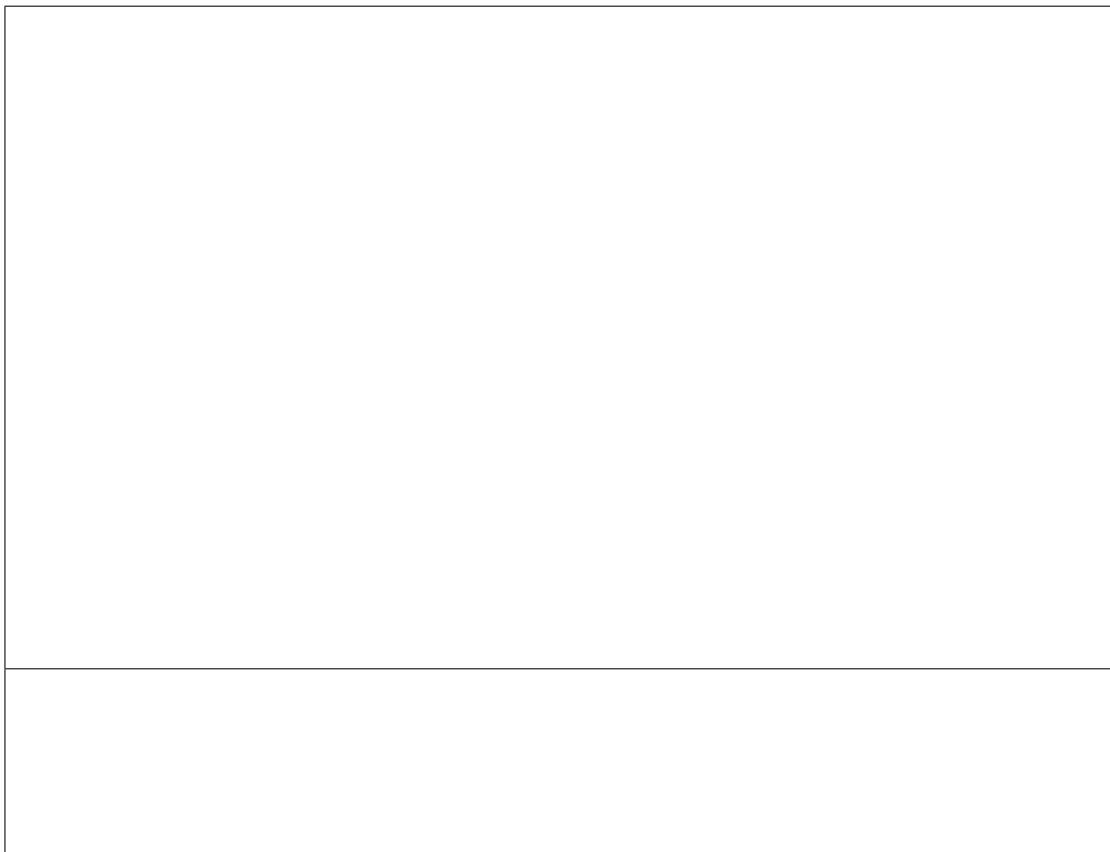
ăĈăăĈĈăĈŮăĈ■ăĈijăĈL'ăĂŮăĂşăşŇăĈİăĈĖăĈşăĈăăĈăĈńăĂŇăĈİăĈzăĈĹăĈİJăĈĈăĈřăĈzăĂñè£;ăĹăăĂŤăĈNăĂĭăĂZăĂĈ



### WorkflowăAŇăĈĹ'æŞŇăĈĩăĈĖăĈşăĈűăĈĉăĈŇăĈŞèĚ;ăĹă

Workflowă;IJæĹŖçŦzéİcăAŇăĈĹ'Exabyte.ioăAŇel■ăôŽăAŦăĈŇăAęăAĎăAĹăAĎăæŞŇăĈĩăĈĖăĈşăĈűăĈĉăĈŇăĈŞèĚ;ăĹăăAŽăĈŇăŰăăAŞăAŞăAğăAŕăĂAŦTotal EnergyăAőăĈŕăĈijăĈŕăĈŦăĈ■ăĈijăAŇăĂASi.pw-mt\_fhi.UPFăĂĂăĈŞèĚ;ăĹăăAŰăAġăAŽăĂĈăAġăăAŽăĹăĈAăAŇăĂAŦTotal EnergyăAőăĈŕăĈijăĈŕăĈŦăĈ■ăĈijăĈŞăĈşăĈŦăĈijăAŰăAġăăAŽăĂĈă





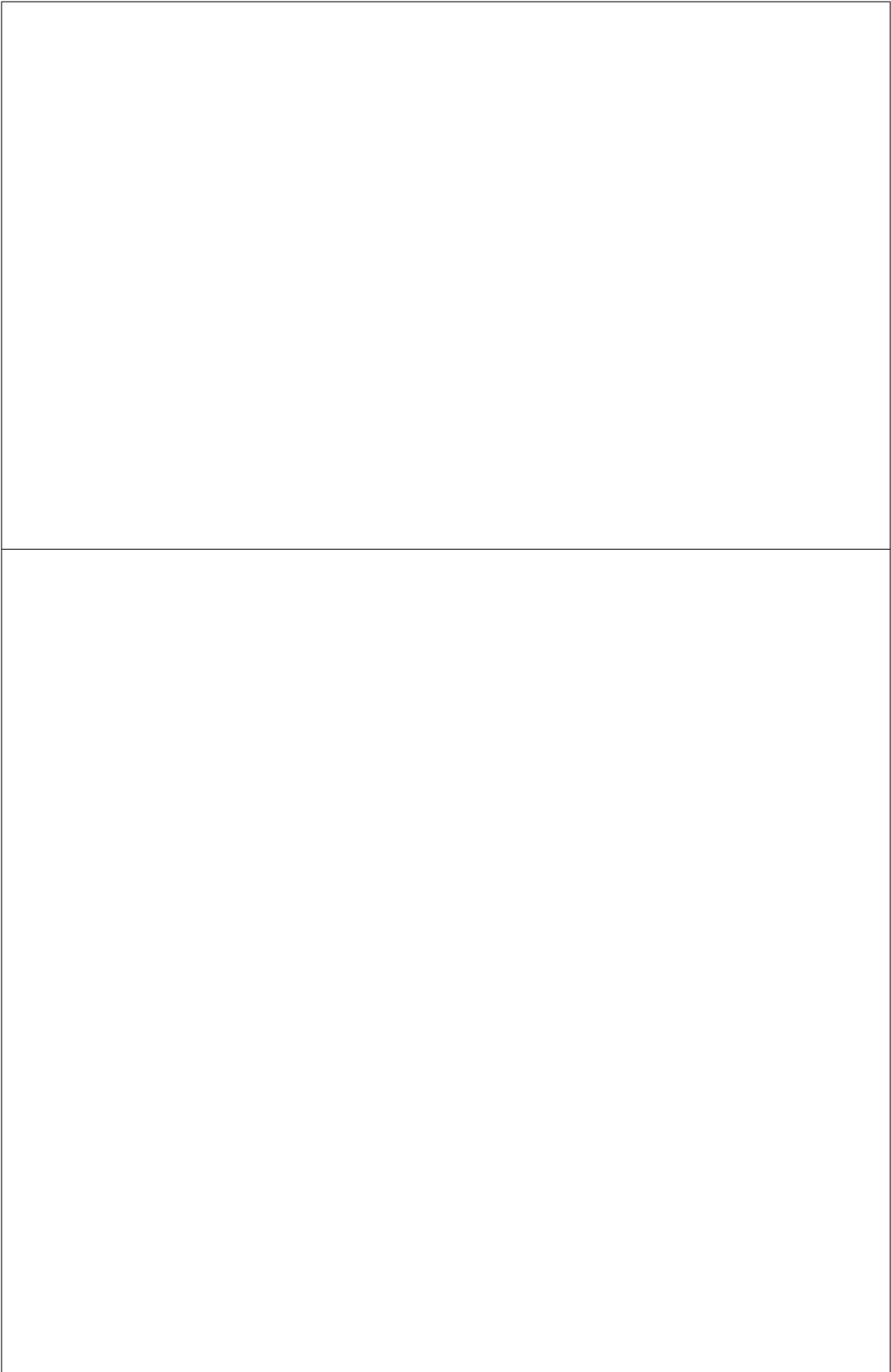
FunctionalăČŠpwăAńėĺ■ăőŽăAŮăAŹăĂĆ



SubtypeăČŠncăAńėĺ■ăőŽăAŮăAŹăĂĆ

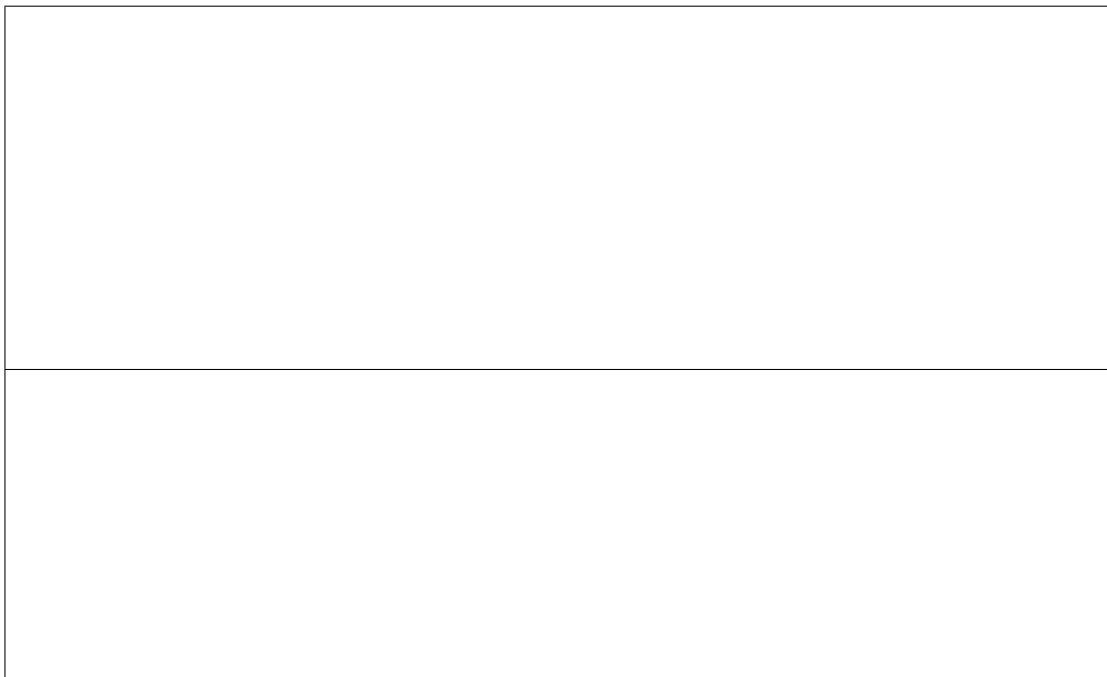


èí■ăŏŽăAŮăAşçŧĈăĈRăĈNăAĭăŷNèĭŸăAŏçŦzéİăAńăAłăĈŁăĂAUploadăĈIJăĈŁăĈşăAŊăĈL'æŞňăĈİăĈEăĈşăĈűăĈăĈńăĈŞăĈćăĈ



éAÿæŁďăĀŹăĈNěŹŹăĂĀèëŃăĈĐăĀŹăĀŖăĀŹăĈŃăĀşşăĈĀăĀŋăĈĚăĈŕăŹŸăĀŞăĀŮăĀĭăĀŹăĈĈTagsăĀŋLĐăĀĬăĚăĚăĹŹăĀŮăĀęă

LDAñAíáĆċăČřäzŸãAŞăAŮăAŞworkflowãAñnáArãĆċăČřãAőænĐãAñLDAñAíéaĺçd'žãAŦĩĆŇňĂĂăĈÿăČğăĈŨü;IjæŁŘăAőëŽZăAñè



èÍŁçõŮæŞ■ä;IJeñæŸŎ

Exabyte.ioäyŁãAğçññäyĂăŎŞçŘĚèÍŁçõŮãČ;ãČŤãČŁQuantum ESPRESSO(QE)ãČŠä;£ãAçãAŞèÍŁçõŮãAñãAd’ãAĎãAęçŤ’zäzNãAŮãA

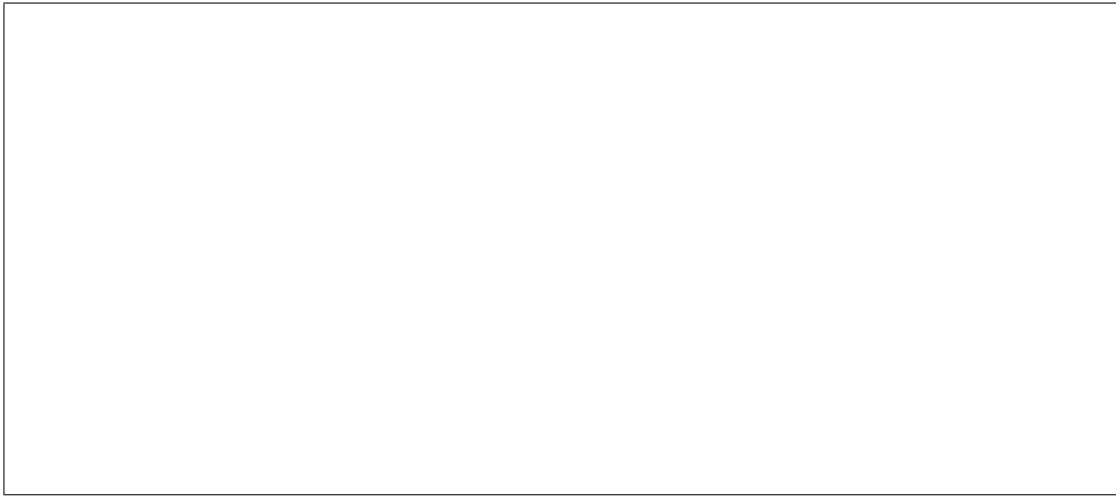
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ãAŞãAŞãAğãAŕQuantum ESPRESSO ãČŠä;£çŤíãAŮãAęãČŁãČijãČ£ãČnãČíãČ■ãČnãČóãČijãČŠèÍŁçõŮæŮzæŞŤãČŠèñæŸŎãAŮãA

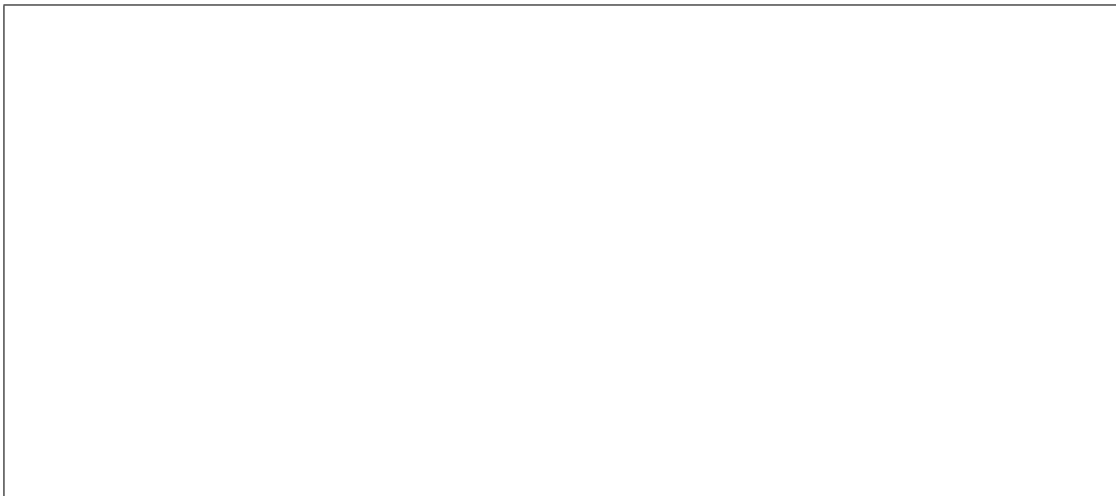
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ãČŁãČijãČ£ãČnãČíãČ■ãČnãČóãČijãAøèÍŁçõŮãAñãAŕãĂAWorkflowãAôãĂiTotal  
EnergyãĂíãČŞçŤíãAĎãAĹãAŽãĂĆ

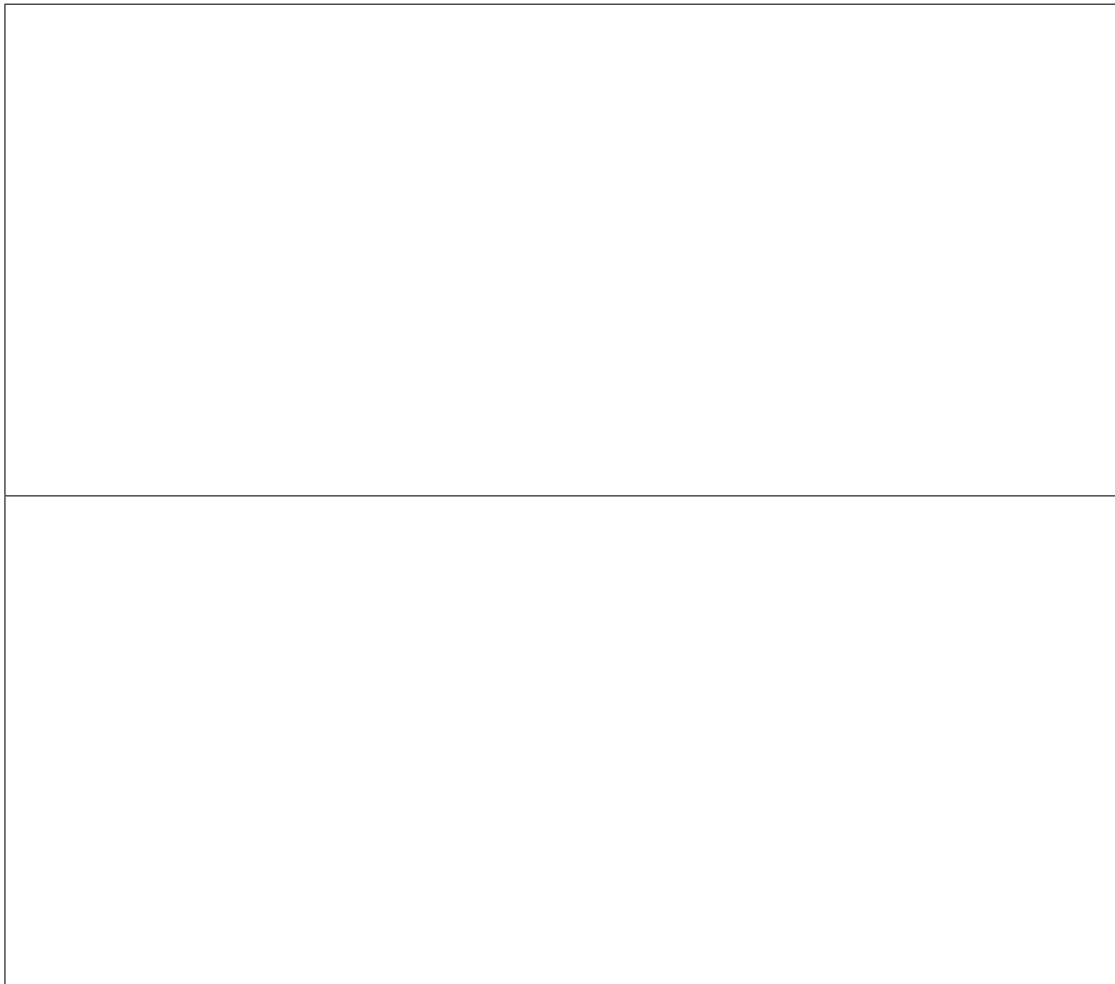




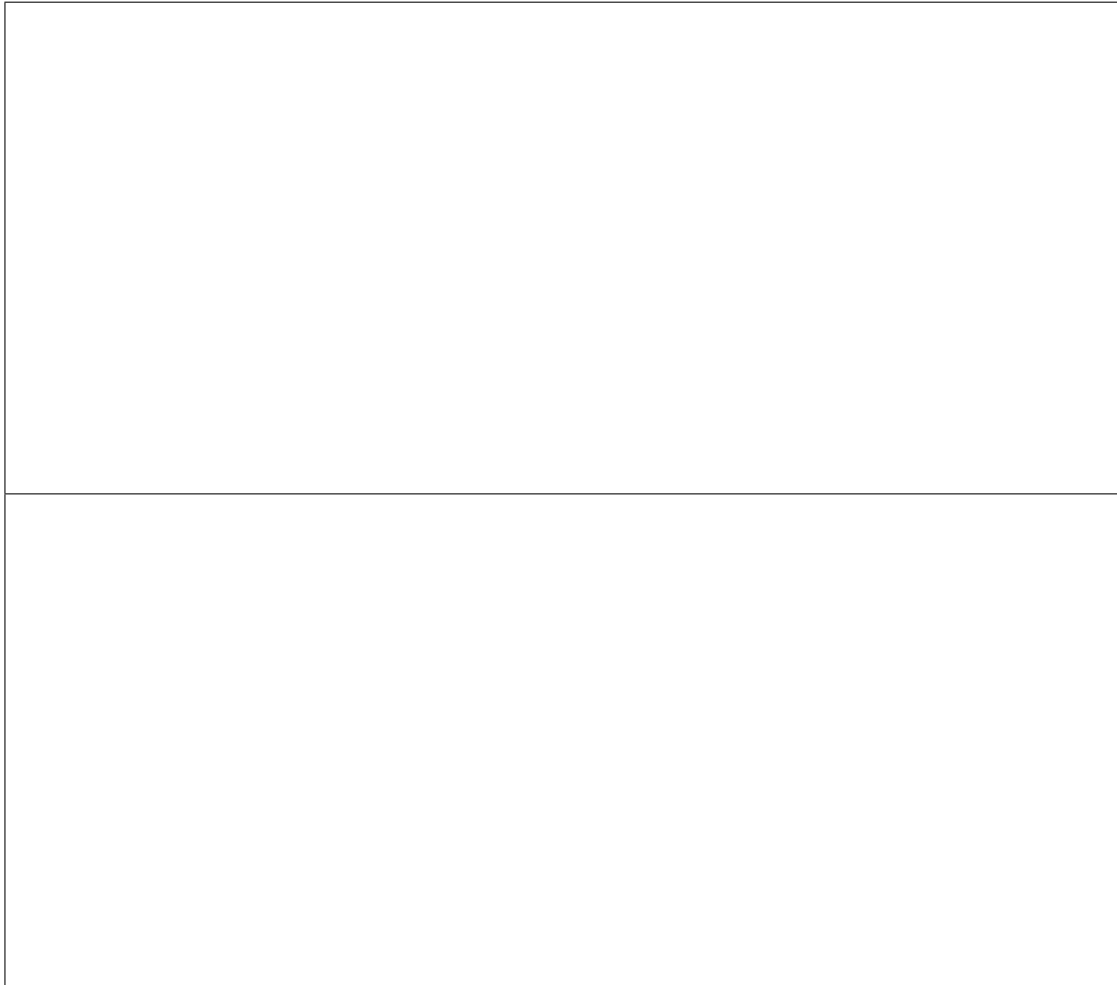
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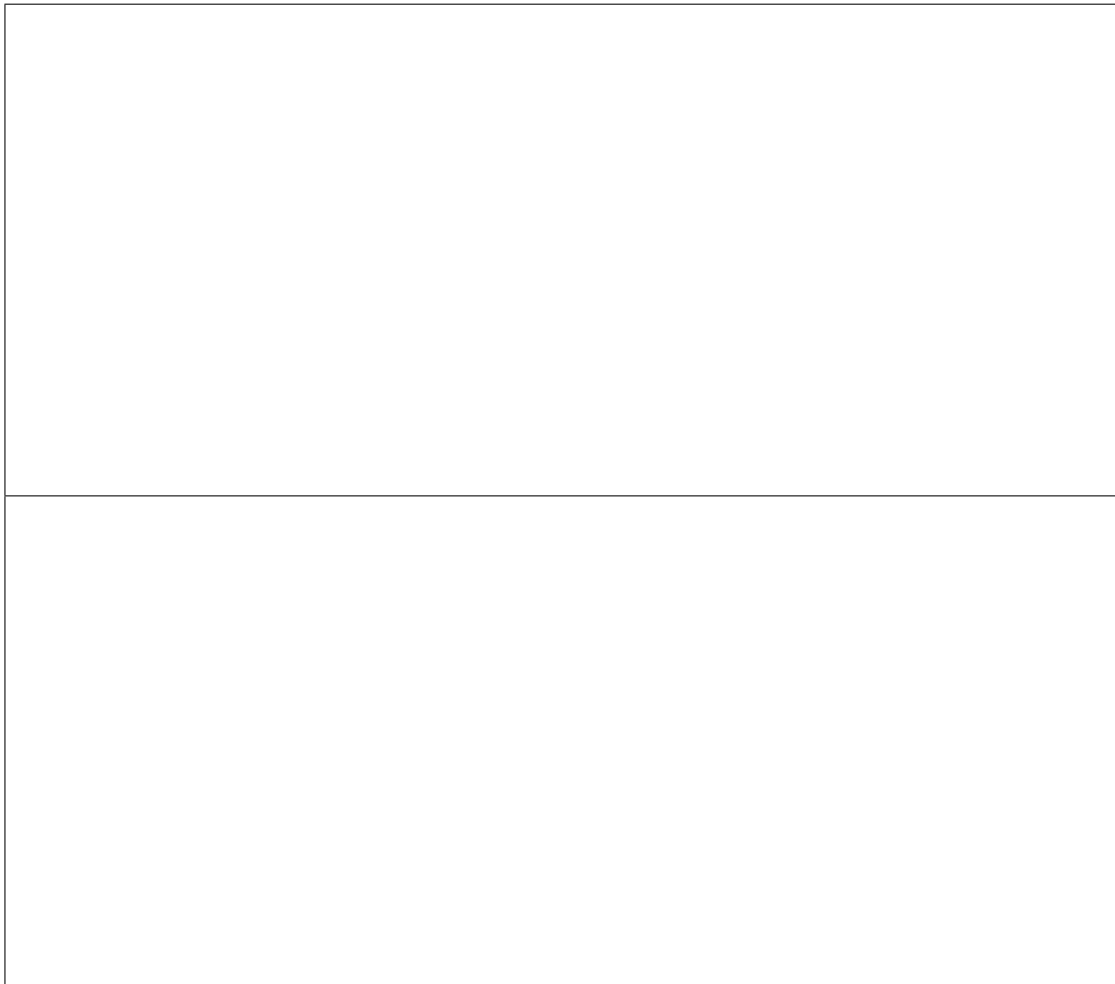
ăĈŷăĈğăĈŮă;IJăĹŔçŦzéĹăAŇçŔġ;ăĈŇăAşăăĈĹ'ăĂAèĹĹçőŮăAŻăăĈŇăăĈđăĈĖăĈĹăăĈćăăĈŇăăĈŚăAŷăăĹđăAŮăAġăAŻăĂĈ



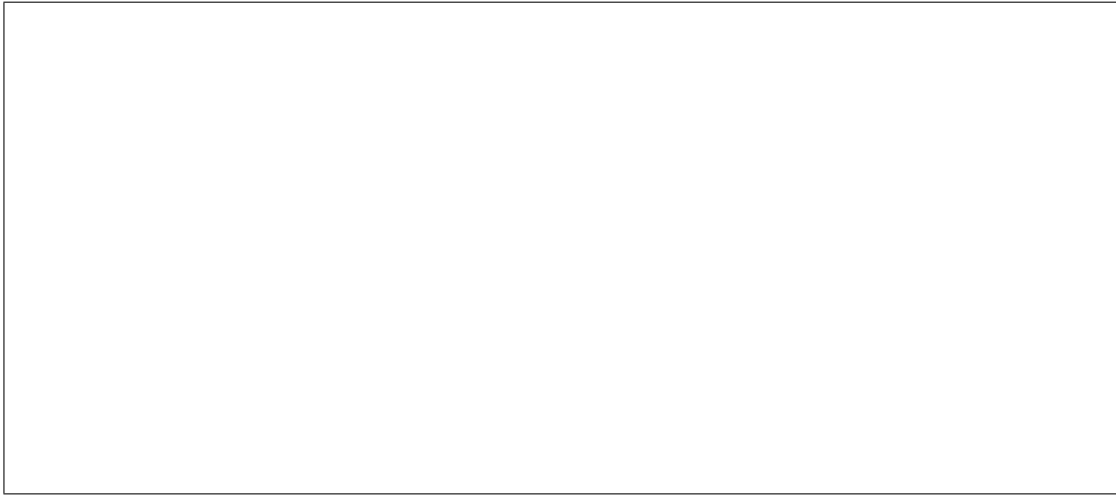
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EnergyāĀİāČŠéAŸæŁďāAŦŦāAŸāAŻāĀĆ  
āČĠāČŦāČİ'āČŋāČĹāAŦŦāĀİTotal  
EnergyāĀİāAŦāAŦāAčāAęāAĎāČŦāāt'āŘĹāAŦāAŕçİAçŦěāAŦŦāAęāAŖāAšāAŦāAĎāĀĆ



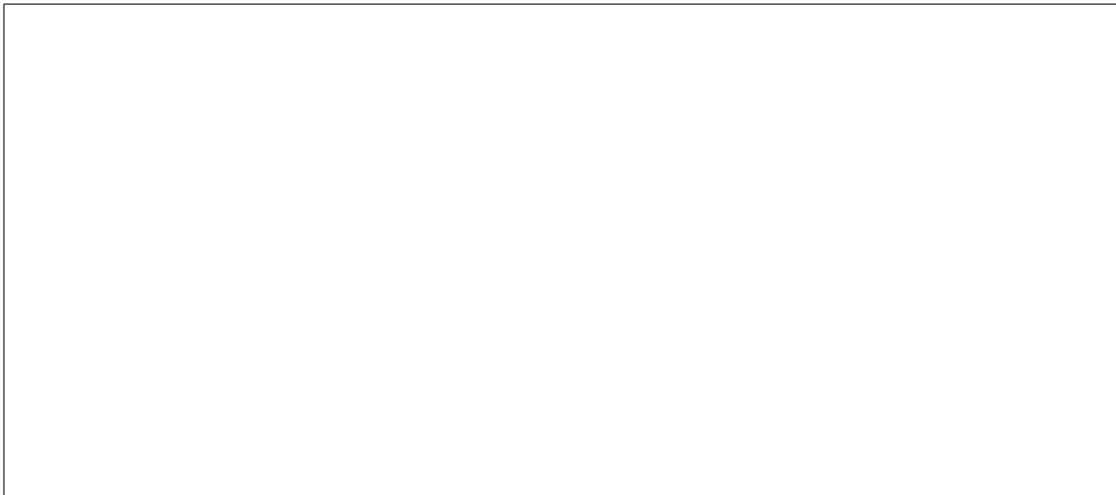
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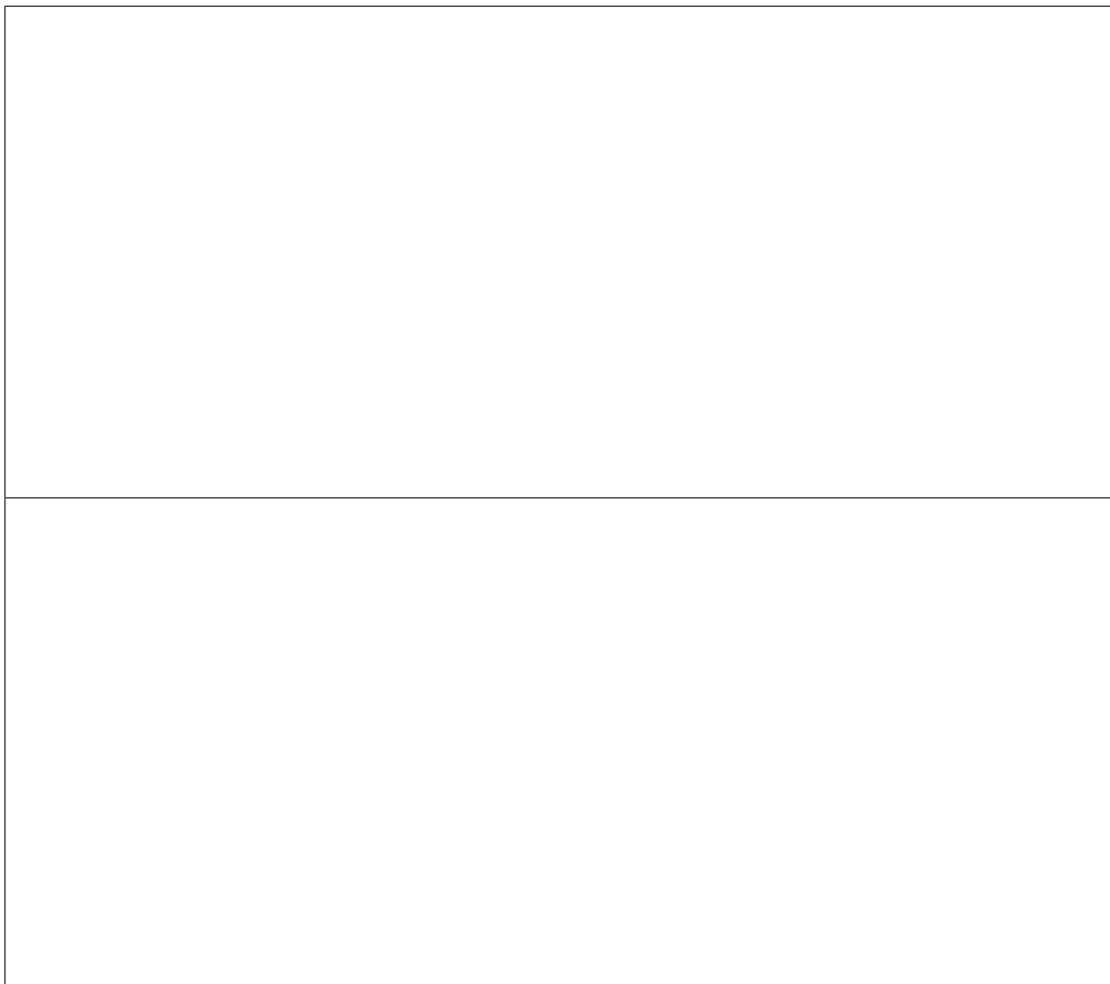
æIJĀăŇăĀňă;£çŤíãĀŽãČŇãČřãČř'ãČěãČĹ'èÍĹçóŮæŀ §ãČŠéĀÿæĹďăĀŮă;£çŤíãĀŽãČŇãČšãČćæŤřãČŠéĀÿæĹďăĀŮăĀ;ãĀŽãĀĆ  
ãĀŞãĀŞãĀğãĀřăĂĀăČćăČĞăČňăĀŇăŔăĀŤăĀĐăĀŞăČĀ;ijŤăČşăČćăČŠă;£çŤíãĀŮăĀçèÍĹçóŮăČŠèqŇăĀĐăĀ;ãĀŽãĀĆ



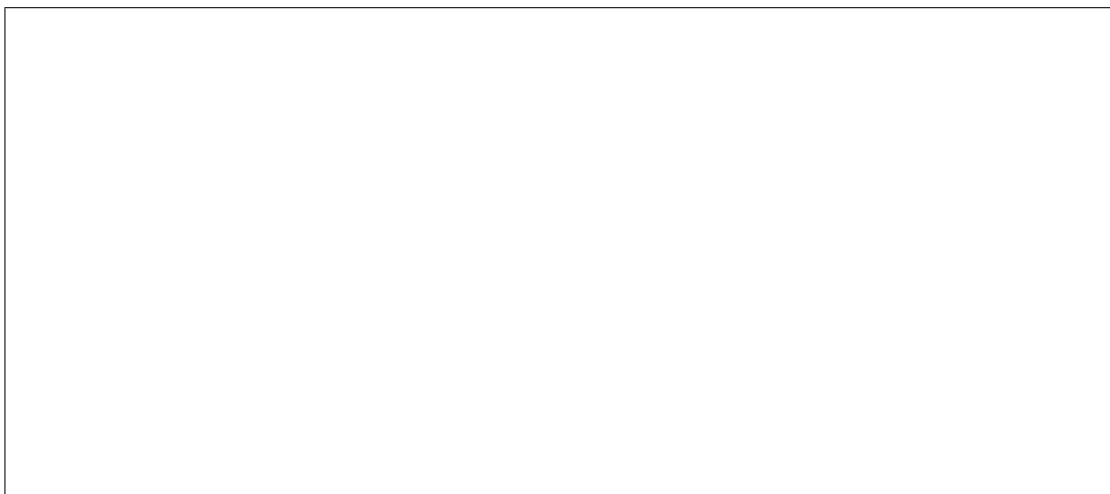
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ëÍĹčŮŮĹŷăşĄăČŠččžè■ăĄŻăČŇăĄşăĄĹăĄŇăĄğăĄ■ăĂăëÍĹčŮŮăĠžăŁŻăČĐăČĹăČ■ăČŇăČďăČijăĄŮăŔŎăİşçĹŮăşĄăČČččžè■ăĄ



ěÍŁçóŮāAŇçŧĆăžEăAŻăČŇăAÍResultsăĆĚăČŮăAŇçŔĹăČŇăĂAăČĹăČijăĆĚăČňăĆíăČăČňăĆóăČijç■L'ăČŠçčžèĹăAŻăČŇăAŞăAĹă



æġNéĀăæIJĀéAĴ'ăŇŮ

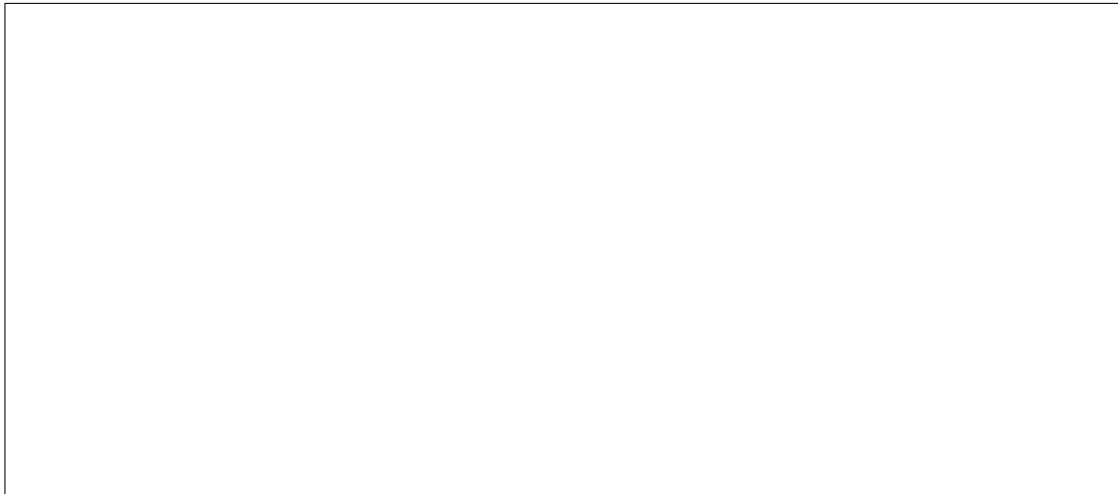
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ãAĴãAŽăĹĪāČAăAňăĀA

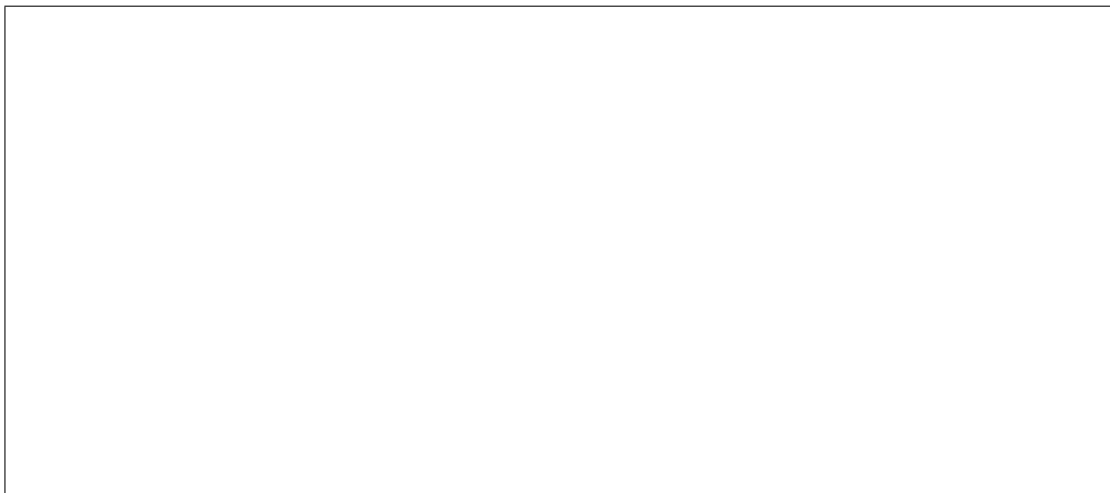
æăijă■ŘæIJĀéAĴ'ăŇŮeĹŁćőŮ

ãAŞãAŞãAğãAřQuantum ESPRESSO ãČŠăĵčŤíāAŮăAęæăijă■ŘăôŽæŤřăAĹăČĹăAşçŤŘæŽúăEěČíāAőăŎşă■Řăĵ■čĵăăČŠæIJĀéAĴ'ă

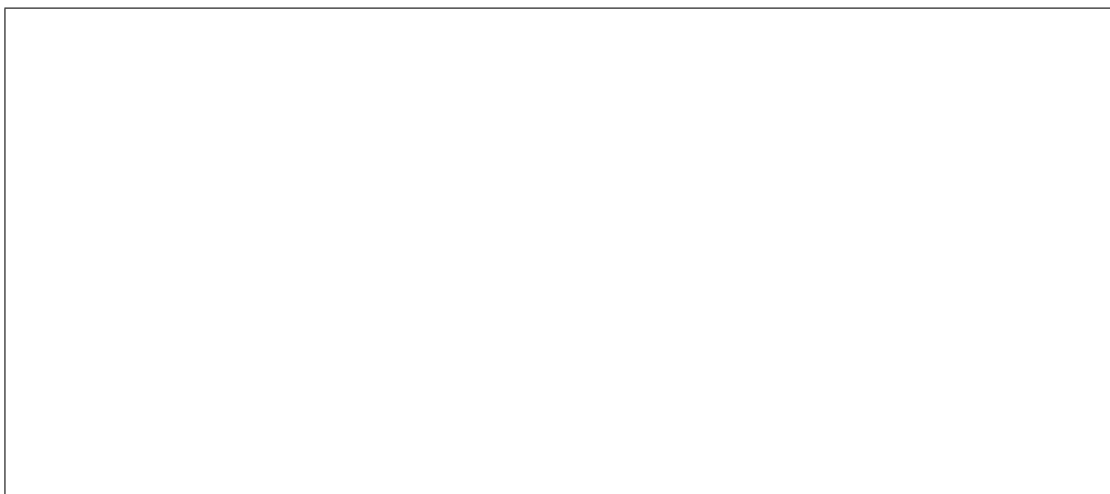
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RelaxationăĀĪăČŠăĵčăăAďăăAĴăăAŽăăĂĆ  
èĠăĹĚăAőWorkflowăAŇăČĹ'æIJĹčĐăăČŠćčžēĹ■ăAŮăAĴăăAŽăăĂĆ



ăĀIJVariable-cell RelaxationăĀĪăAŇăAĴăăAďăăĤ'ăŘĹăAňăăAřăăĀăăČăăČŇăăČěăăČĵăăAőBankăAő-  
WorkflowăAŇăČĹ'æĹ'ĂăĴŮăăAŮăăAĴăăĂĆ

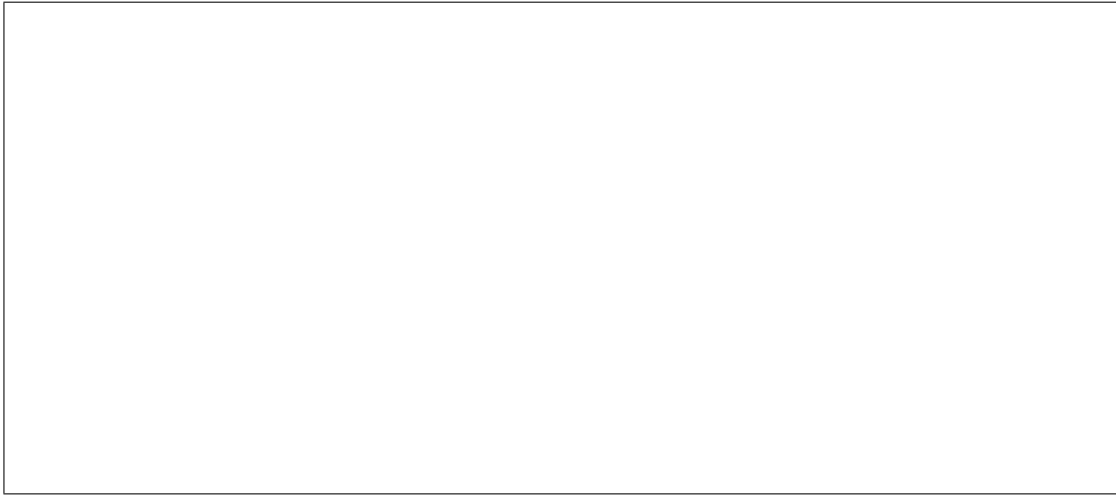


æd' IJçt' cãAŋÑãCL' âĂiVariâĂĩãAÍãĖĕãŁZãAŮãAŁãAŁZãĂC

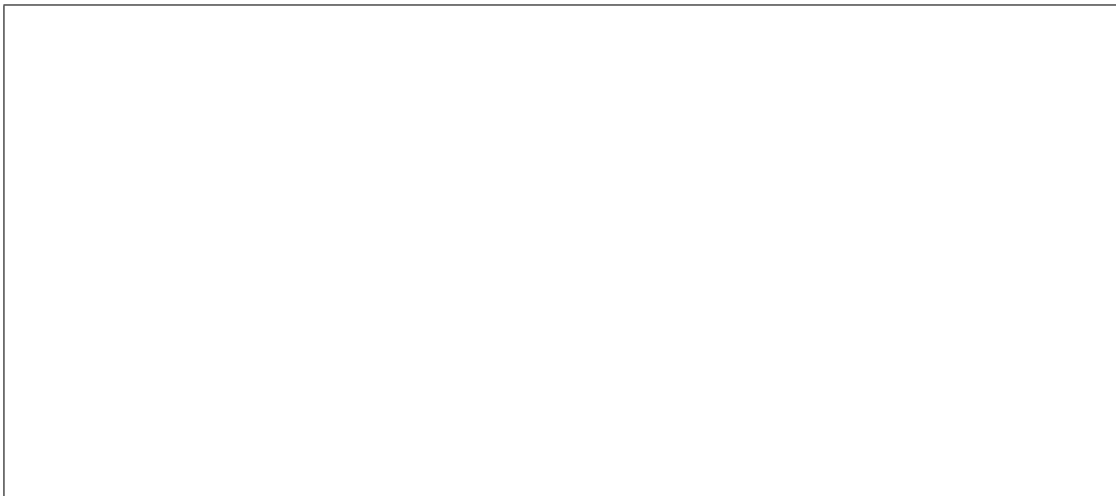


ExabyteçďĳăÑŃŤĺæĐŘăĂŮăĄșăÂİVariable-cell RelaxationăĬăĆŠCopyăĂŮăĂĳăĂŻăĂĆ



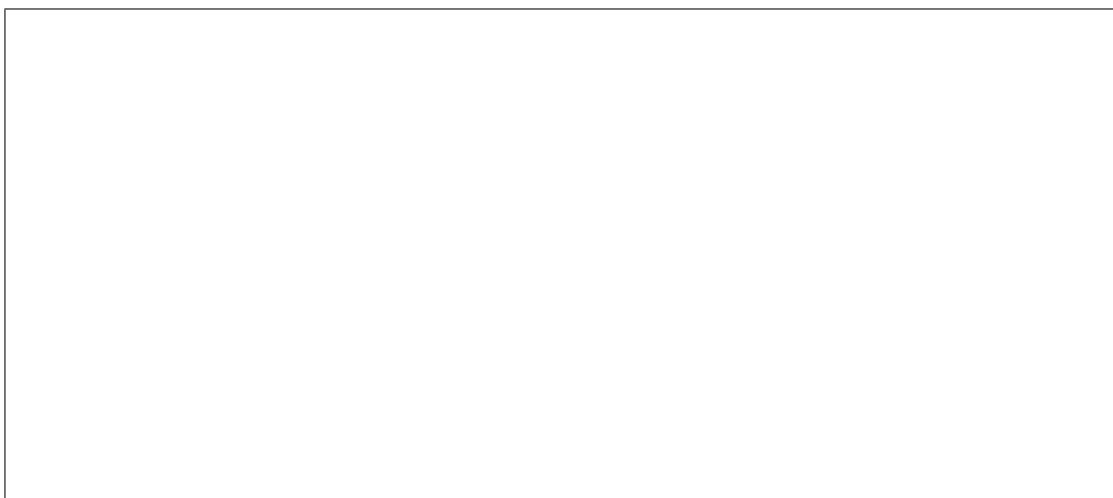


ăĆşăČŤăČijăAŻăČŇăAíăĜăĹăAŃăWorkFlowăAńăŁă■ŸăAŤăČŇăAĹăAŻăĂăAŞăČŇăAğăăijă■ŘăIJăéAŕăăŇŮăAŃăĹăŃăUăAŇăA

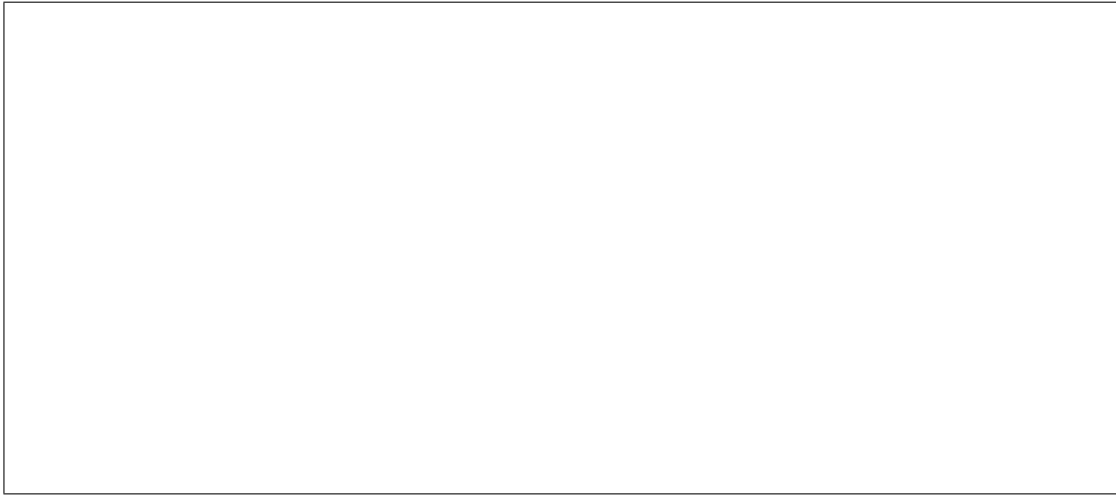


Create JobăAŇăČĹăăĆŷăČĝăČŮăăČŠă;IJăĹăŘăAŮăăAĹăăAŻăăĂă

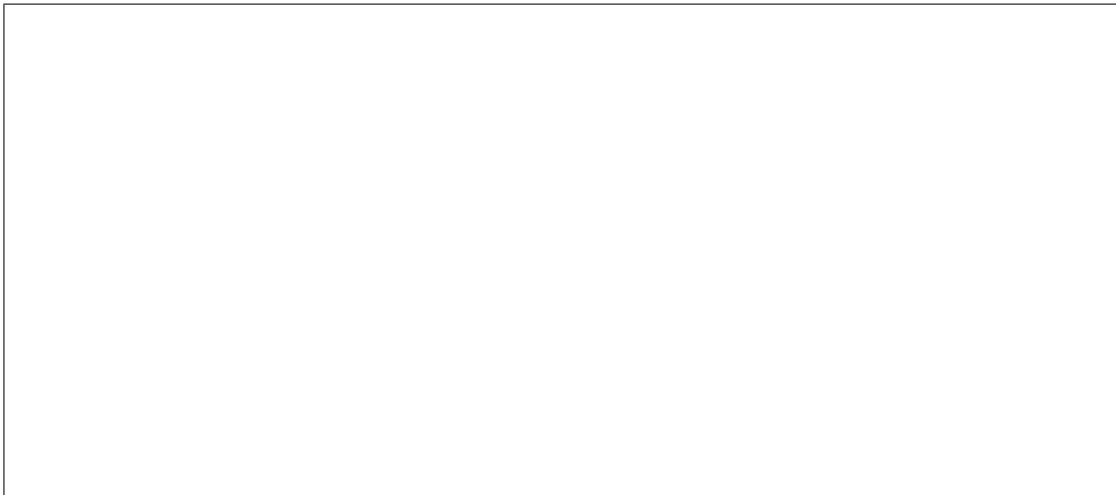
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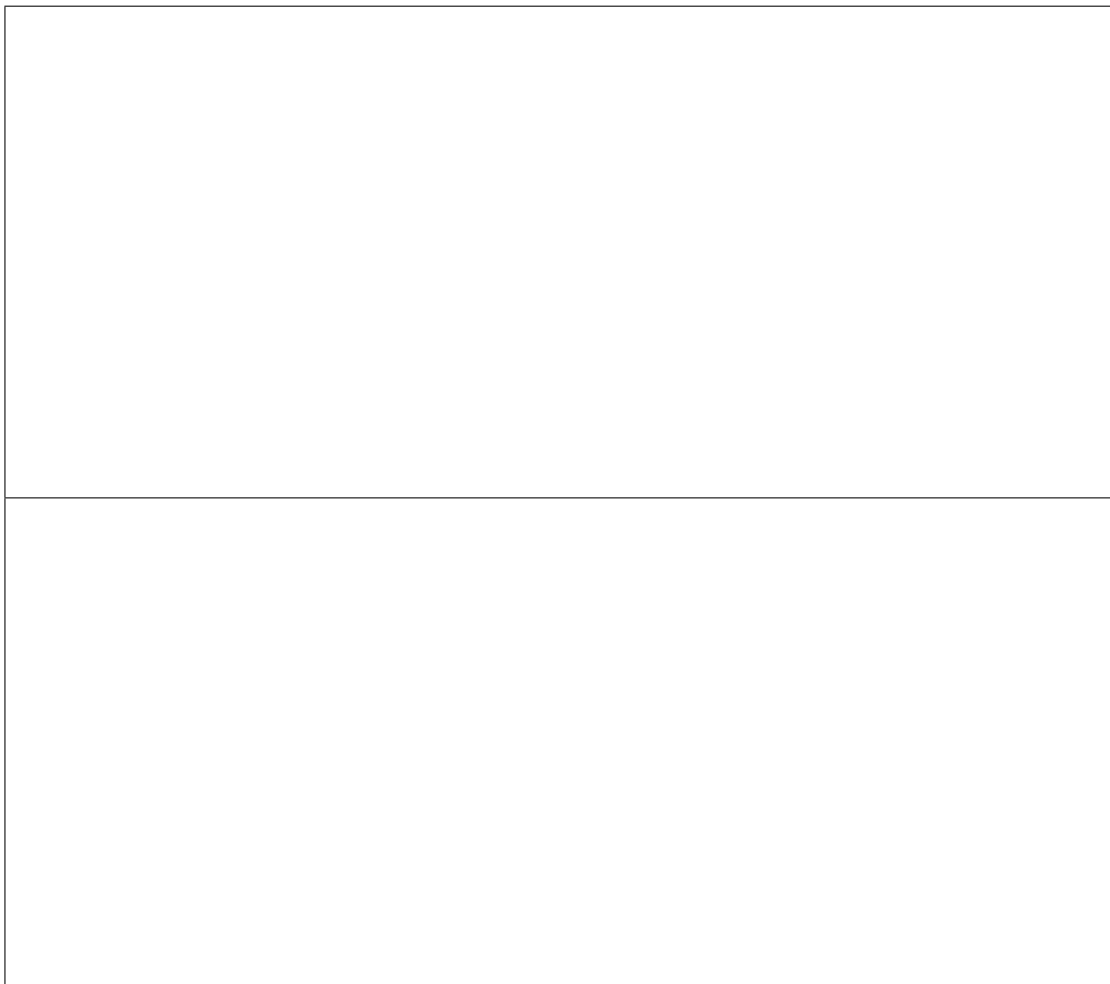
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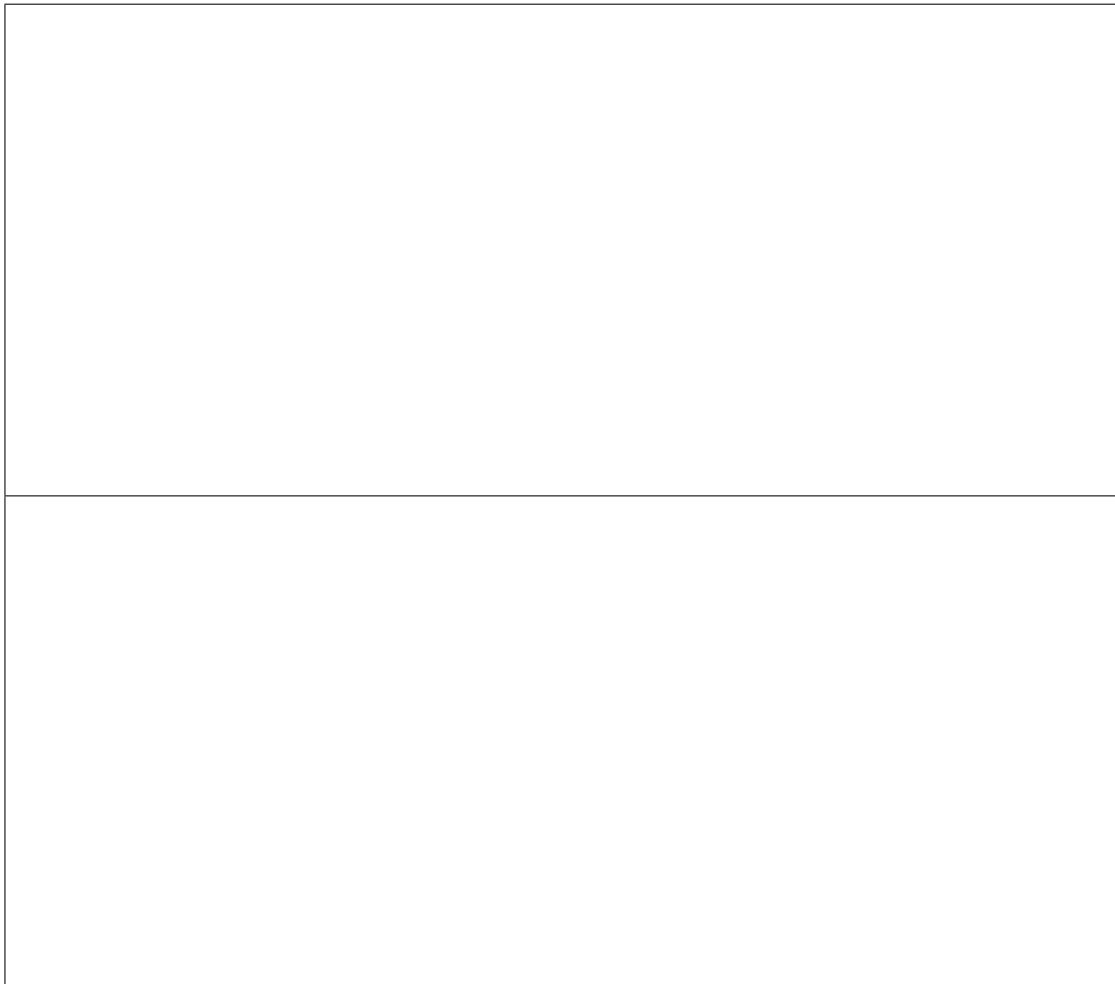
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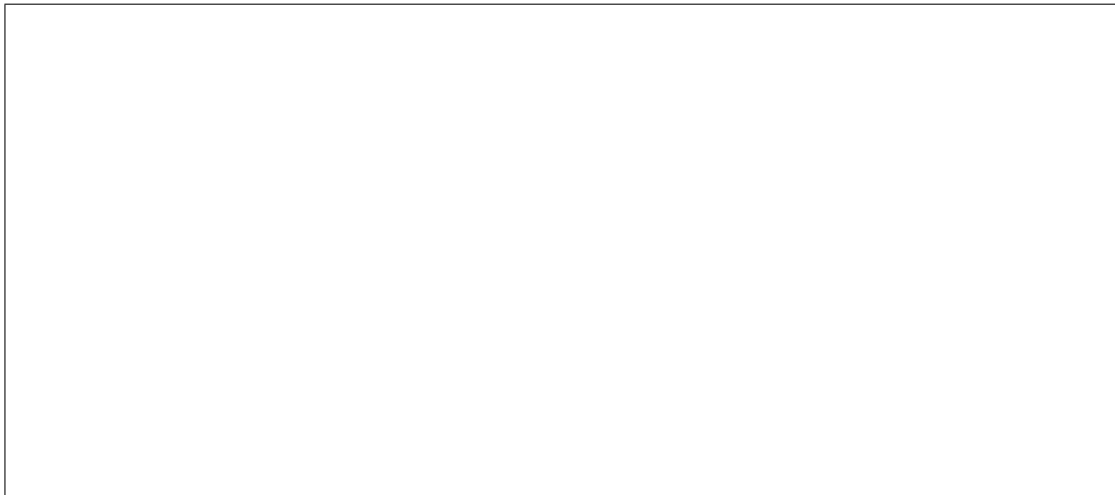
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RelaxationăĂĬăČŚéAÿæŁďăAŮăAĹăăAŻăĂĆ



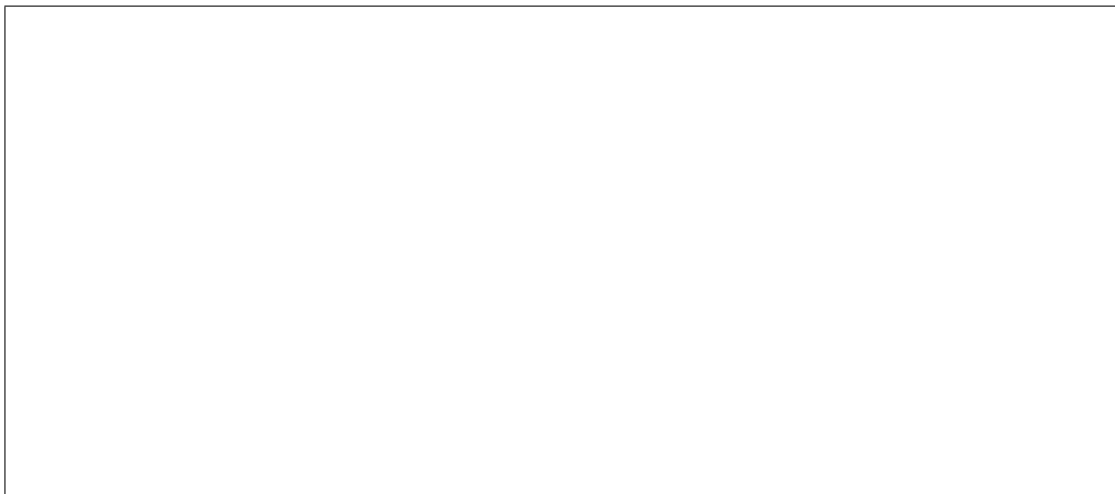
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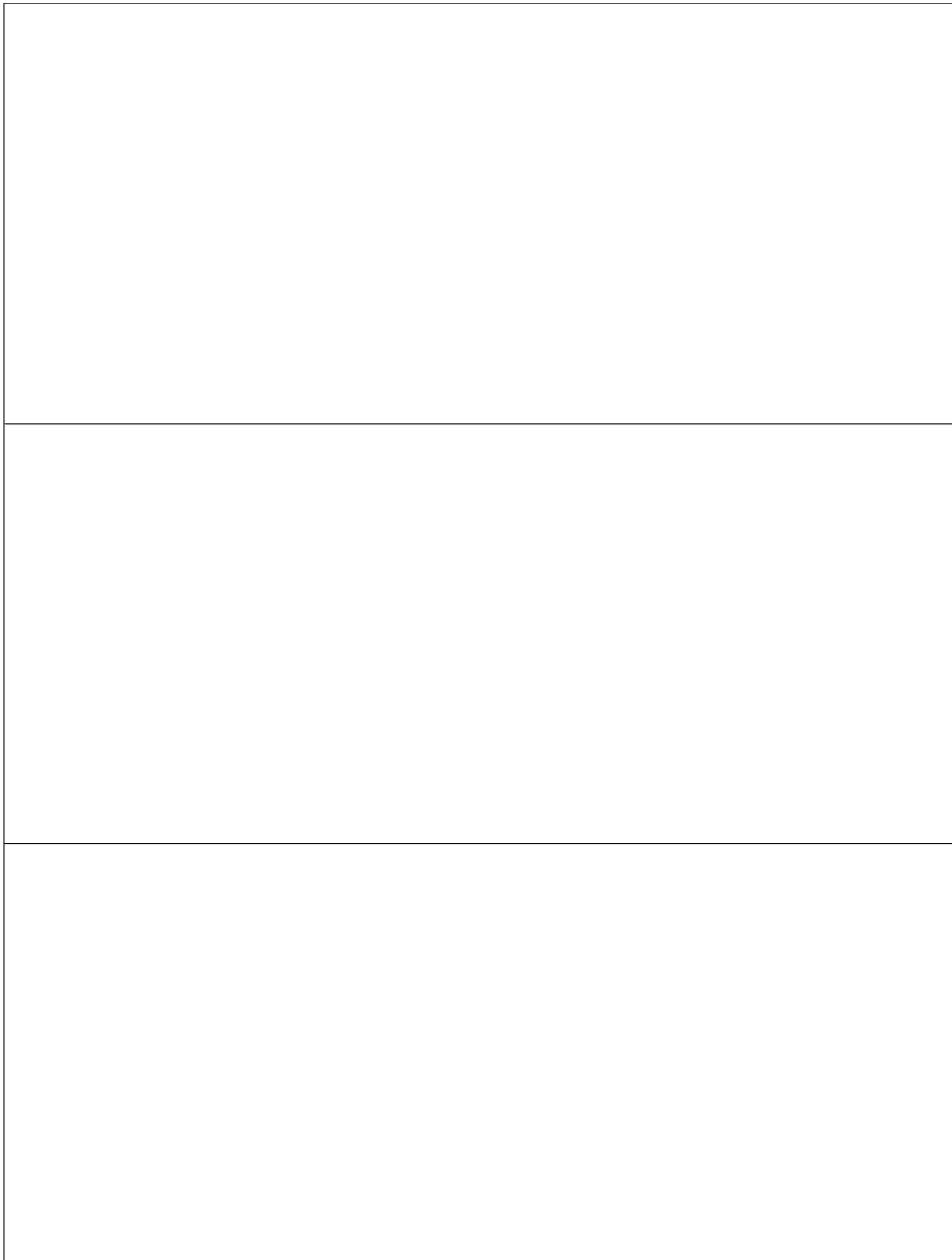
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āAŞāAŞāAğāAřāĂAăČćāČĜāČŇāAŇāŔāAŤāAĎāAşāČAĭĭjŤāČşāČćāČŚă;£çŤíāAŮăAęèÍŁçõŮăČŠèŋŇāAĎāAĭāAŻāĂČ



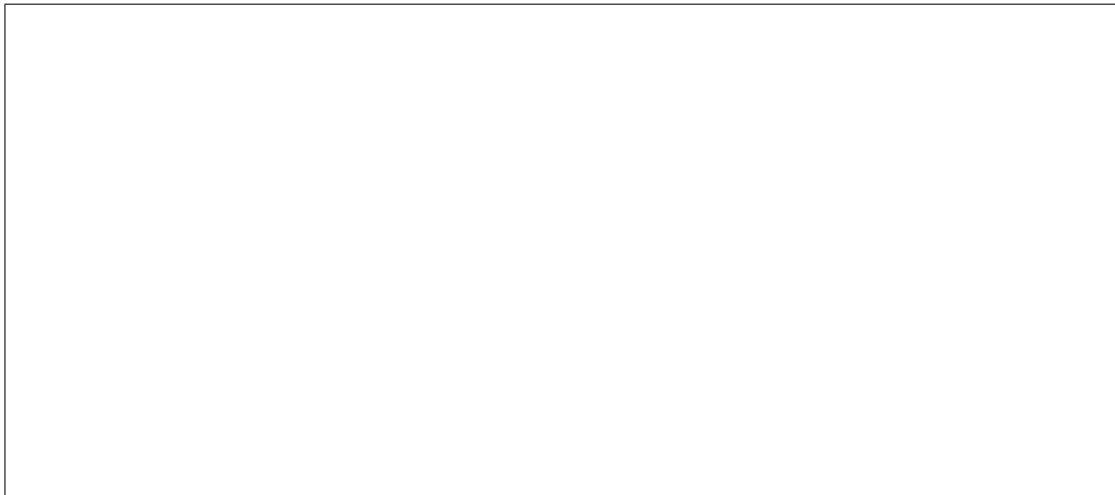
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èÍĹđŮŮĹŷăĄăĈŚșĉžè■ăĄŻăĈŇăĄșăĄĹăĄŇăĄğăĄ■ăĂăèÍĹđŮŮăĜžăŁŻăĈĎăĈÍăĈ■ăĈŇăĈđăĈĭjăĄđăŖŌăİșĹŮŷăĄăĈĈĉžè■ăĄ



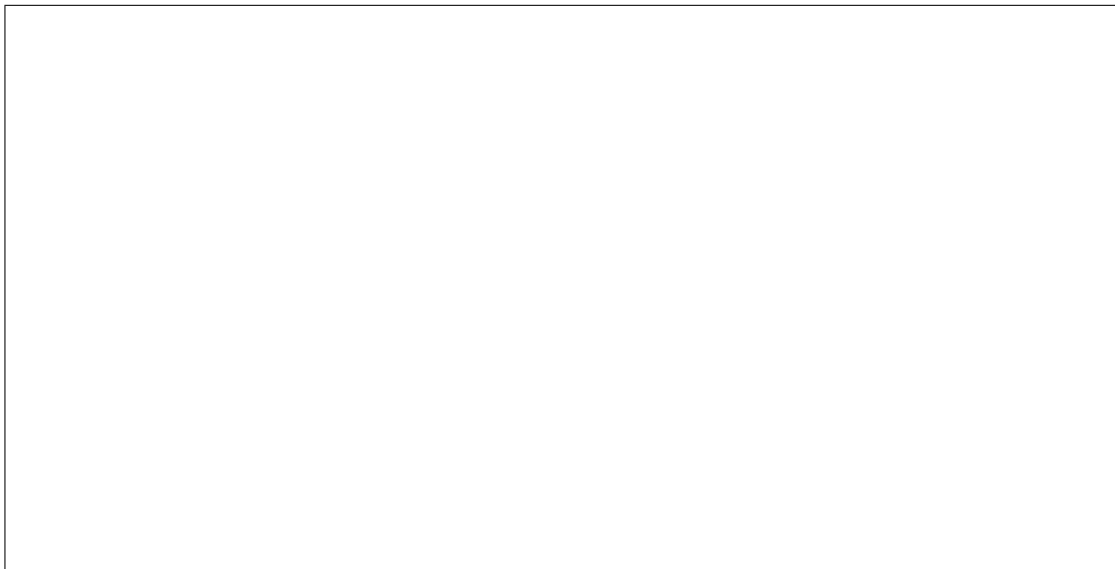
èíŁçõŮăĀŇçŧČăŻĚăĀŽăČŇăĀÍResultsăČĚăČŮăĀŇçŖĭăČŇăĀĀăĪĴăĒĀŕăŇŮăĀŮăĀŖăăĭĵă■ŔăõŽăŤŕăĀõăČĚăăşç■ŬăČŖçčžè■ăĀŽ



## çŁúæĚŇárĚāžę

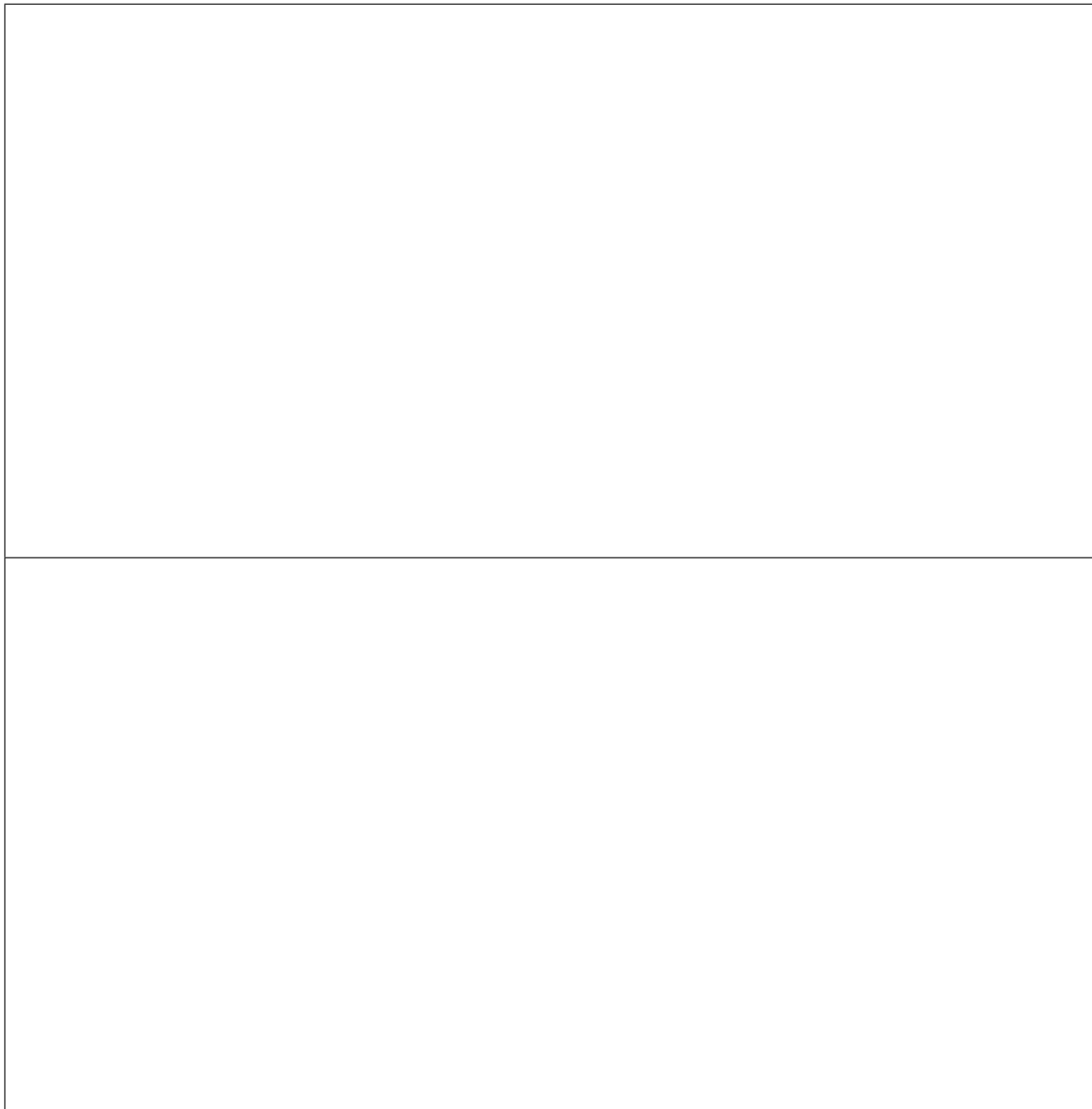
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ãČďāČĚāČĤāČćāČńāČŠéAÿæŁďāAŮãAġãAŻãĂĆăZŁăZďāAřāČĠāČŦãĆŦ'ãČňāČĹãAőSiāČŠçŦĩãAĎãAġãAŻãĂĆ

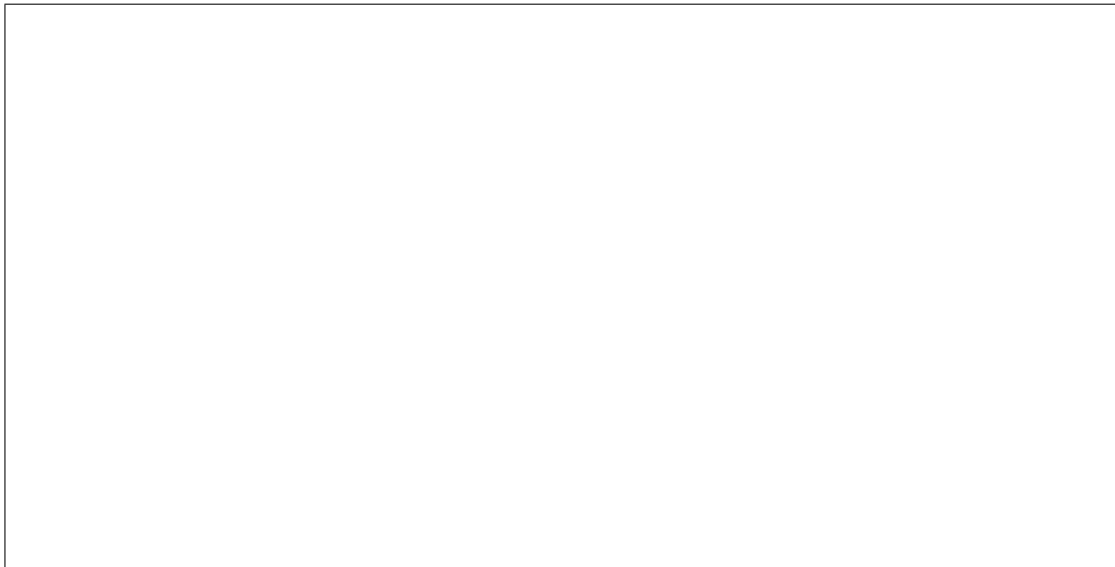


DOSãAőěĺŁçőŮãAňãAřāĂAWorkFlowãAőăĂiDensity of StatesăĂĩāČŠçŦĩãAĎãAġãAŻãĂĆ

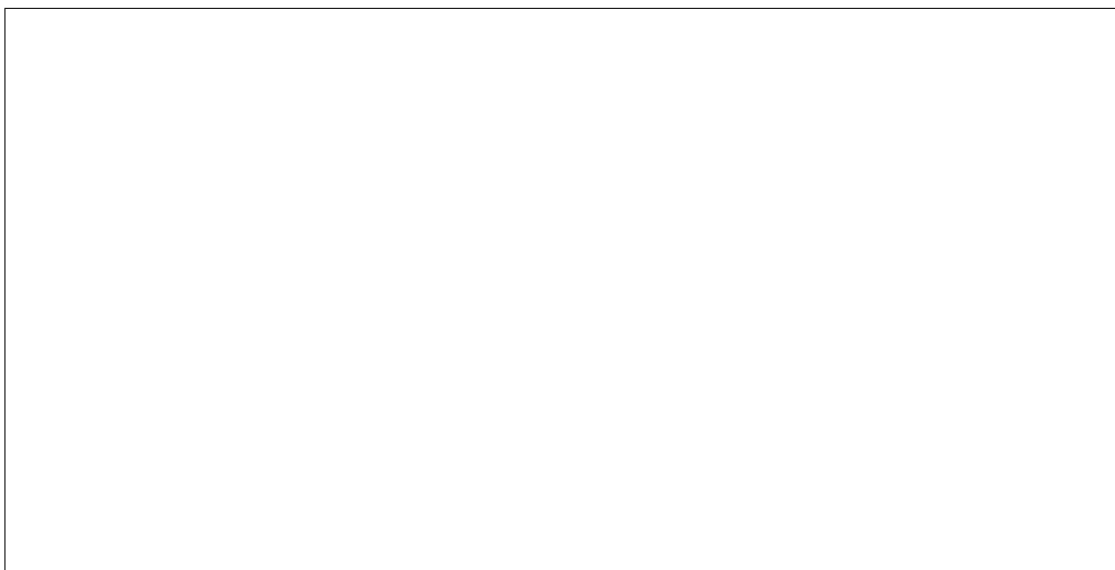




DOSèÍŁçõŮăAñăŁĚèçAăAłæłAăČŇăAŇèł■ăóŽăAŤăČŇăAçăAĎăAłăAŽăĂĆ



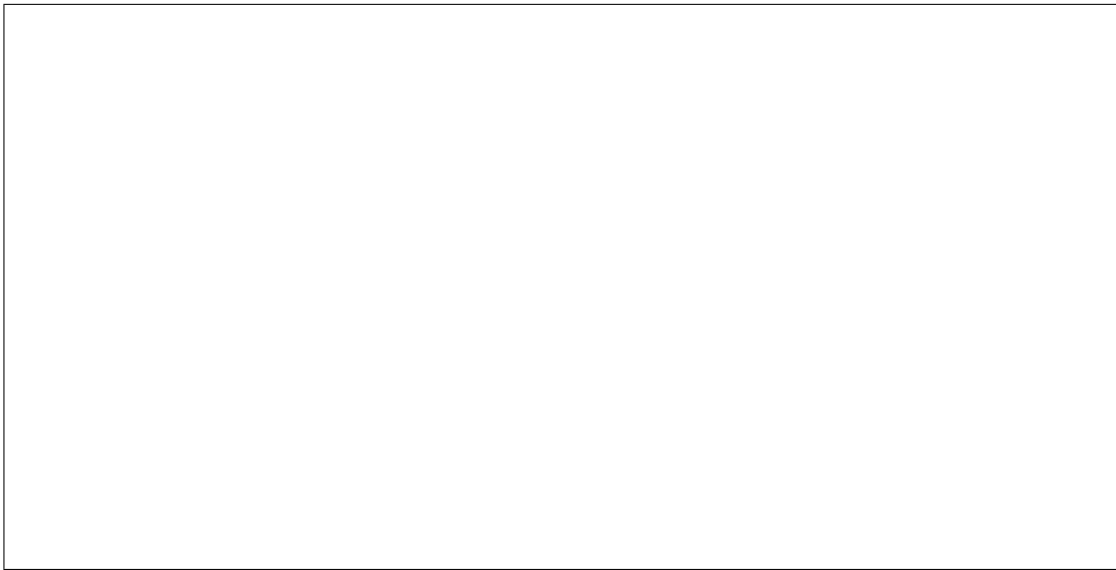
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SETTINGSăĂĩăAŏkgridăAŇăĈĹ'èąŇăAĹăAĎăAĹăĂZăĂĆ



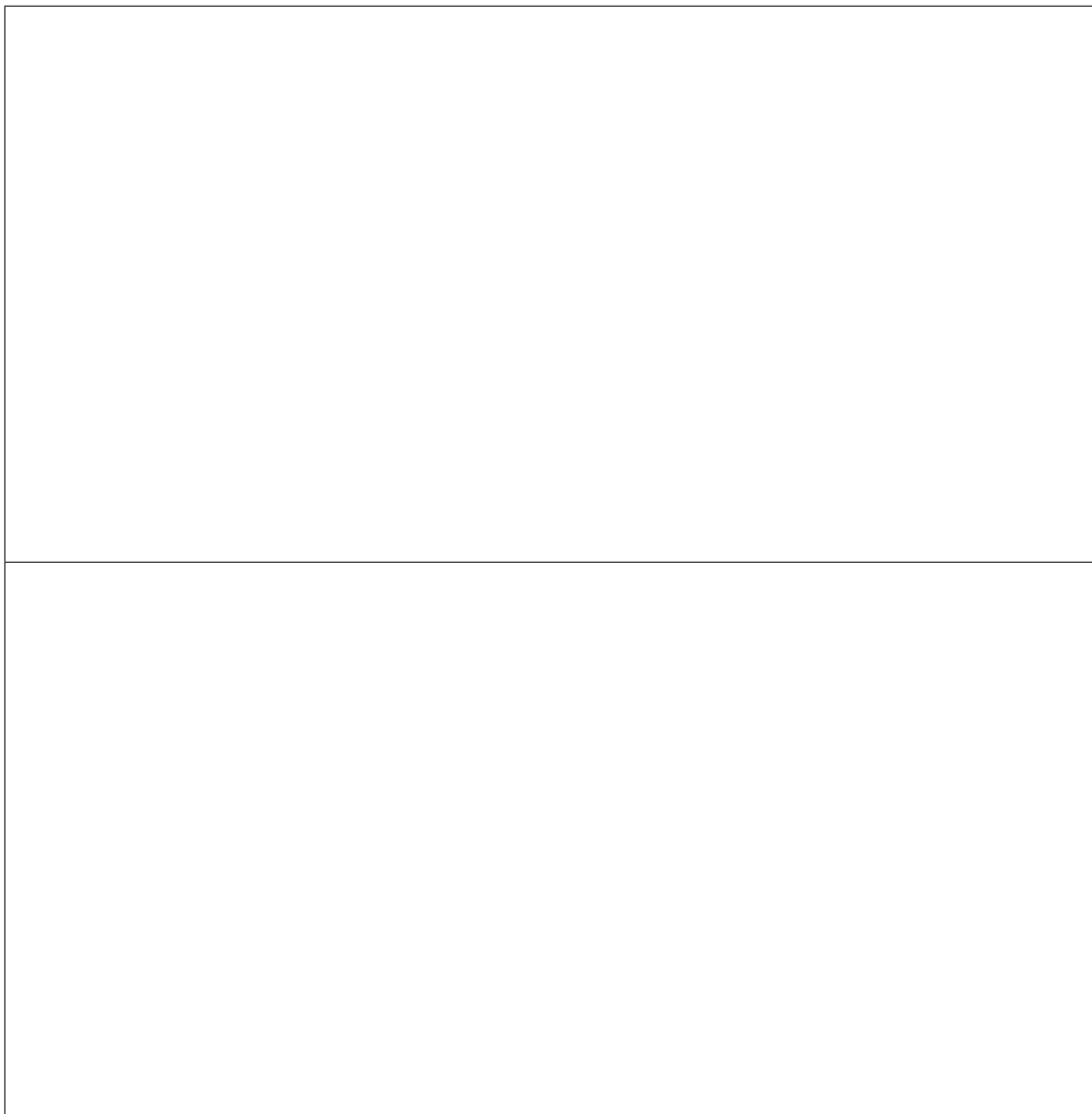
æIJĂăĴŇăAńă;ŕçŦĩãAŻăĈŇăĈŕăĈŕ'ăĈęăĈĹ'èĹĴŏŮæŕ'şăĈŠéAÿæŁďăAŮă;ŕçŦĩãAŻăĈŇăĈşăĈćæŦŕăĈŠéAÿæŁďăAŮăAĴăĂĆ



ěÍŁϚŮăĀŇϚȦžĚăĀZăĈNăĀÍResultsăĈĚăĈŮăĀŇϚŔĭăĈNăĀĀăĈĹăĈijăĈĚăĈnăĈÍăĈ■ăĈnăĈŏăĈijϚ■ĹăĈŖϚĉžēĹ■ăĀZăĈNăĀŖăĀĹă



DOSăĀŏěÍŁϚŮŮϚȦđĬJăĀŕăĀĀDensity of StatesăĀŏěĈĹăĹĚăĀñēăĹĉd'žăĀŦăĈNăĀĭăĀZăĀĈ



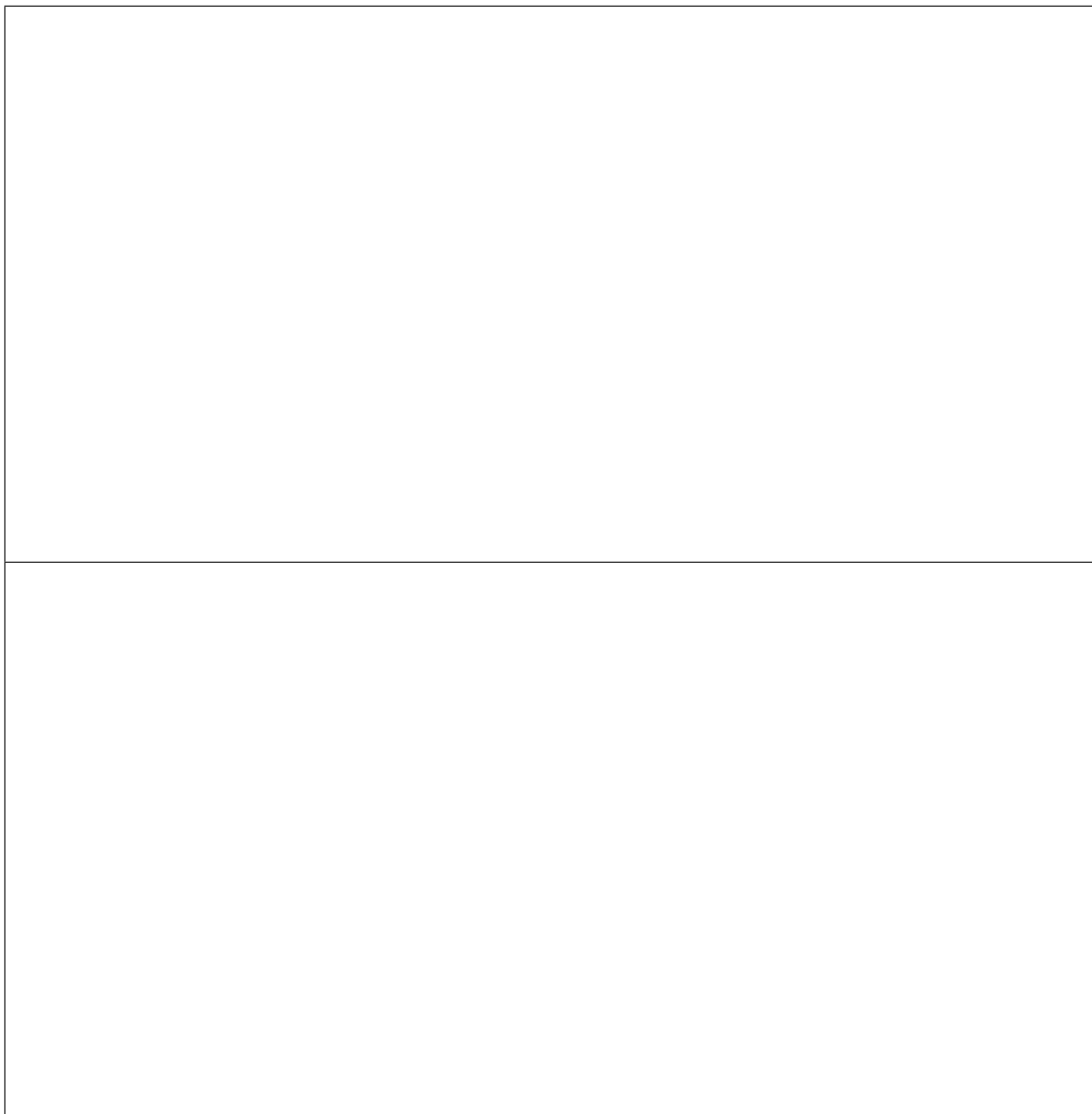
PDOSāČĆāŘŇæŽĆāAñēÍŁçōŮāAŤāČŇāČŇāAšāČAāĀAāŘĎāŎšā■ŘāAŤāAĴāAñēēŇāČŇāAšāAĴāAŇāAğāA■āAĴāĂĆ  
èaĴçd'žāAçON/OFFāAřāČřāČŤ'āČŤāy■āAçāĚČçŤ'āāAŁāČĴāAšTotalāČŠāČřāČĴāČČāČřāAŽāČŇāAšāAĴāAğāAğāA■āAĴāĂĆ

EXabyte.ioāAçāČĴāČšāČřāĚĴ  
EXabyte.ioāAçāžŇāĴŇéŽĚ

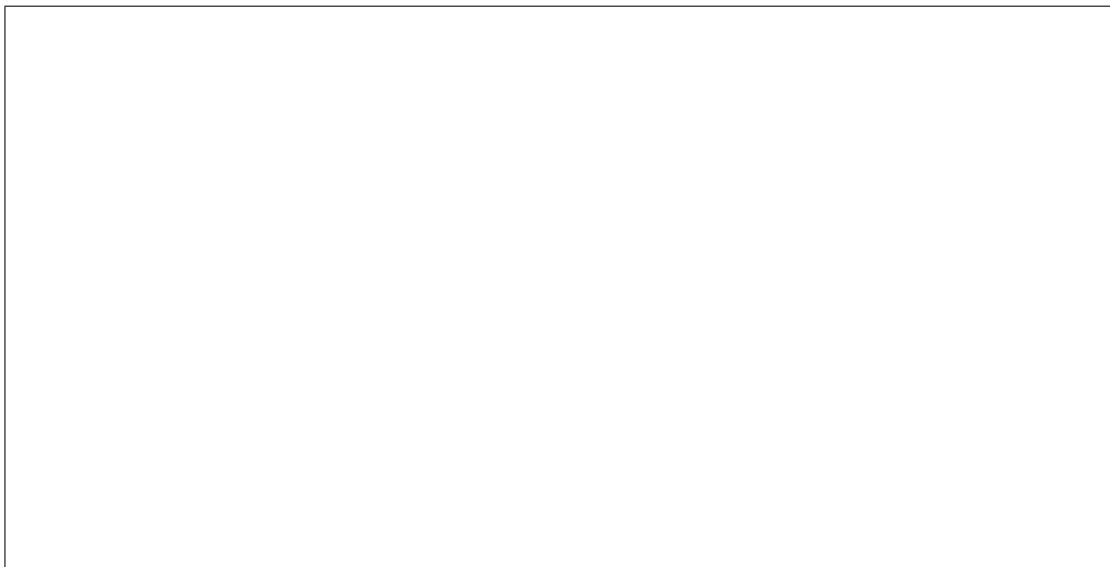
## āČŘāČšāČĴ'æğŇéĀā

āAšāAšāAğāAřQuantum ESPRESSO āČŠā;ξçŤíāAŮāAçāČŘāČšāČĴ'æğŇéĀāAçōēÍŁçōŮāAñāAđ'āAĎāAçēĥæŸŎāAŮāAĴāĂĆ

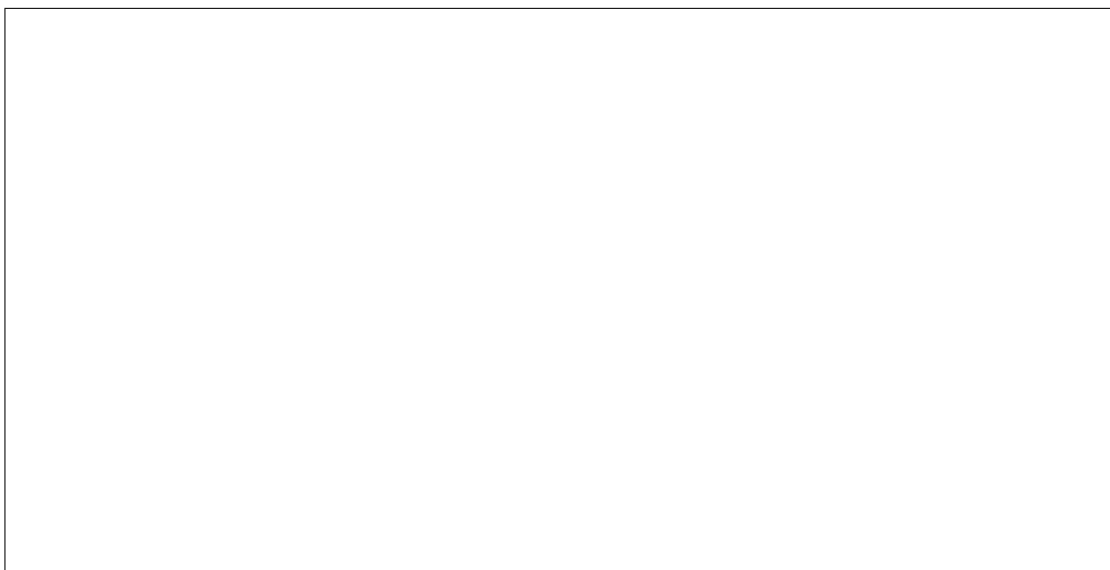
ãČŘăĈşăĬŁ æğŇĂăăAœēİĽçõUăĂñăĂřăĂĂWorkFlowăĂoăĂİBand StructureăĂİăĈŞçTİăĂĐăĂıăĂZăĂĆ



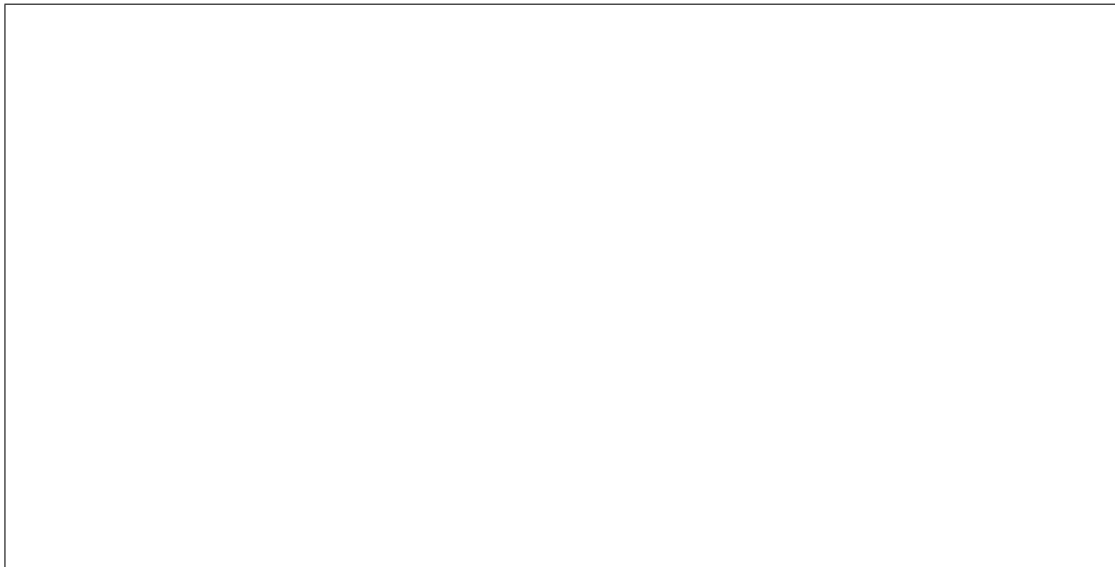
ãČŘãČšãČĽ'æĝŇéĂăăAőelĹçõŮãAňăŁĚěęAăAłæŕAăČŇăAŇěł■ăőŽăAŦăČŇăAęăAďăAċăAŽăĂĆ



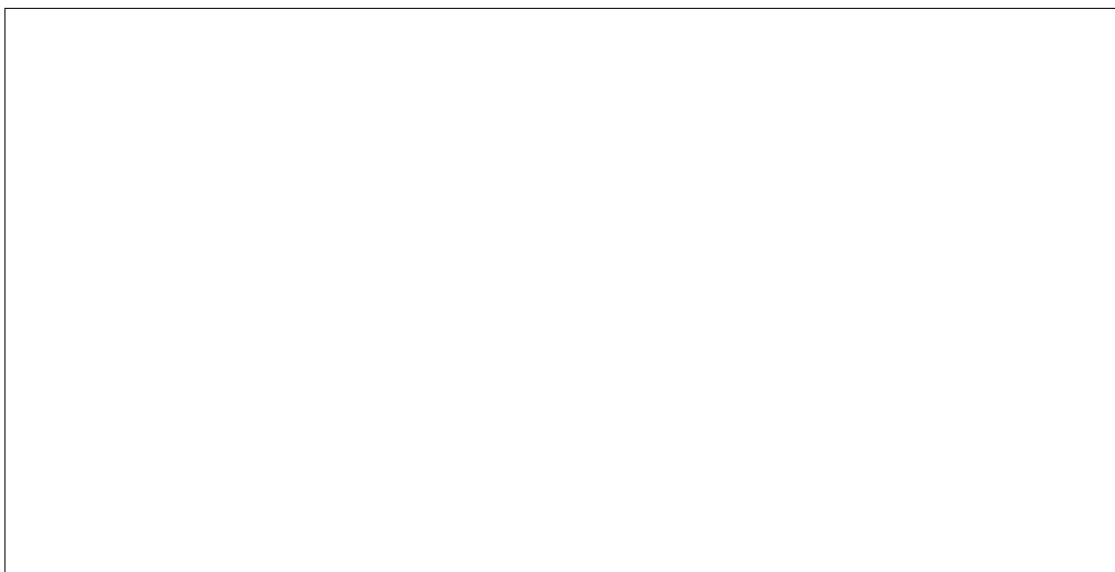
kçĆzăĈŚăĈzăĀńăĀđ'ăĀďăĀęăĀřăĀĀèĠăŇŤçŽďăĀñėí■ăőŽăĀŤăĈŇăĀęăĀďăĀĹ;ăĀŽăĀĈăĈćăĀŮkçĆzăĈŚăĹĹéŽď'ăĀŮăĀşăĀďă



æĲĀăĹŇăĀńă;ŤçŤíăĀŽăĈŇăĈřăĈŤ'ăĈęăĈĹ'ėĹĹőŮæŤ şăĈŚéĀŷæĹďăĀŮă;ŤçŤíăĀŽăĈŇăĈşăĈćæŤřăĈŚéĀŷæĹďăĀŮăĀ;ăĀŽăĀĈ

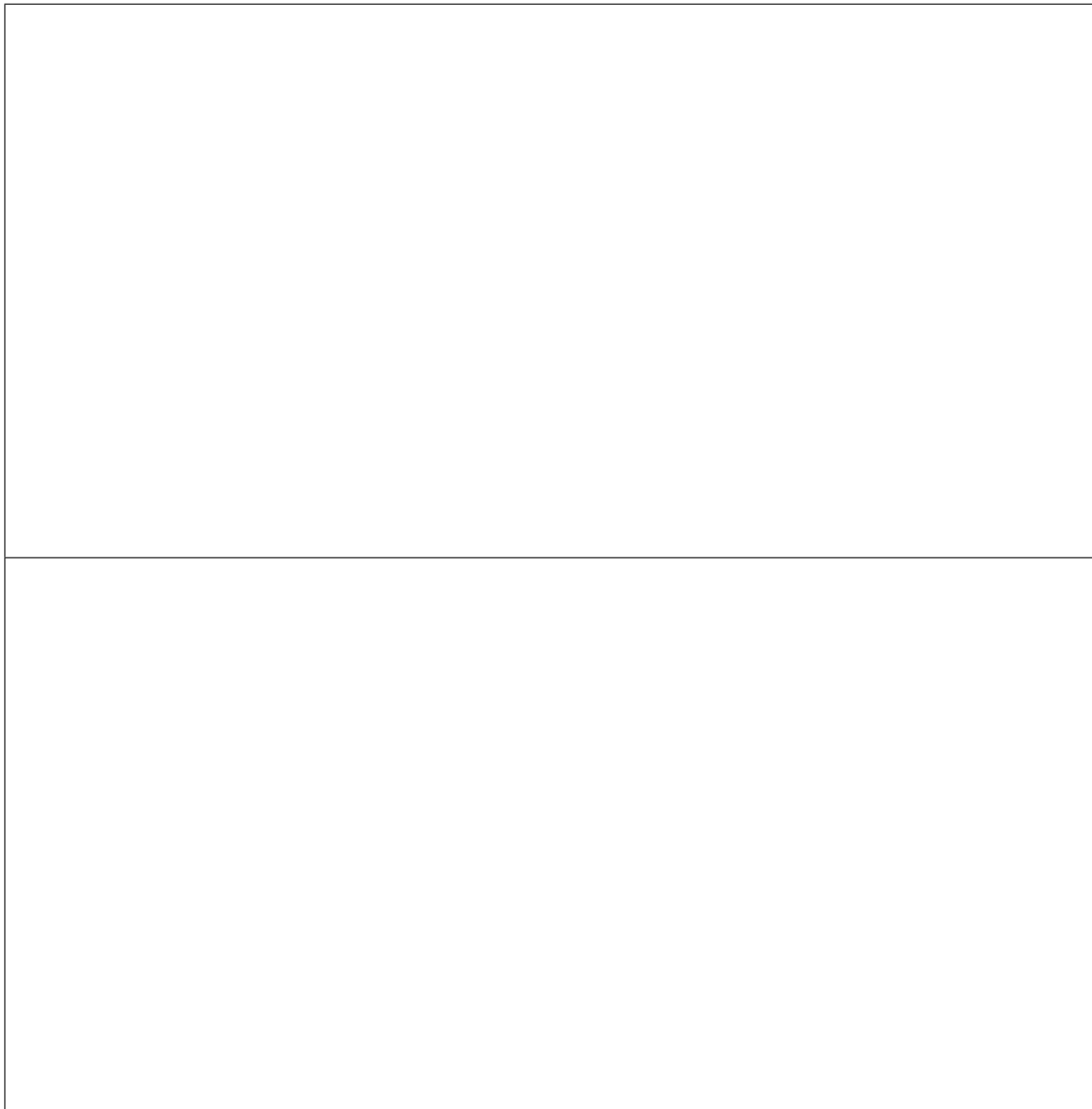


ěÍĽçŦŮăĀŇçŦĈăŻĚăĀŽăČŇăĀÍResultsăĈĚăČŮăĀŇçŦŦăČŇăĀĀăĈĽăĈijăĈĚăČňăĈíăĈăĈňăĈŏăĈijç■ĽăĈŖççžēĽăĀŽăČŇăĀŖăĀĬă



ăĈŖăĈŖăĈĽ'æĝŇéĂăăĀŏěÍĽçŦŮçŦŦæđIJăĀŖăĀĀBand Struc-  
tureăĀŏěĈĬăĽĚăĀŇēăĭçd'žăĀŦăČŇăĀŦăĀŽăĀĈæŇăđ'ğăĀŮăĀŖăĀĎăĀĬăĀŖăĀĈăĈăĈďăĈēăĈžăĀğăăŸăŖŖéĀŷæĽďăĀŽăČŇăĀĬăŖăŇă





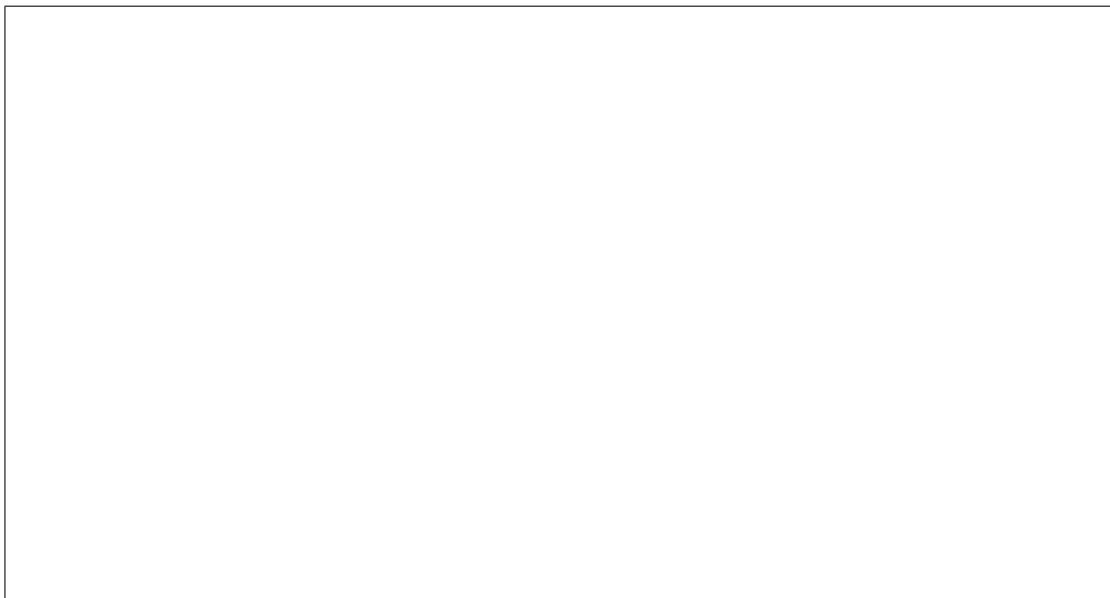
EXabyte.ioăAőăĈĩăĈşăĈřăĚĹ

EXabyte.ioăAőăžŇăĹŇéŽĚ

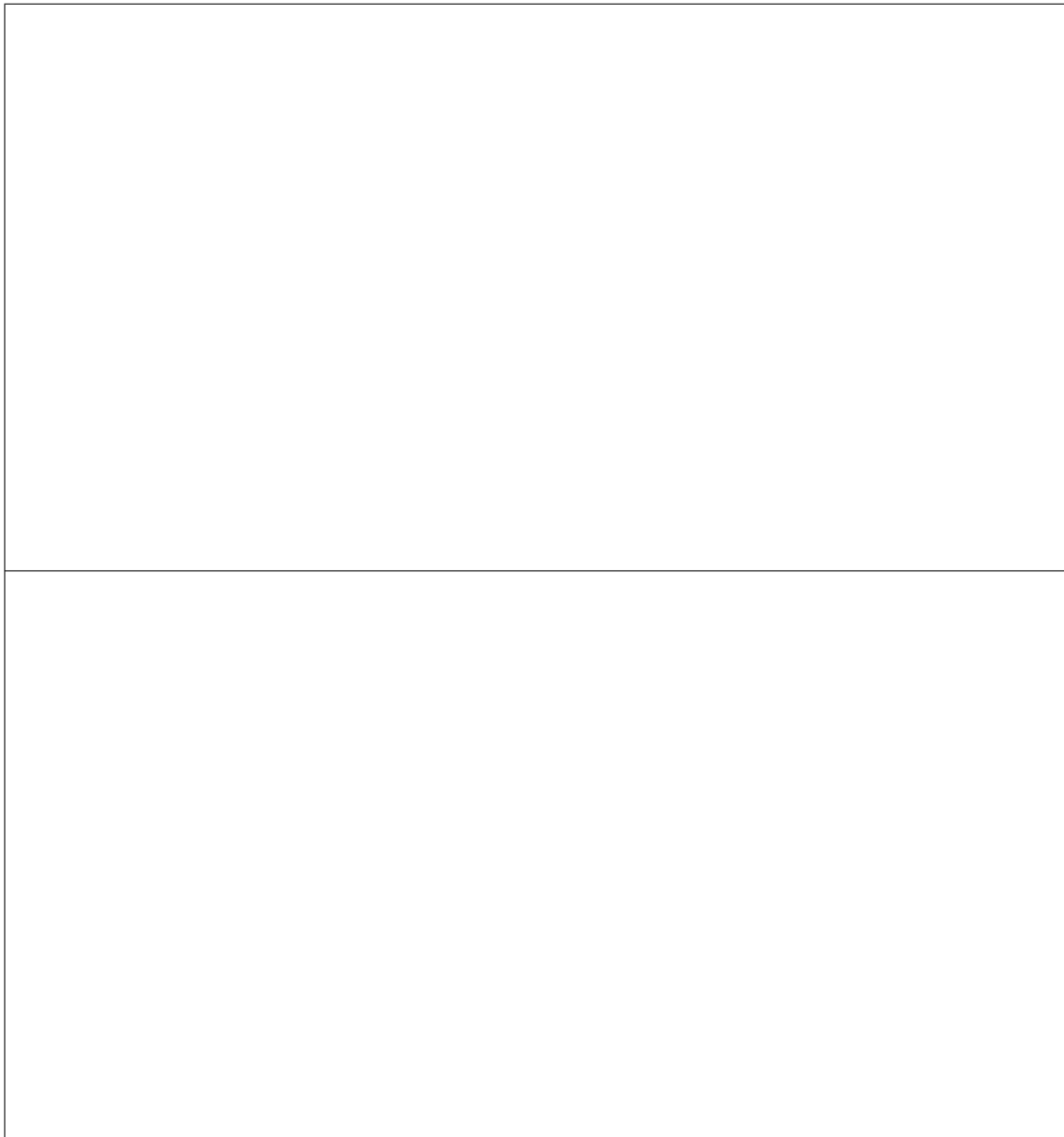
**ϚĹúæĚŇăřĚăžę & äĈŘăĈşăĈĹ'æğŇéĂă**

ăAşşăAşşăAğăArQuantum ESPRESSO äĈŞăĵξϚȚĩăAŮăAęăĂADOSăAĩăĈŘăĈşăĈĹ'æğŇéĂăăAőăĹĹçõŮăĈŞiijSăAd'ăAőăĈŷăĈğăĈŮă

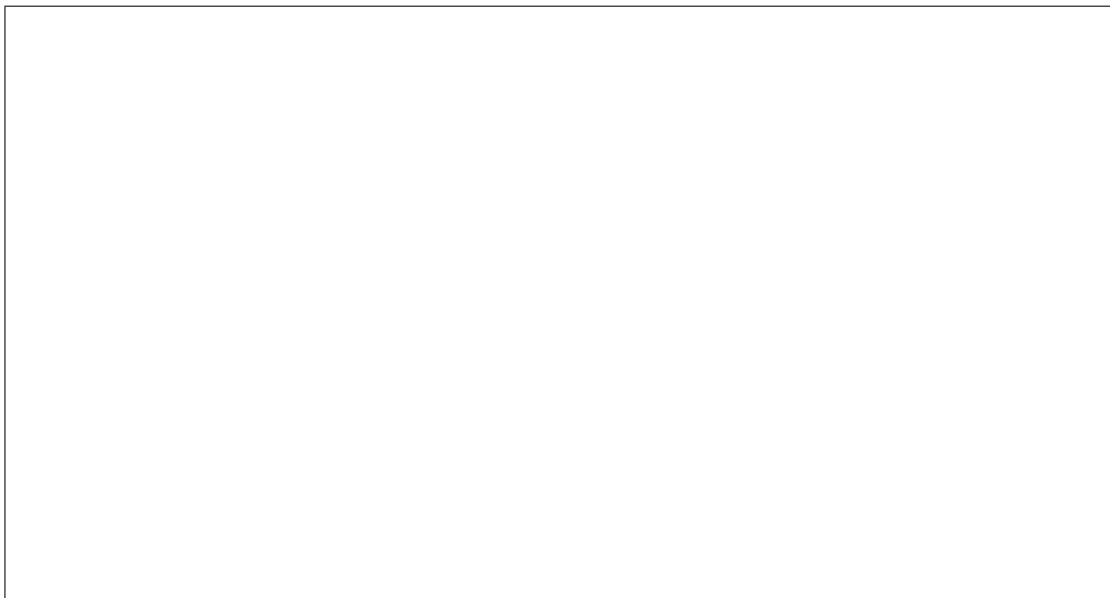
ăĈđăĈĚăĈĩăĈćăĈŇăĈŞăĈşăĈđăAŮăAĹăăAŻăăĈăZĹăăZđăAřăĈĞăĈȚăĈĹ'ăĈŇăĈĹăAőSiăĈŞşȚĩăAđăAĹăăAŻăăĈăĈ



DOSăAĴăČŘăČšăČĹ'æğŇéĂăĂŒěÍĹčřŮăAńăAřăĂAWorkFlowăAőăĂİBand Structure + Density of  
StatesăĂİăČŠŒİăAĐăAĸăAŽăĂĆ

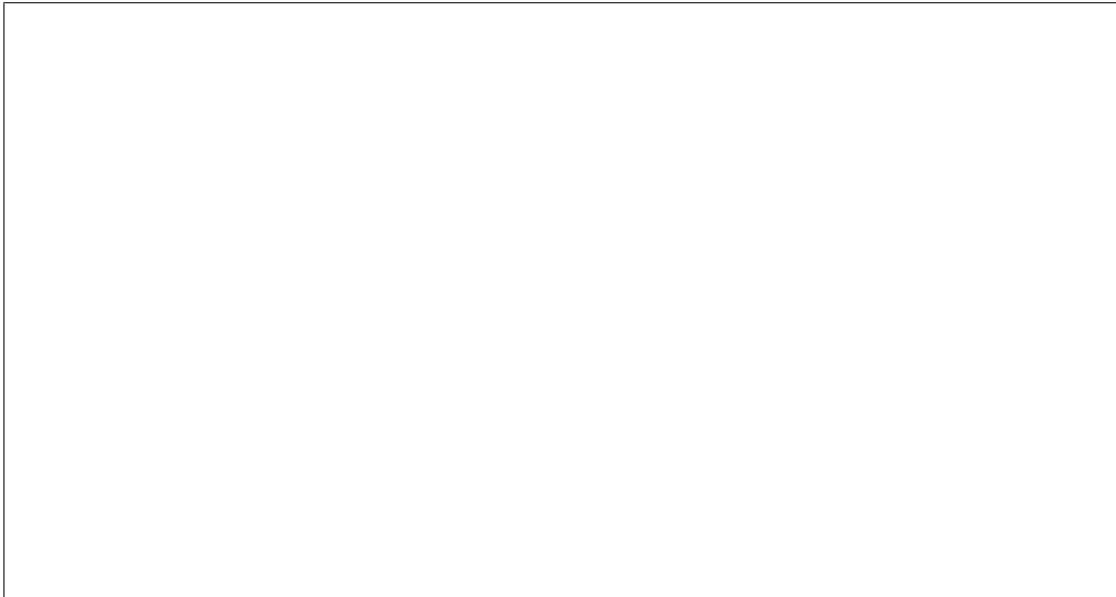


ăĈRăĈşăĈL'æğNéĂăăAđđēlĹçốỦăAñăŁĚēēAăAłæłAăĈNăAđNě■ăđZăAȚăĈNăAęăAđăA;ăAŻăĂĆ

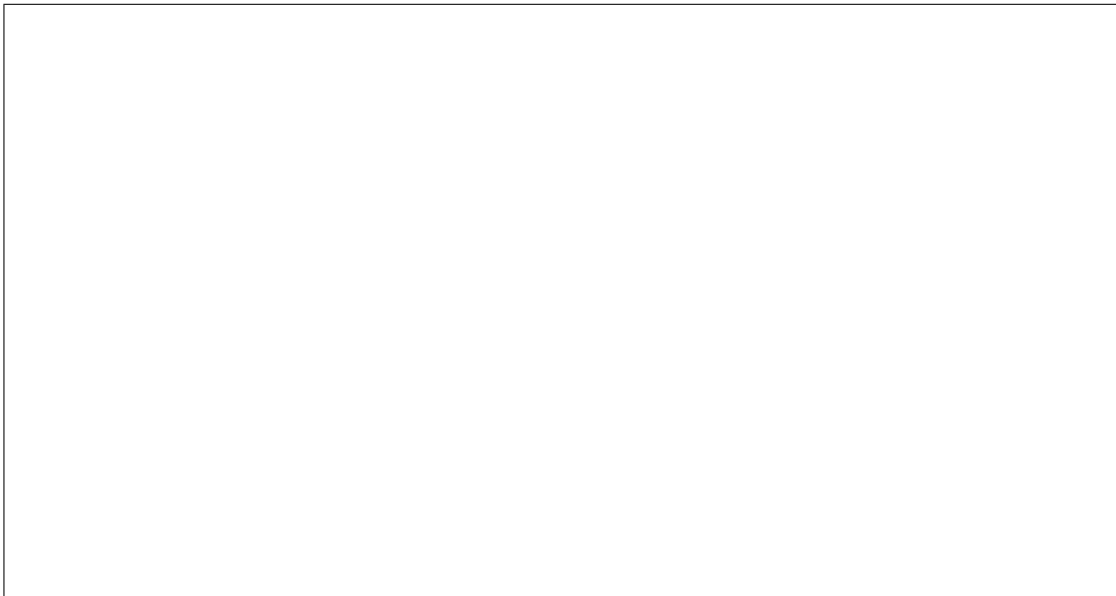


scfãAõkçĆzæŤřãČďãĚAķçĆzãČšãČzãĚADOSãAõkçĆzæŤřãAĥãAĭ'ãAõel■ăõŽãAřèĤãŇŤçŽďãAñel■ăõŽãAŤãĆŇãAĭãAŽãAŇãĚãAĥã


æIJĂăĬŇăAňăĭ£çŤíăAŽăČŇăČřăČĹ'ăČěăČĹ'èĹŁçôŮæŦšăČŠéAÿæŁďăAŮăĭ£çŤíăAŽăČŇăČšăČćæŦřăČŠéAÿæŁďăAŮăăAăăAŽăĂČ

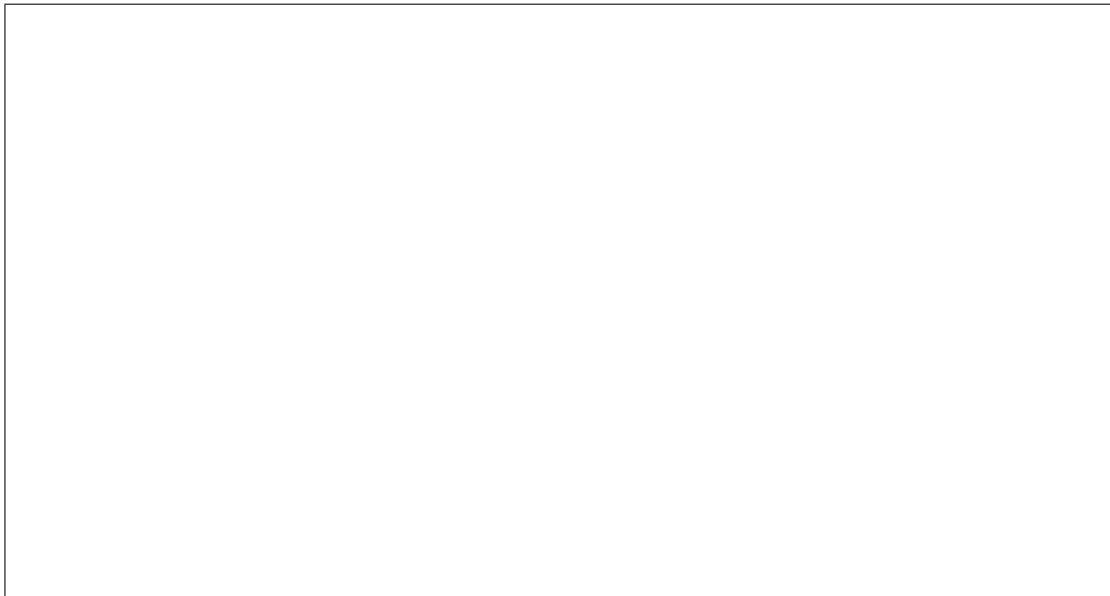


èĹŁçôŮăăAŇçĭČăžEăAŽăČŇăAĹResultsăČĤăČŮăăAŇçŦŦăČŇăăAăăČĹăČĭăČĤăČňăČĹăČăăČňăČôăČĭç■ĹăČŠççžèĹăăAŽăČŇăAšăAĹăă



ăČŦăČšăČĹ'æġŇéĂăăAđèĹŁçôŮçĭŦăedIJăAŦăăAĹBand StructureăAđéČĹăĹEăAňèăĹçd'žăAŦăČŇăAăăAŽăĂČ





EXabyte.ioăAđăČlăČşăCřăĚĹ

EXabyte.ioăAđăžŇăĹŇéŽĚ

**ăČŤăCřăČŮăČşěĹĹčŮ**

**ěăĹěĹăČlăČŇăČňăČőăČijăAđěĹĹčŮ**

ăAşăAşăAşăAřQuantum ESPRESSO ăČŠă;£çŤĩăAŮăAęéĜŚăśďăAđěăĹěĹčěĹĹčŮăAňăAđ'ăAĎăAęèĤăŸŎăAŮăAĹăAŻăĂĆ

ăAşăAşăAşăAřăĂăĂăĜŚăAŮăAđěăĹěĹăČlăČŇăČňăČőăČijăČŚčŮăĜăăAŮăAĹăAŻăĂĆ

ăAĹăAŻăĹăĹăĂăAňăĂăAđěăĹěĹăČlăČŇăČňăČőăČijăČŚěĹĹčŮăAŮăAşăAĎçŤŖăŽăăČăăČăăČăăAđăČęăČŇăČčăČĹăČzăČňăAđăČlăČŇă

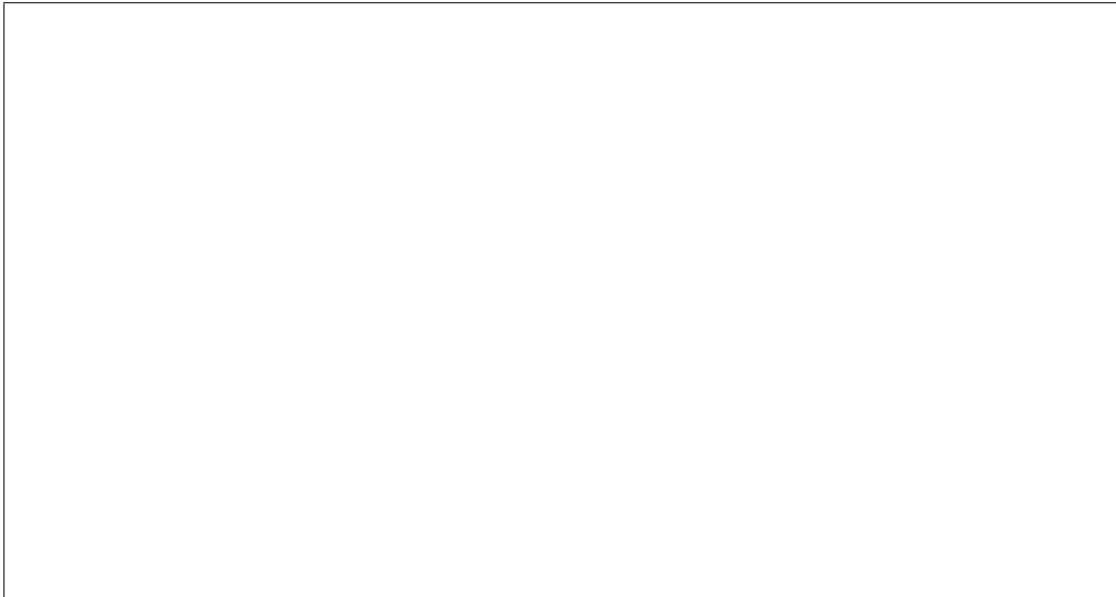
ĹăĂăAŮăAđçŤŖăŽăăČlăČŇăČňăČőăČijăČŚčŮăĜăăAŮăAĹăAŻăĂĆ



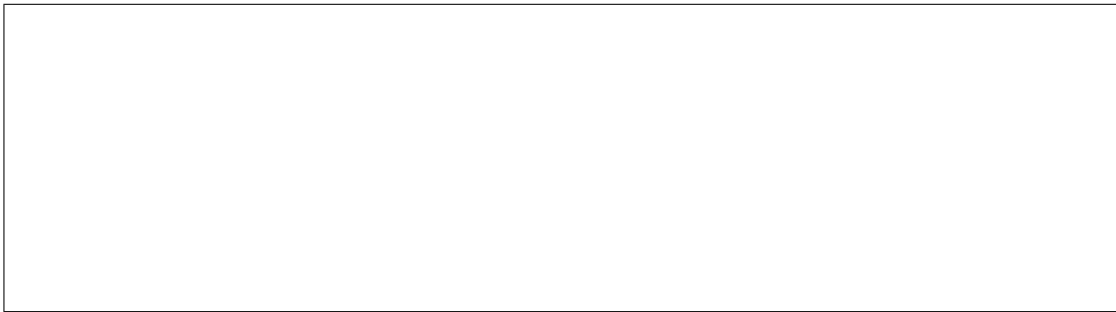


æñqăAńăĂAăzzæĐŔăAőçȦŔăŽúéíăAńăAŮăAșăĆzăĈŕ'ăĈŮăĈćăĈĠăĈńăĈșăȦJæŁŔăAŮăAŷăAŻăĂĆ

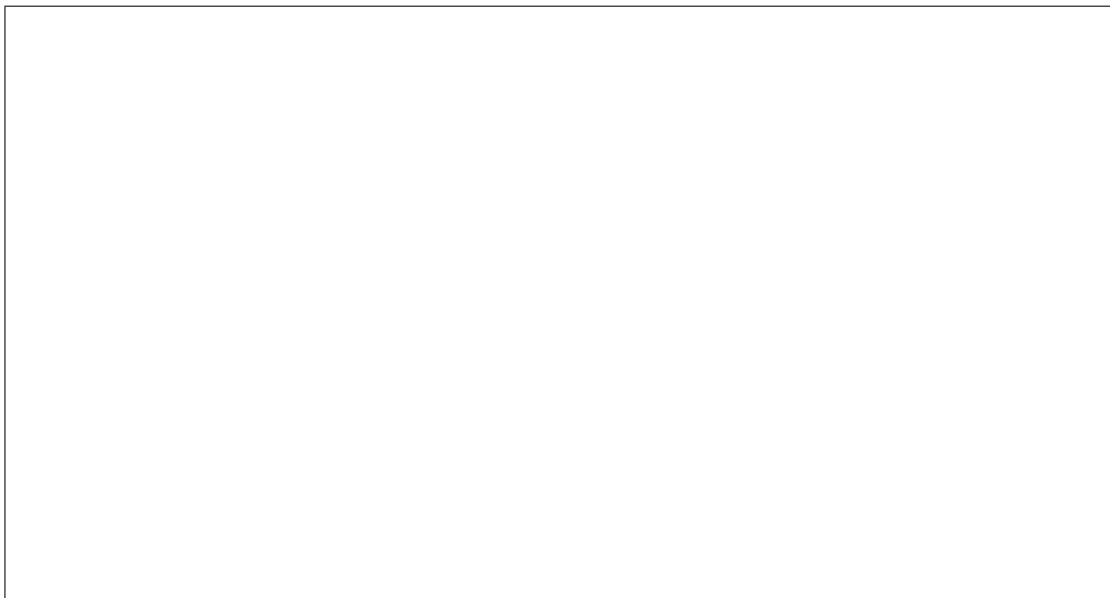

ä;IJæŁŘāAŮāA§āČzāČřāČŮāČćāČĝāČňāČŠēAÿæŁďāAŮāĀAēāléIcāČlāČ■āČňāČōāČijāČŠçőŮāĜžāAŽāČŇāČyāČĝāČŮāČŠä;IJæŁ



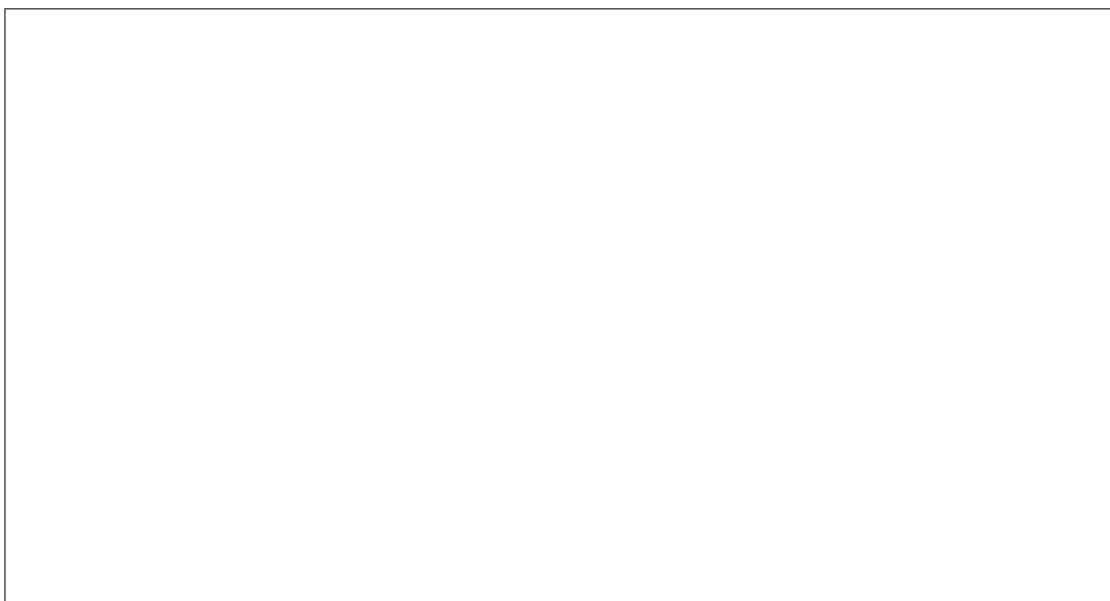
éĜŚāsdeāléIcāČlāČ■āČňāČōāČijāAřāĀAWorkFlowāAőāĀISurface EnergyāĀIāČŠçŤíāAĎāA;āAŽāĀČ



āČňāČČāČlāČlāČŤāAŁāČlāAşkçČzæŤřāAřäÿŇēÍŸāAőēĀŽāČlāAğāAŽāĀČāAşāAşāAğāAřāĀAķçČzæŤřāAřīijŞĀŮīijŞĀŮīijSāĀń



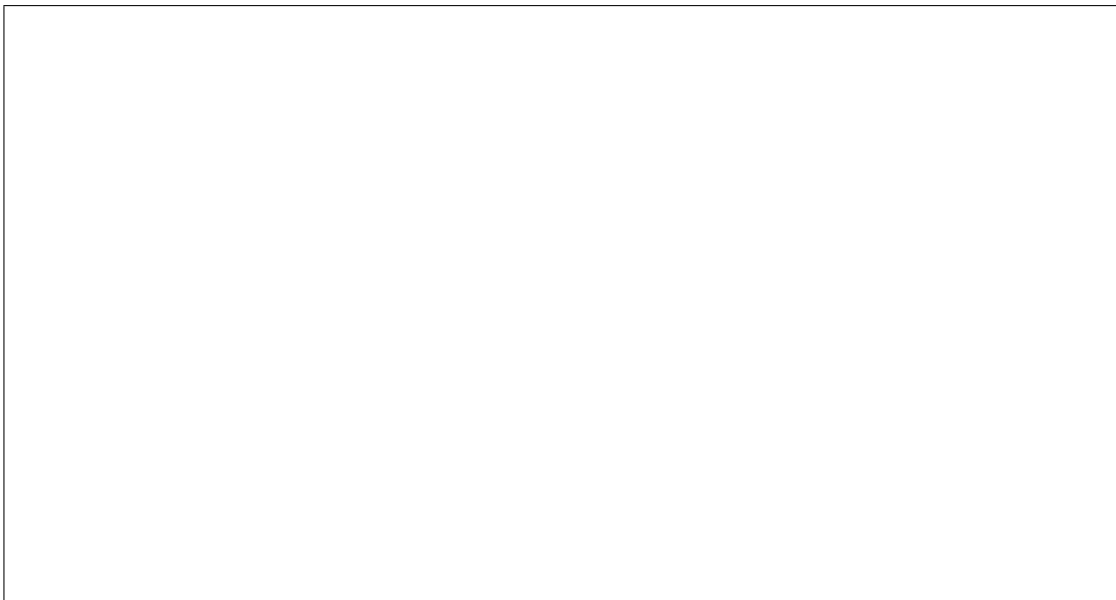
èaÍéÍăĆÍăČ■ăČňăČőăČijelŦçőŮăĀňăŁĚēĕĀăĤæŦĀăČŇăĀŇel■ăőŽăĀŦăČŇăĀęăĀďăĀĹăĀŽăĀĆ



æIJĀăŇăĀňă;ŒçŦíăĀŽăČŇăČřăČŦ'ăČęăČŦ'elŦçőŮæŦ' §ăČŠéĀŸæŁďăĀŮă;ŒçŦíăĀŽăČŇăČşăČćăŦřăČŠéĀŸæŁďăĀŮăĀăĀŽăĀĆ



èíĹçõŮăĀŇçȦĈăžĒăĀŽăĈŇăĀĬResultsăĈĤăĈŮăĀŇçŖĭăĈŇăĀĀăĈĹăĈĭjăĈĤăĈŇăĈĹăĈăĈŇăĈăăĈĭjç■ĹăĈŖççžèĬăĀŽăĈŇăĀŖăĀĭă



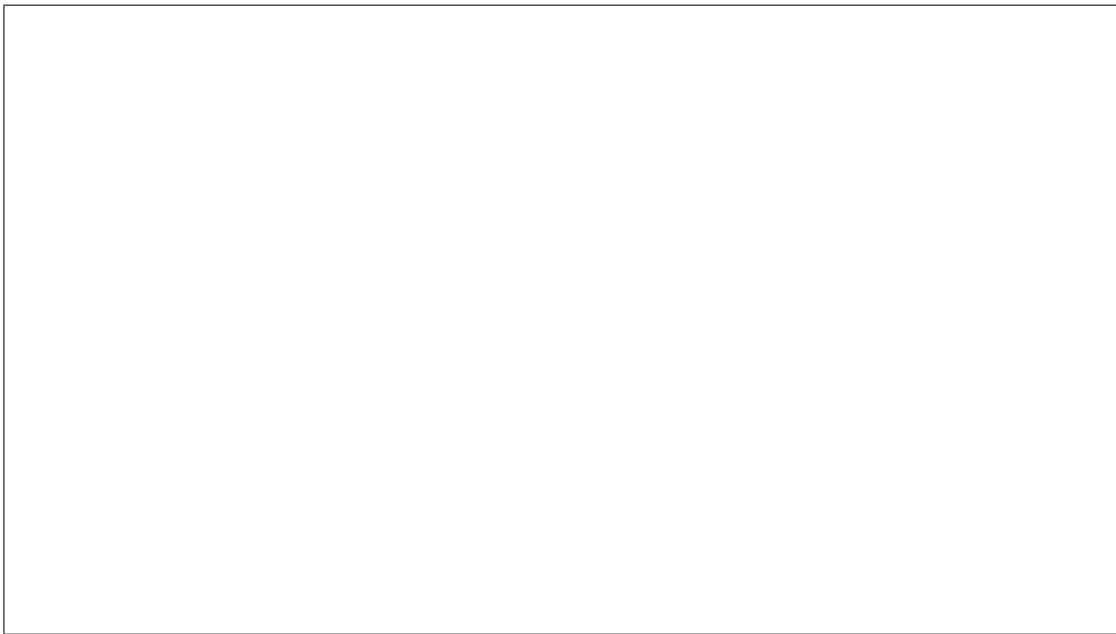
èĹĹĹăĈĹăĈăĈŇăĈăăĈĭjăĀőăĀđ'ăĀřăĀĀSurface EnergyăĀőĕĈĹăĹĒăĀĹèĹçđ'žăĀȦăĈŇăĀĭăĀŽăĀĈ



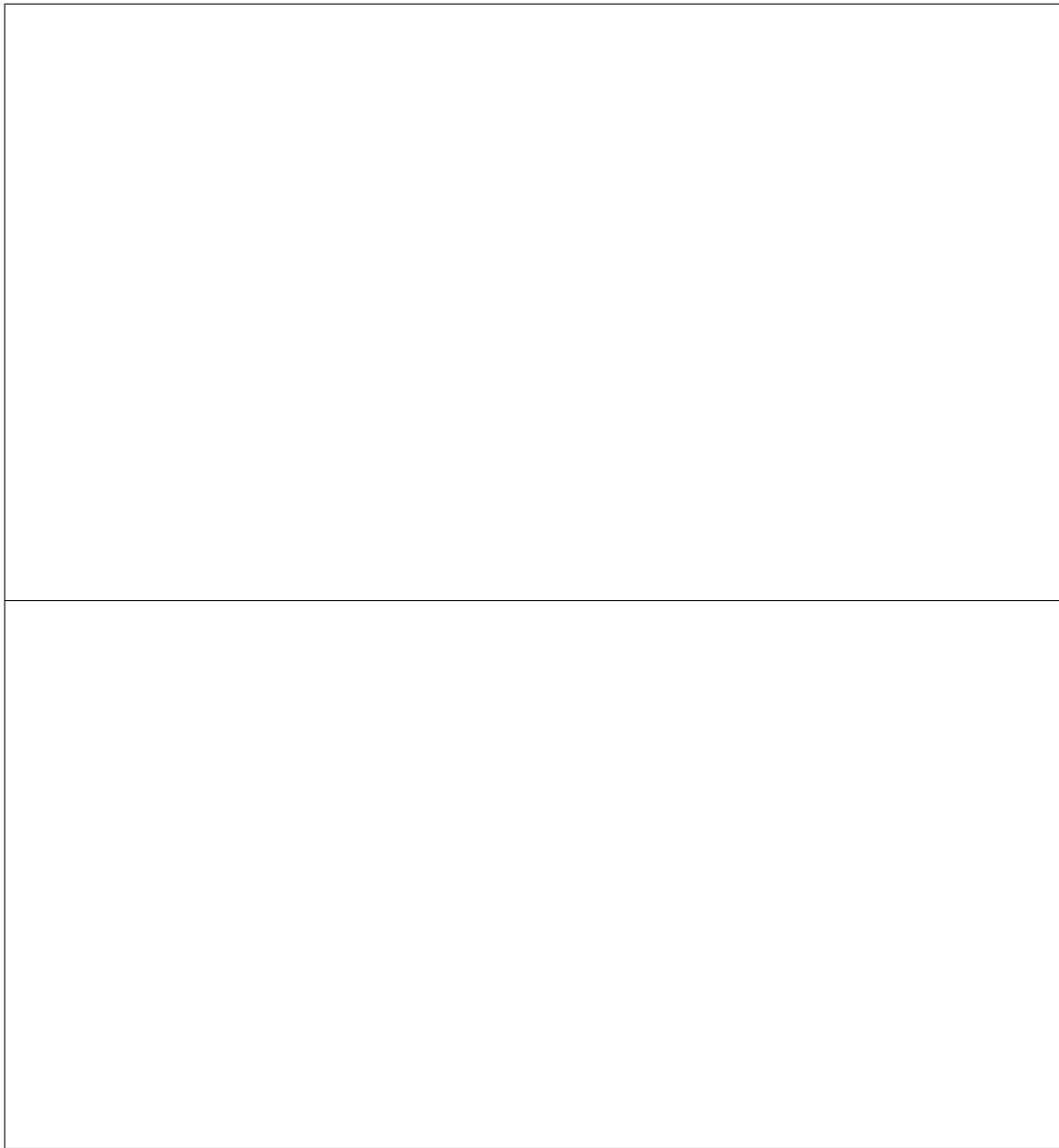
éŽžŘĚŤČďČŇČěČĆčŇ

ãAŞãAŞãAğãAřQuantum Espresso ãĆŠăĲĲŤĲãAŮãAęéŽžŘĚŤČďČŇČěČĆčŇãAŽãČŇæŮźæŞŤãAňãAđ'ãAĐãAęèĲæŸŮãA

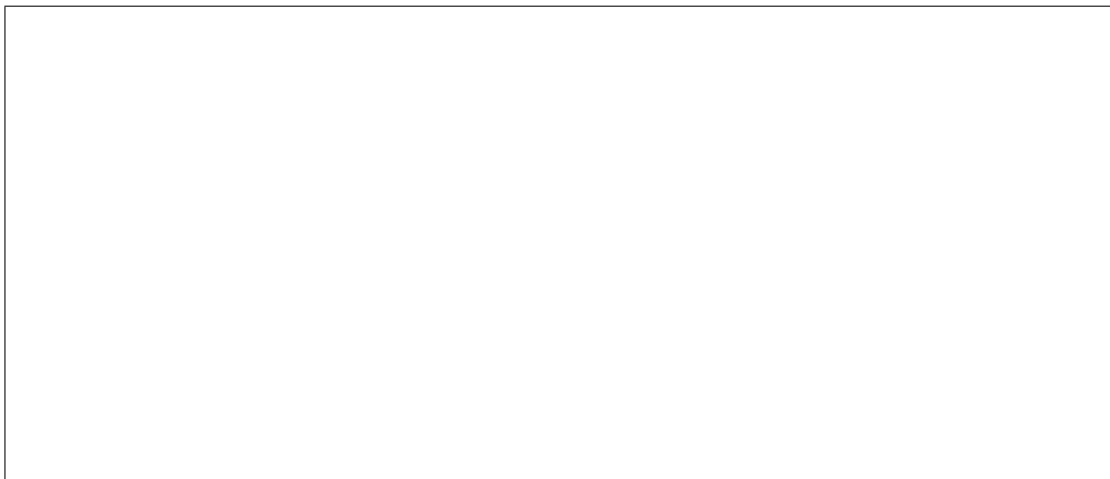
ãČďãČĚãČĲãČćãČňãČŠéAÿæŁďãAŮãAĲãAŽãĂĆăZŁăŽďãAřãČĜãČŤãČĲ'ãČňãČĹãAđSiãČŠĲŤĲãAĐãAĲãAŽãĂĆ



éŽžŘĚŤČďČŇČěČĆčŇãAŮãAňãAřãĂĂWorkflowãAđãĂĲelectronic\_dielectric\_function(QE6.3)ãĂĲãČŠĲŤĲãAĐãAĲãAŽãĂĆ

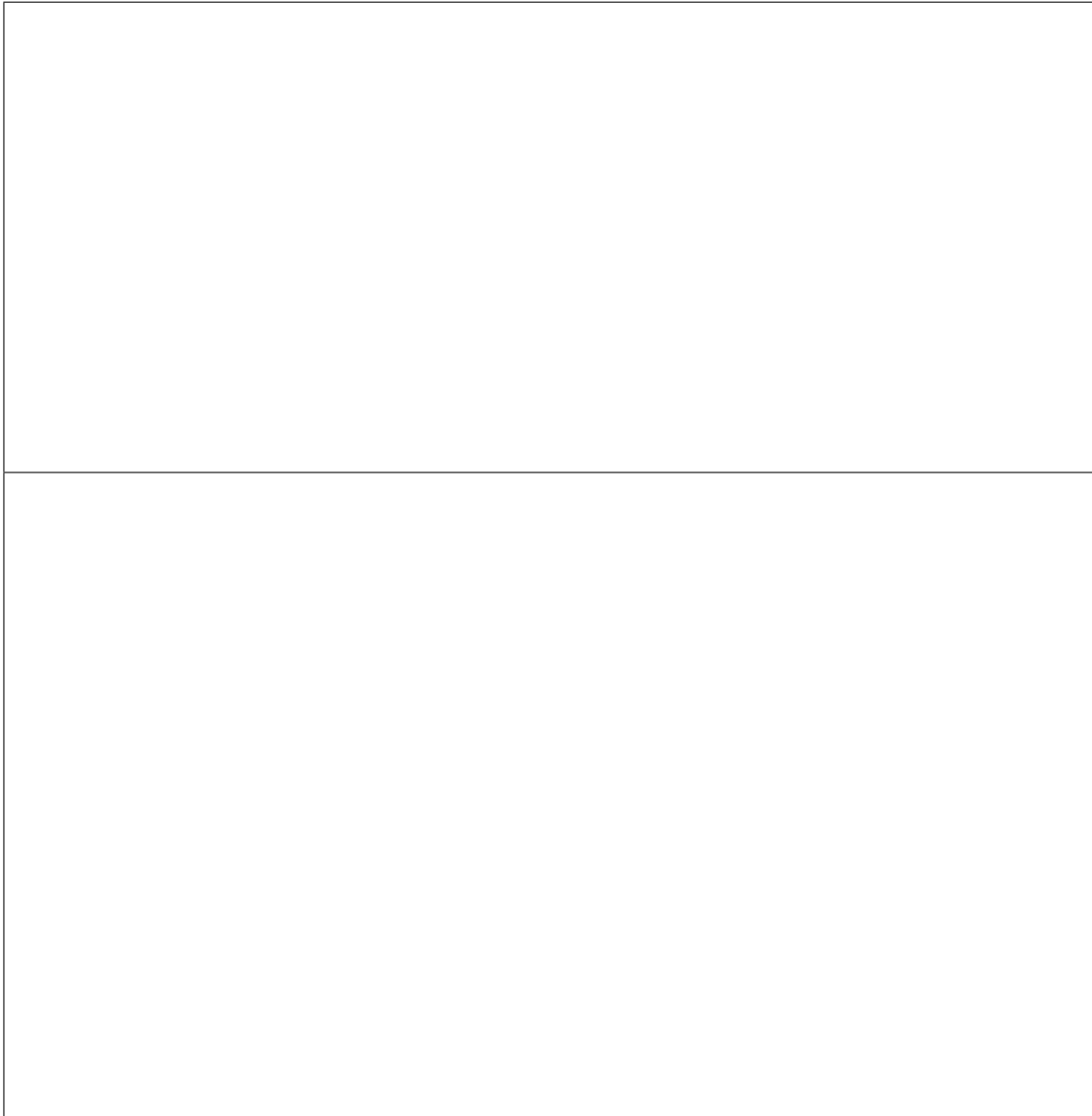


éŽzâ■ŘěȚŸéŽzéŮćæȚřăĂőěÍŁçõŮăĀńăŁĚěęĂăĤæȚĂăČŇăĂŇěİ■ăőŽăĂȚăČŇăĂęăĂďăĂċăĂŻăĂĆ

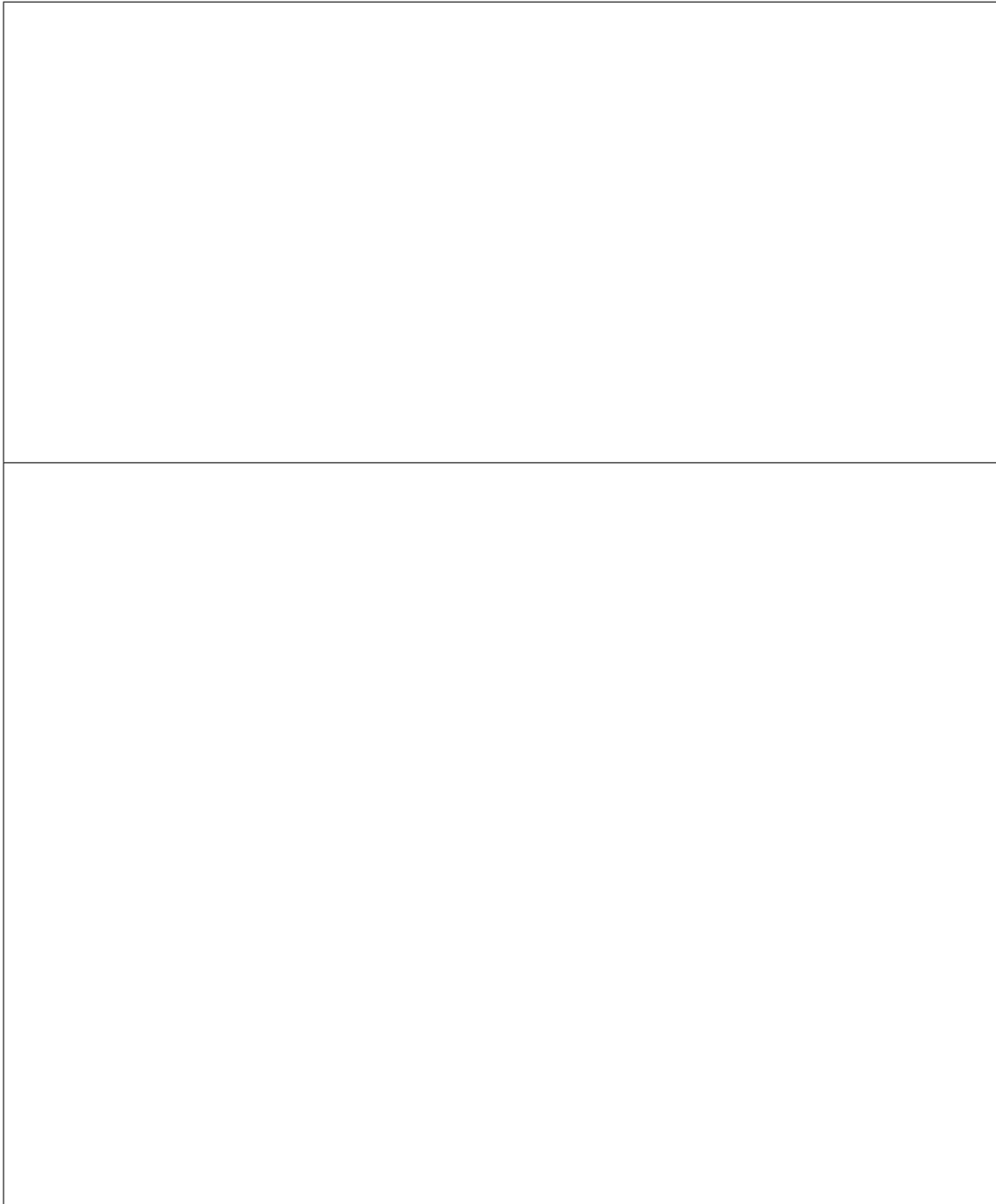


kĉĆzæŤřăĆĎěĂĆæĚőăĂŽăĆŇăČŘăČșăČĹ'æŤřăĂĭăĂĭ'ăĂřèĠăŇĭŤĉŽĎăĂñèĭ■ăőŽăĂŤăĆŇăĂęăĂĎăĂĭăĂŽăĂŇăĂĂăĚĚèęĂăĂĭăăťăă





éŽzâ■ŘetŸéŽzéŮćæŦřāAøēÍŁçõŮāAğāČŘāČšāČĽ'āĆōāČćāČČāČŮèčIĲ■č(āČŘāČšāČĽ'āĆōāČćāČČāČŮāAøāøšéÍŠāĀđ'āAĭēÍŁçõŮā



éŽză■ŘěŦŸéŽzéŮćæŦřăAđěĺĹϙōŮăAřăČŎăČňăČăăŦĩă■ŸăďŇăæŖňăČĩăČĚăČšăČůăČčăČňăČšă;ŦϙŦĩăAžăČŇăŦĚĚĕAăAăŇăAČăČĹăAă

ăAšăAšăAğăAřăČĜăČŦăČŦăČňăČĹăAğă;ŦϙŦĩăŘĕĈ;ăAĤDojoăŖňăČĩăČĚăČšăČůăČčăČňăČšă;ŦϙŦĩăAŮăAăăAžăĂĆ

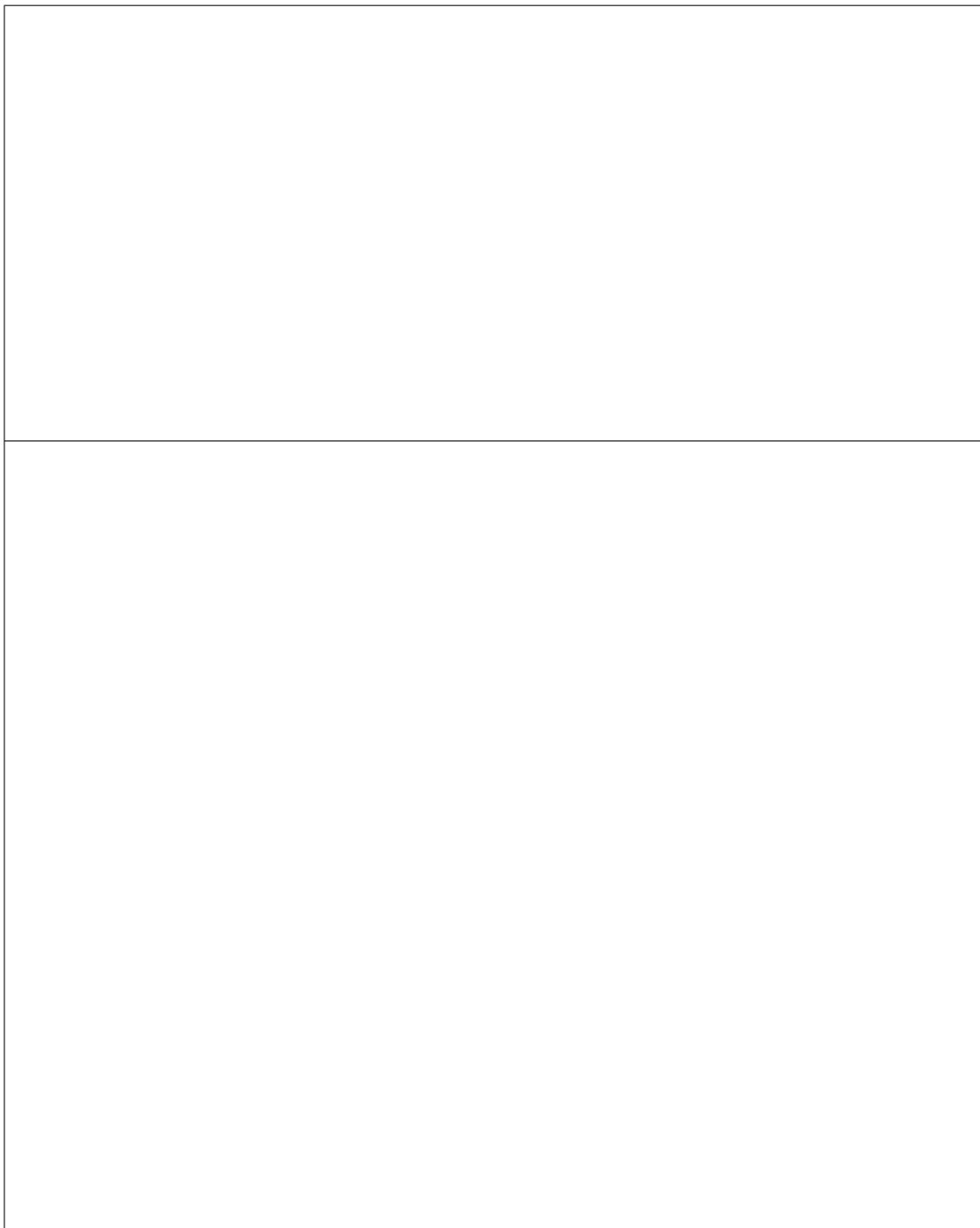
pw\_calcsăČŦăČ■ăČijăAđăĂĬPseudopotentialăĂĩăAđSiăŎšă■ŘăAđăČŮăČňăČĂăČĕăČšăČqăČŇăČěăČijăAăŇăČĹ'ăĂĬSi\_pbe\_dojo-  
oncv\_0.4.upfăĂĩăČŠăAŸăĹďăAŮăAăăAžăĂĆ

(DojoæŞňăČíăČĚăČşăĆuăČcăČŇăzěăd'ŮăAőăČŎăČňăČăă£Iă■ŸădNæŞňăČíăČĚăČşăĆuăČcăČňăČşă;£çŤíăAžăČŇăat'ăŘĹăAŕæŞňăČ

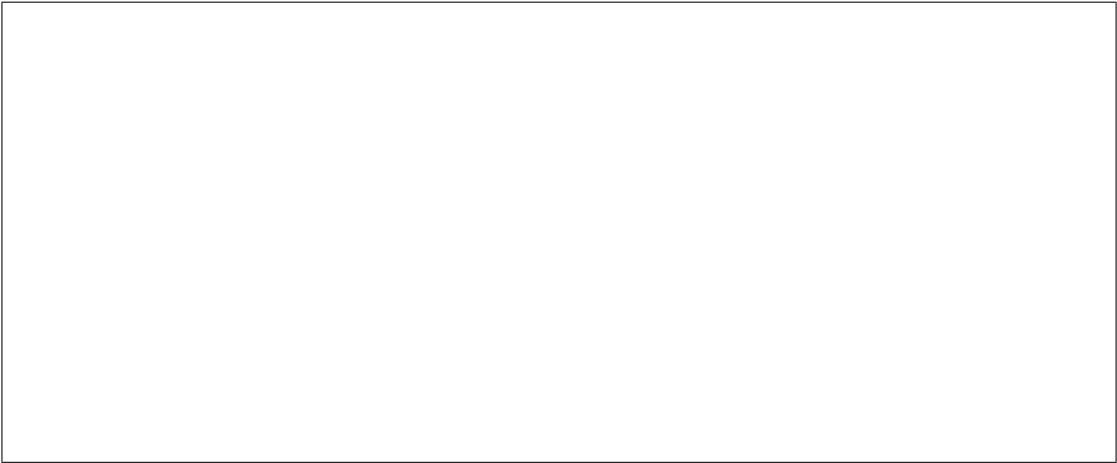


ăAŭăAşăĂAæIJňWorkFlowăAğăAŕetŸéZzéŮćæŤřăAőelĹçőŮçŤŘædIJăČŞăŘŕeçŮăŇŮăAŮăAŭăAžăAŇăĂAèalışd'žăAžăČŇăČíăČ■ă

WorkFlowăAŇăČĹmk\_graphăGŞplot\_graphăČŞéAŷæĹďăAŮăĂAçŤzéİcâyŇăAőăĚěăĹZéČíăĹĚăAőEminăAŭăăČĹăAşEmaxăAŕnèalışd



æIJĂă;ŇăAňă;ŁçŤlăAŽăČŇăČřăČl'ăČěăČL'èlŁçőŮæł §ăĆŠéAÿæŁďăAŮă;ŁçŤlăAŽăČŇăČšăĆăæŦřăĆŠéAÿæŁďăAŮăAăăAŽăĂĆ



ěÍŁçõŮāAŇçŧČäžEāAZāČŇāAÍFILESāČŁāČŮāAŇçŘĹāČŇāĀAäžěäÿŇāAőāČŧāČqāČď'āČŇāAŇāĜžāŁZāAŧāČŇāAĹāAŽāČ

āČŧāČqāČďāČŇāŘ■	èĥæYŎ
eps_data.csv	èĤŸéZzéŮćæŧřāĜžāŁZāČŧāČqāČď'āČń(csvāĵćāĵŘ)
eps_real.png	èĤŸéZzéŮćæŧřāőšéČĹāAőāZšāČŧāČqāČď'āČń
eps_imag.png	èĤŸéZzéŮćæŧřēZŽéČĹāAőāZšāČŧāČqāČď'āČń
eps_reflectivity.png	āŘ■ārDçŎĜāAőāZšāČŧāČqāČď'āČń
dielectric_constant.out	èĤŸéZžçŎĜāAőēÍŁçõŮçŧŘæđIJ

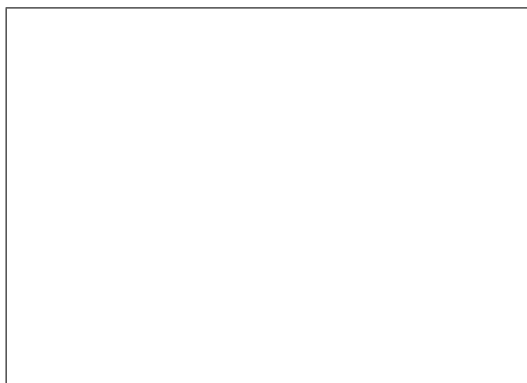


āZšāČŧāČqāČď'āČŇāČšāČřāČĹāČČāČřāAZāČŇāAĹēĤŸéZzéŮćæŧřāAŁāČĹāAšāŘ■ārDçŎĜāAőāČřāČŧ'āČŧāAŇāŘřēçŮāŇŮāAŧāČŇā

ăČžèĭŸéŽžŮĞăőșéĆí



ăČžèĭŸéŽžŮĞèŽŽéĆí



ăČžăŔ■ăřĐçŮĞ



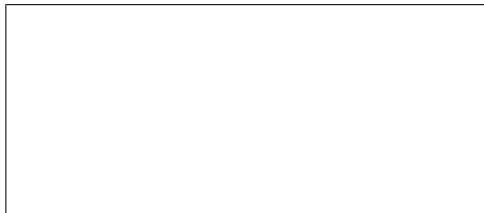
EXabyte.ioăAğăČlăČșăĆřăĚĹ

EXabyte.ioăAğăžŇăĭŇéŽĚ

ăĹĚă■ŔăĀőăŔŷăŔŎăČăČăČŕăČĹăČŇăĀőĹĹčŏŮ

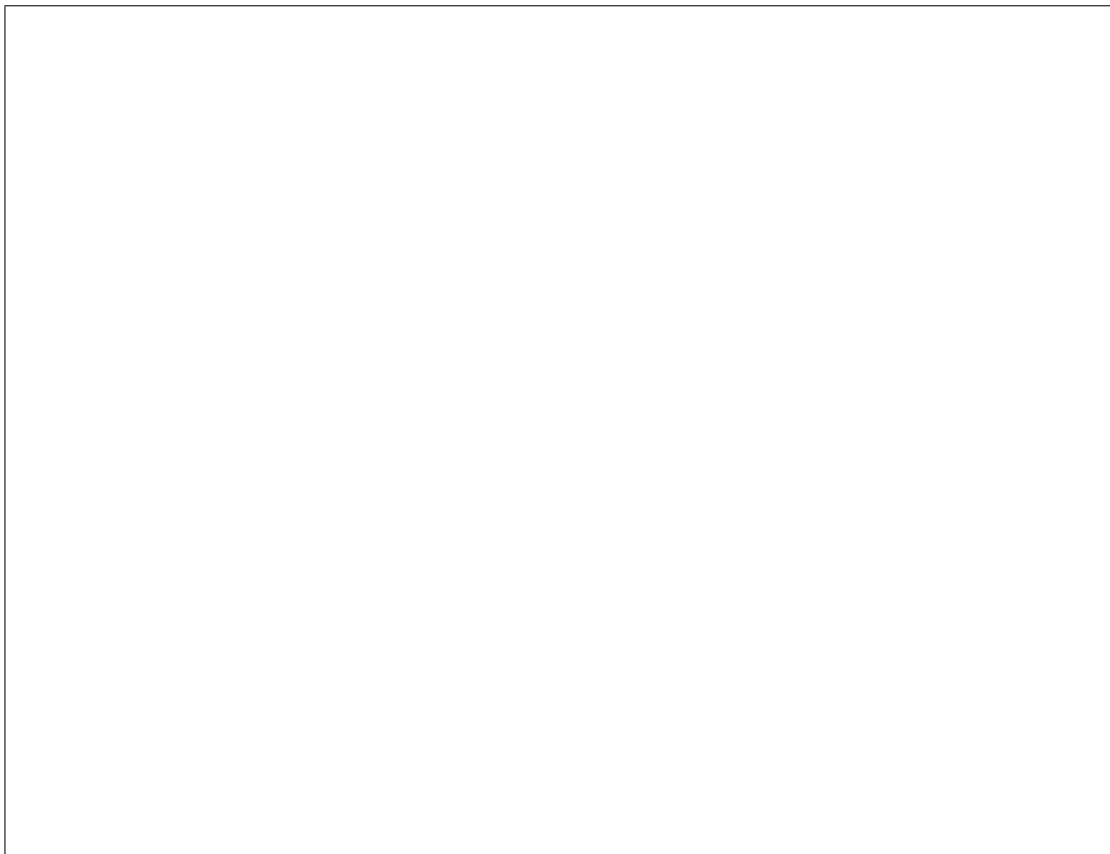
ăĀŤăĀŤăĀŤăĀŤQuantum Espresso ăČŠă;ĚĚŤlĚĀŮăĀĚăĹĚă■ŔăĀőăŔŷăŔŎăČăČăČŕăČĹăČŇăČŠĹĹčŏŮăĀŤăČŇăŮŷăŤăĀŇăĀď'ă

ăĹĚă■ŔăĀőĹĹčŏŮăČăČăČŕăČŇăĀŕExabyte.ioăĀĹĹăČăŕăŕăČ;ăĀĹăĹĚă■Ŕă;ĪăĹŔăČ;ăČŤăČĹăŎŎMI-nanosysăĀŔ ăČŠĚŤlĚĀďăĀĚ;ĪăĹŔăĀŮăĀĹăĀŤăĀČ

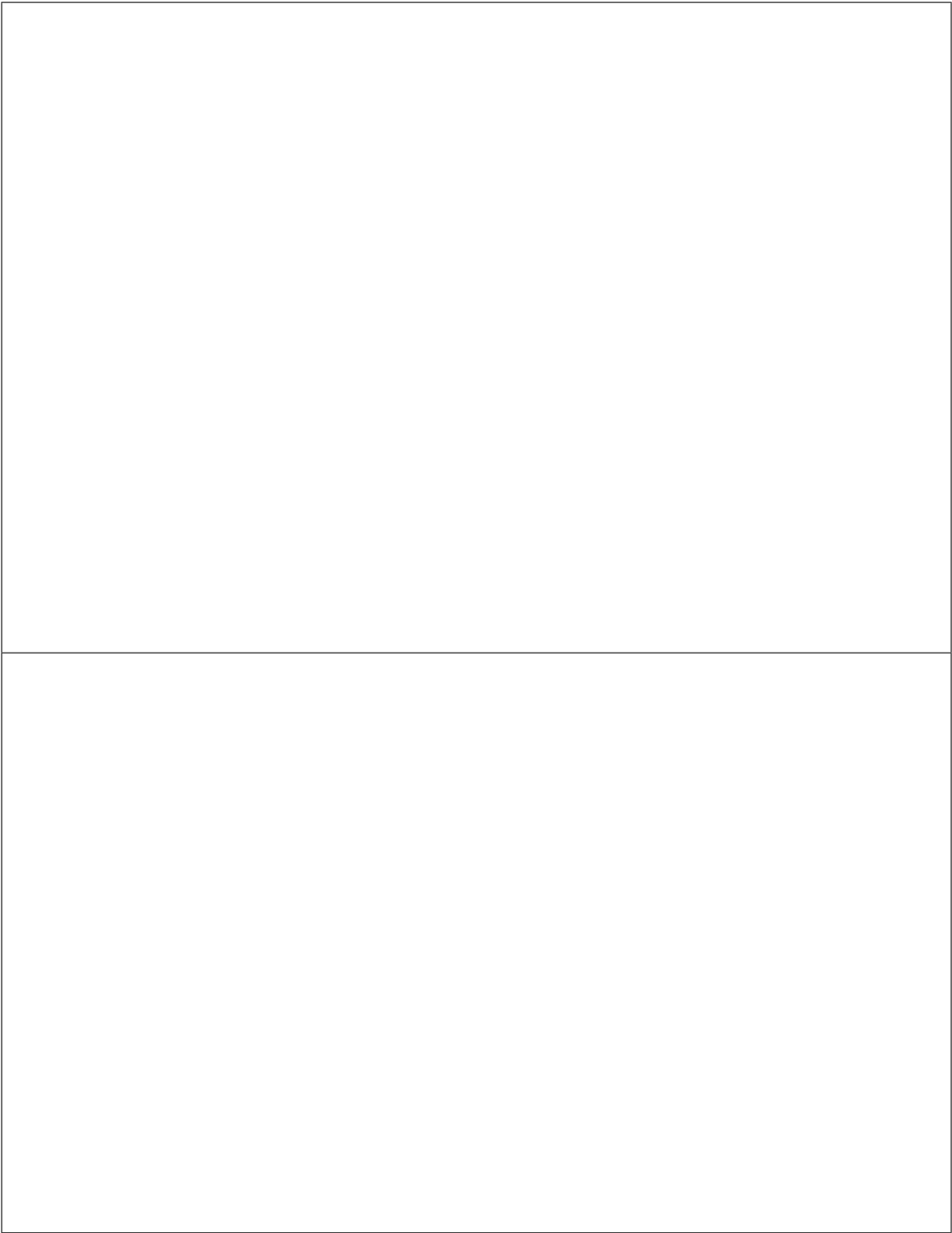


MI-

nanosysăĀŇăČĹExabyte.ioăĀŇĚŷčĚăĀăĀŮăĀŤĹĹčŏŮăČăČăČŕăČŇăČăČăČďăČĚăČĹăČăČŇăĀŇăČĹăĀŷăĹďăĀŮăĀĹăĀŤăĀČ

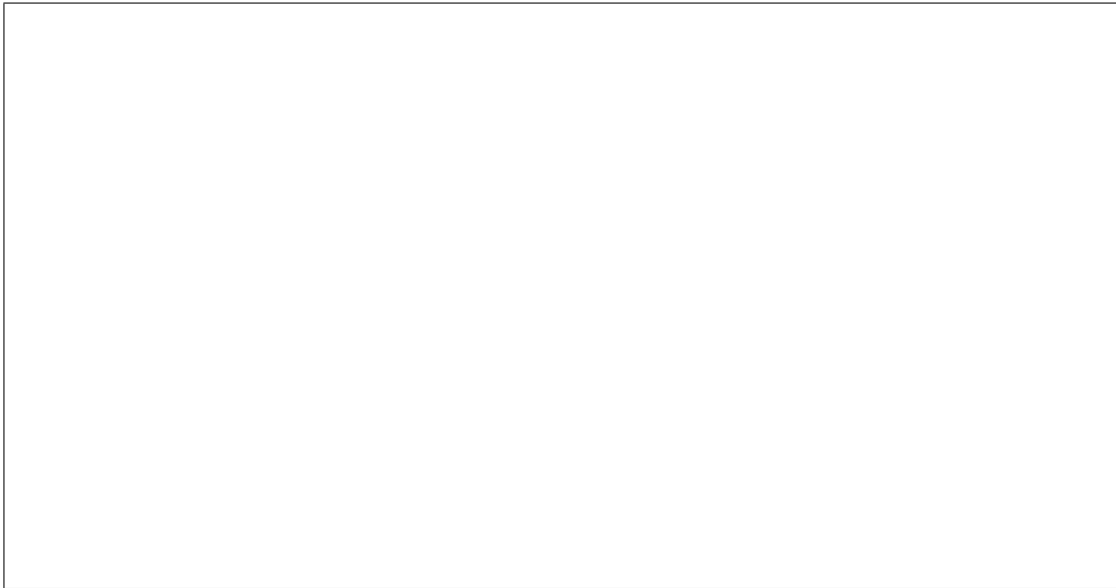


ãŁEã■ŘãAõãŘyãRÕãČzãČŽãČřãČŁãČňãAõèÍŁçõŮãAňãAřãĂAWorkflowãAõãĂİabsorption\_spectrum\_for\_molecule(QE6.3)ãĂİãČŠ

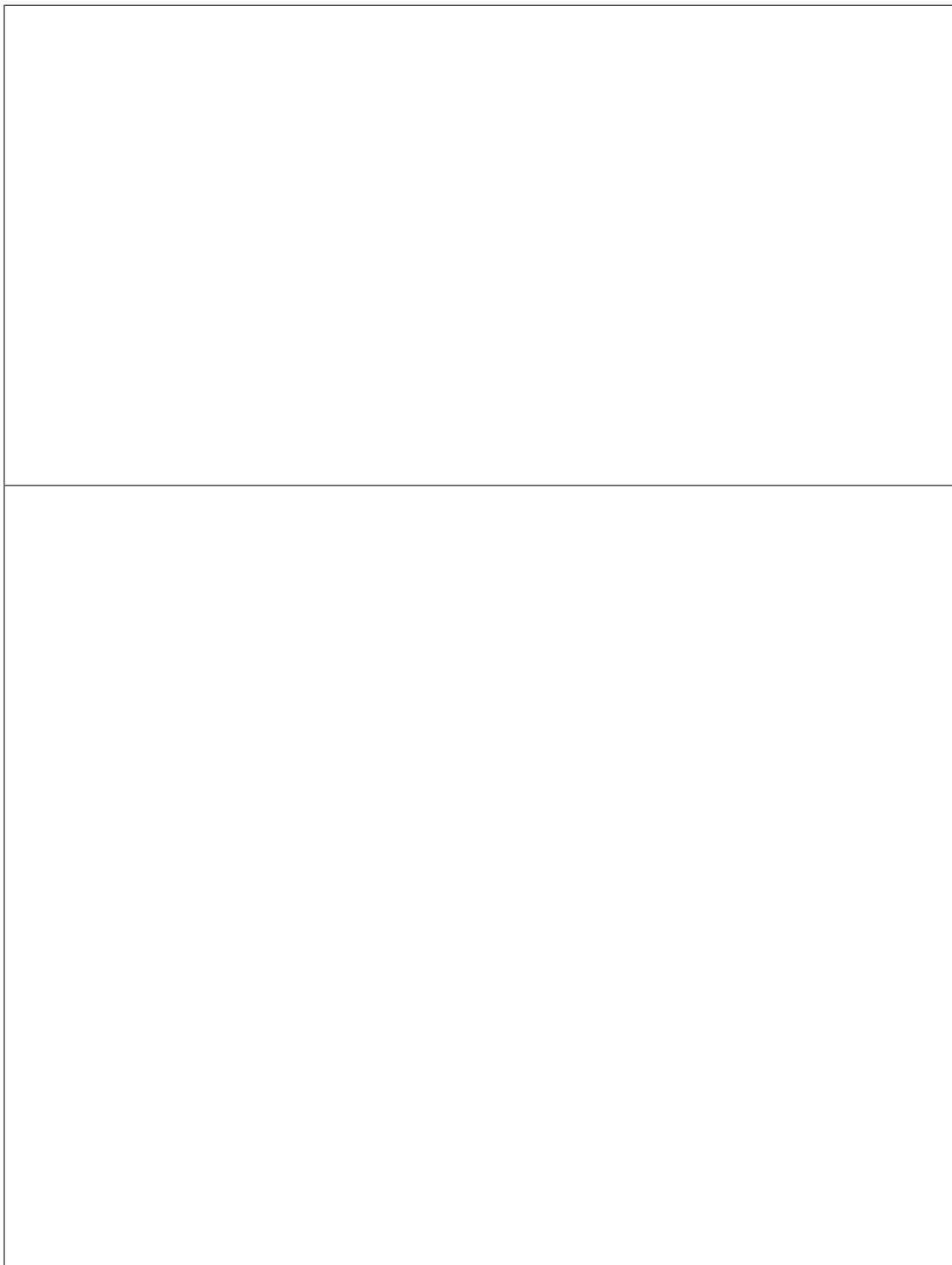


ãŘyãRÕãČzãČŽãČřãČŁãČňãAõèÍŁçõŮãAňãĚëAãAłætAãČŇãAňĚÍ■ãõŽãAŤãČŇãAęãAĐãAĹãAŽãĂĆ

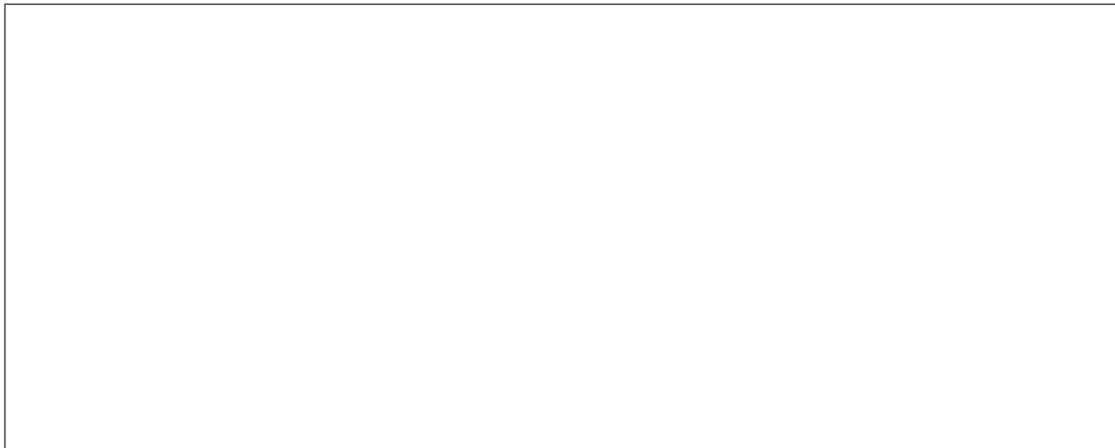




æIñWorkflowăAğăAřăŘÿăRŎăĆzăČžăĆřăĬăĈăăAőěÍĬçőŮçȚŘæđIĴăĈŠăŘřêĚŮăŇŮăAŮăAĭăăZăăŇăăĂăèłçd'žăăŽăăĆŇăĆłăăČăă



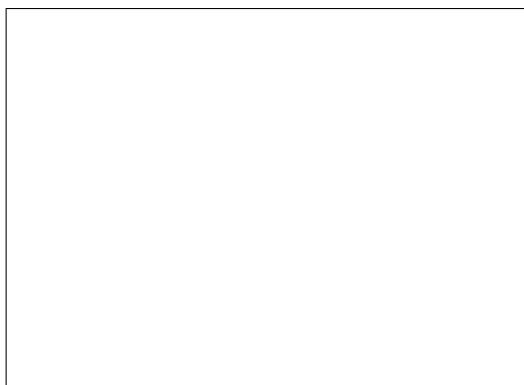
æIJĂăŃăĀă; ξϙŤĩăĈďăĈNăĈěăĈćăĈń, Release 1.0



èÍŁçõŮăĀŇçĭĆăžĒăĀŽăČŇăĀÍFILESăĆŁăČŮăĀŇçŖĹăČŇăĀĀăžěäÿŇăĀőăČŦăĆăăĆď'ăČŇăĀŇăĠžăĹŽăĀŦăČŇăĀĹăĀŽăĀĆ

ăČŦăĆăăĆďăČŇăŖ■	èĭñæŸŎ
spectrum.csv	ăŖŷăŖŎăČžăČŽăČřăČĹăČŇăĠžăĹŽăČŦăĆăăĆď'ăČŇ(csvăĭćăĭjŖ)
spectrum_eV.png	ăŖŷăŖŎăČžăČŽăČřăČĹăČŇ(eVă■Ÿă■)ăĀőăŽşăČŦăĆăăĆď'ăČŇ
spectrum_nm.png	ăŖŷăŖŎăČžăČŽăČřăČĹăČŇ(nmă■Ÿă■)ăĀőăŽşăČŦăĆăăĆď'ăČŇ

ǎZşǎČTǎCǎǎĆd'ǎĈǎĆŠǎĆrǎĈǎCCǎĆrǎAZǎĆNǎAǎIǎŘyǎRŌǎĆzǎČZǎĆrǎĈLǎĈnǎAǎōǎĆrǎĈl'ǎČTǎAǎNǎRǎéeUǎĀNŪǎAǎTǎĈNǎAǎǎAZǎĀĆ



EXabyte.ioAŁĆśĆřĚĹ

EXabyte.ioÃAŁăžÑä¿ÑéZĚ

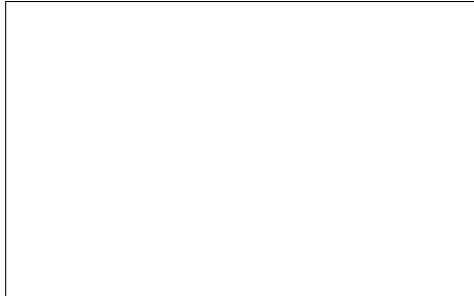
## IRăĂAŖRamanăČzăČŽăČřăČĹăČňăAőěÍĹčõŮ

ăAşşăAşşăAğăAŕQuantum Espresso ăČŠăĲčŤlăAŮăAęIRăĂAŖRamanăČzăČŽăČřăČĹăČňăČšěÍĹčõŮăAŽăČŇăŮžæşŤăAňăAđ'ăAĐăA

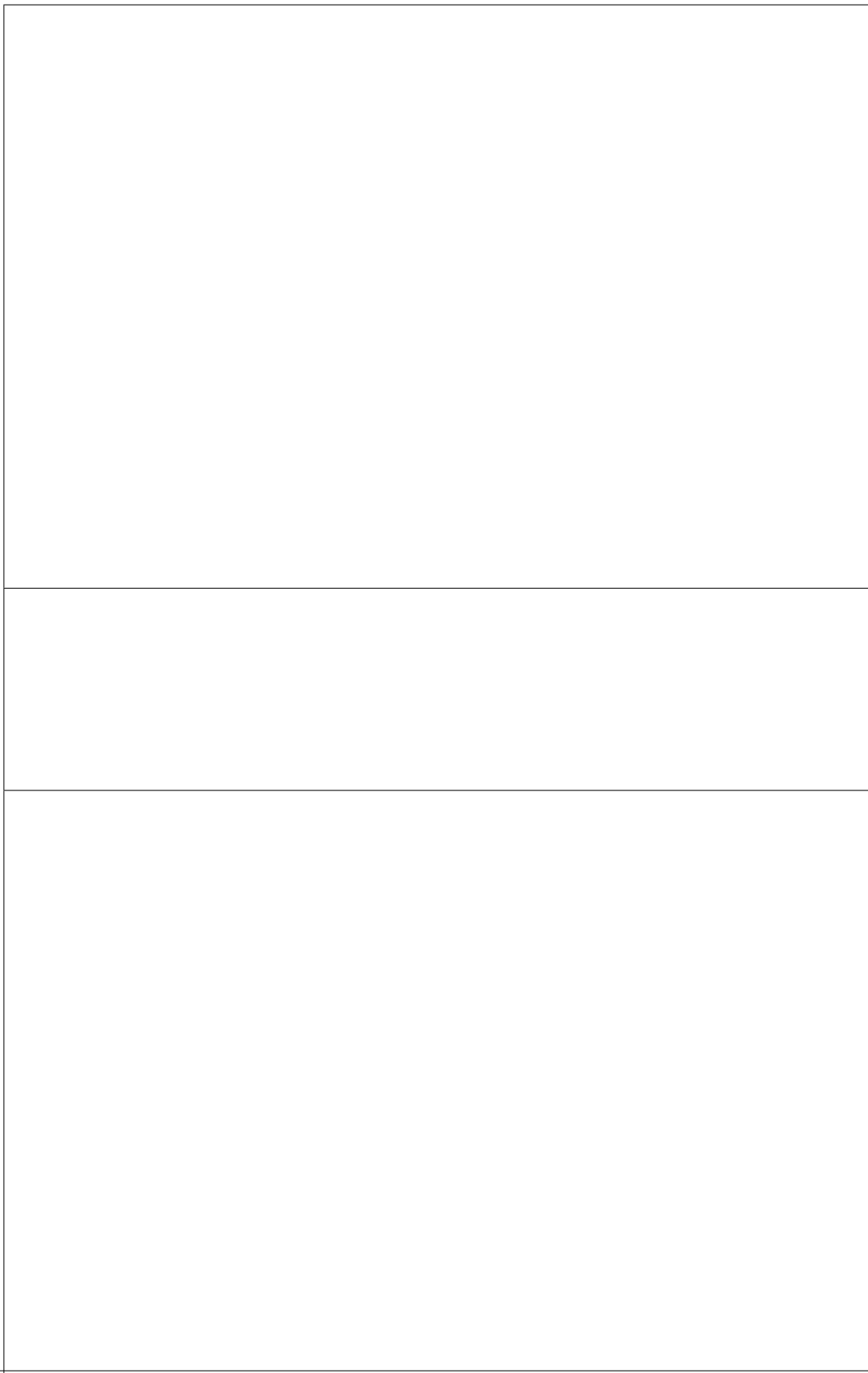
ěÍĹčõŮăČćăČĜăČňăAňăAŕSiO<sub>2</sub> (stishovite)ăČŠčŤlăAĐăAęèĤăŸŎăAŮăAĹăAŽăĂČImport

MaterialsçŤžéĹăAğçĹŦ'èşĹăŘ■-

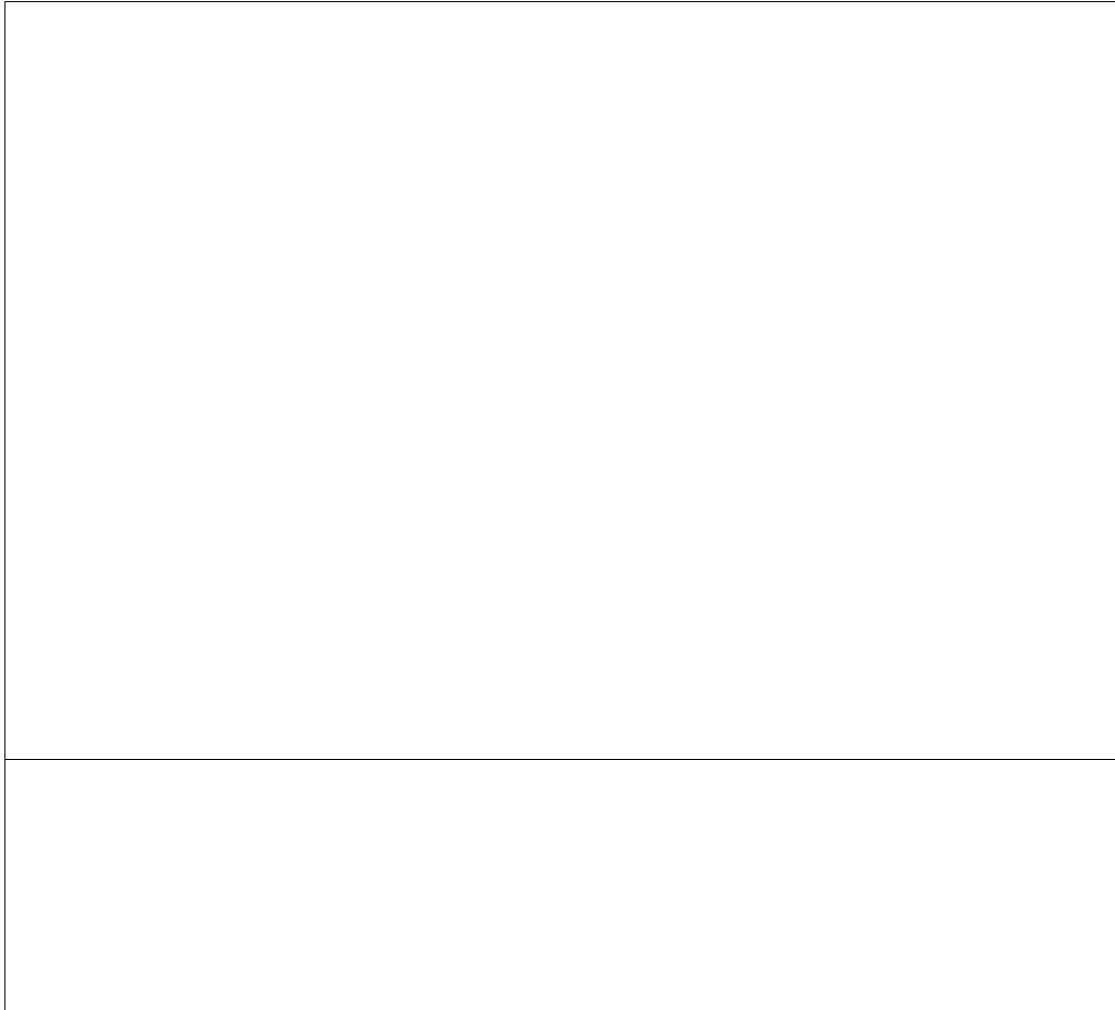
SiO<sub>2</sub>ăČŠăđ'ĲčŦ' ćăAŽăČŇăAşşăAĹăAğçĹŖăŽŭæğŇéĂăČŠăĚăĹŇăAŽăČŇăAşşăAĹăAňăAğăA■ăAĹăAŽăĂČ



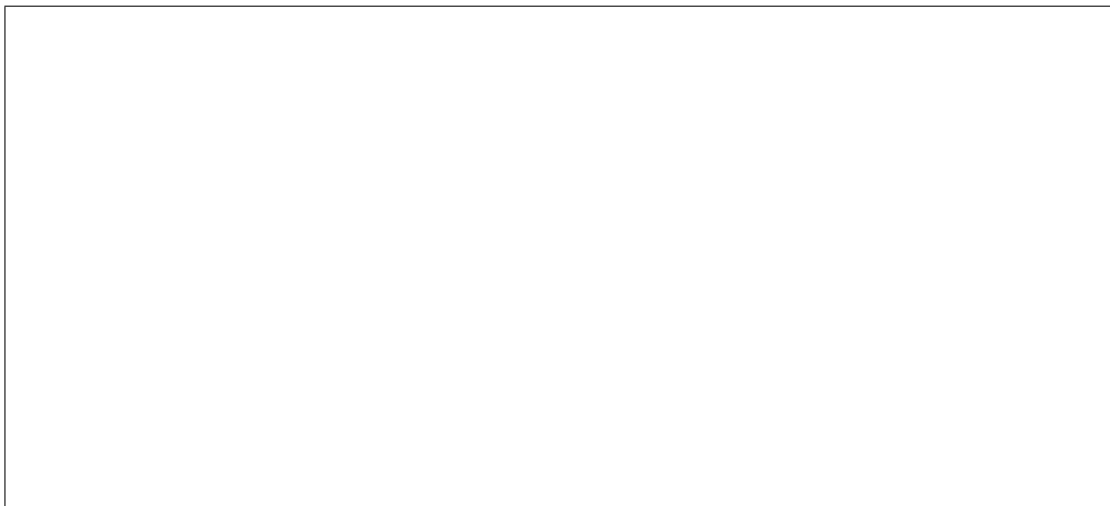
ăĚăĹŇăAŮăAşşăSiO<sub>2</sub> (stishovite)ăAőěěÍĹčõŮăČćăČĜăČňăČšăČďăČĚăČĹăČćăČňăAŇăČĹ' éAŷăĽďăAŮăAĹăAŽăĂČ



IRăĂAŖamanăĆžăČŽăĆřăČĹăČňăAőèÍĹçõŮăAŕăAŕăĂAWorkFlowăAőăĂİIR-  
Raman\_spectrumăĂİăČŠçŤíăAĎăAĹăĂAŽăĂĆ

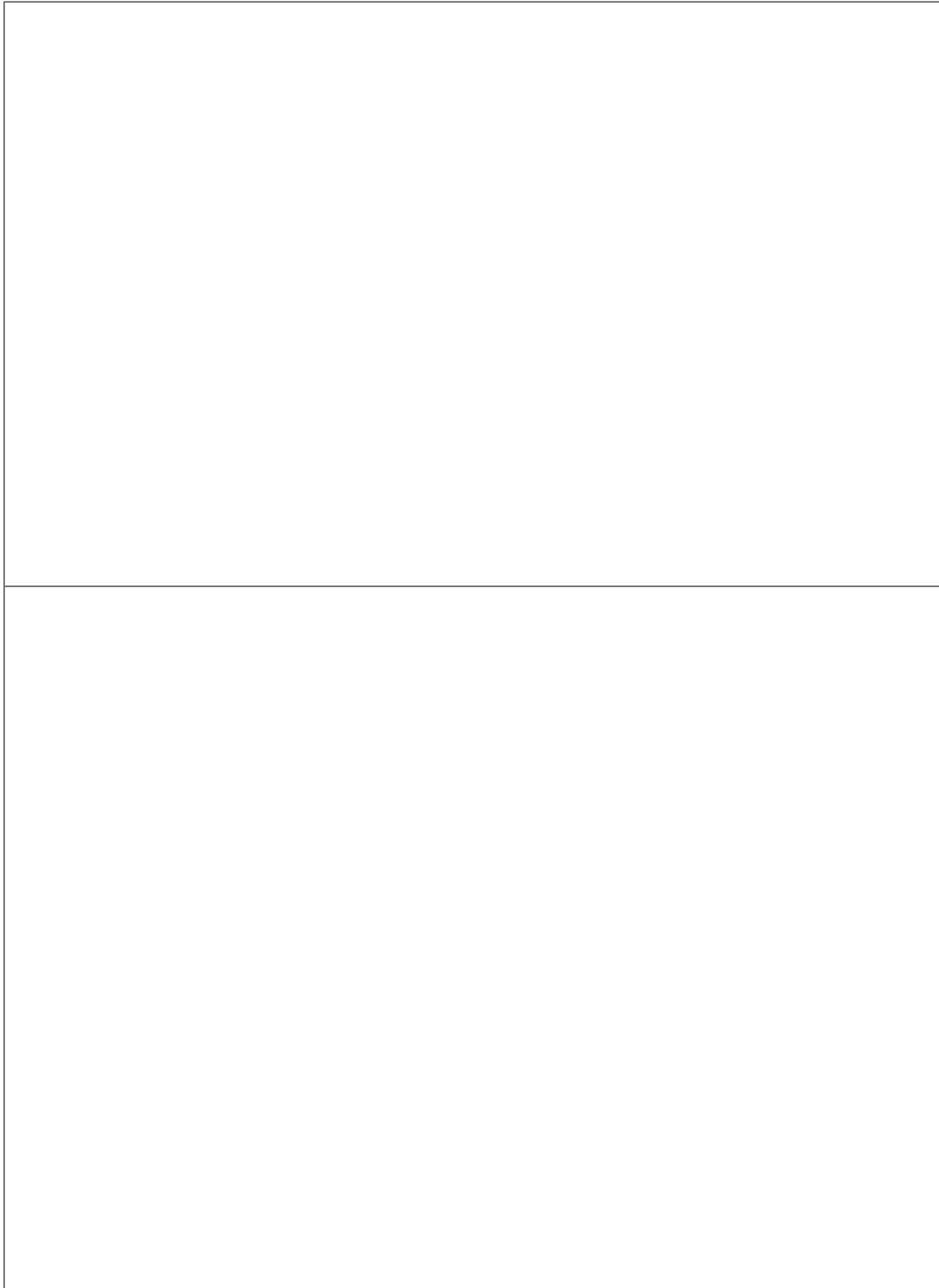


IRăĂAŖamanăĆžăČŽăĆřăČĹăČňăAőèÍĹçõŮăAŕăAŕăĂAWorkFlowăAőăĂİIR-  
Raman\_spectrumăĂİăČŠçŤíăAĎăAĹăĂAŽăĂĆ



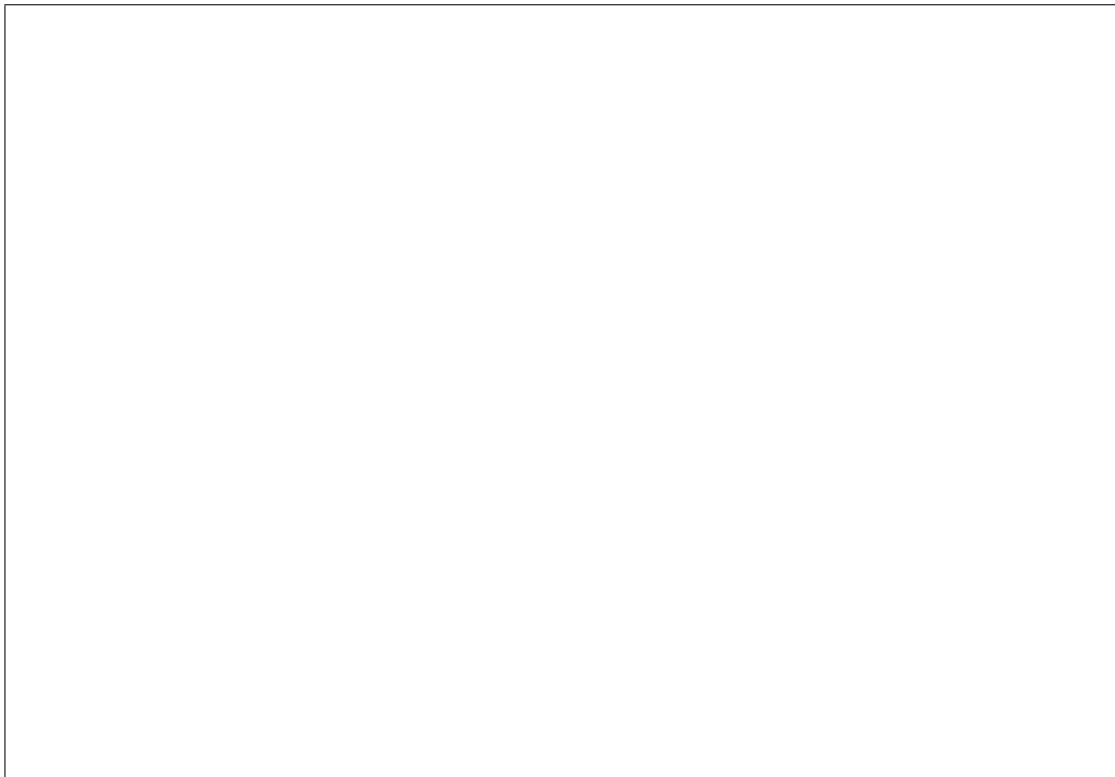
kçĆzæŦřăĎăĆńăČĎăČĹăČĹăČŦăČĹăČ■ăČńăČőăČijăĎ'ăAĥăAĴ'ăAřêĠăŦŦçŽĎăAńêĹ■ăőŽăAŦăĎăAęăAĎăAĵăăAŽăAŇăĂAăĹĚęę  
relax(æăijă■ăőŽăŦřăAĴăĤĚĉĆĹăŽğăĴăăAőăŦŦæŽĆæĴĂĉĴĴ'ăŦŦŦ)ăAńăđ'L'æŽt'ăAŦŦăAęăAŦăăAŦăăAŦăăAĎăĂĆ



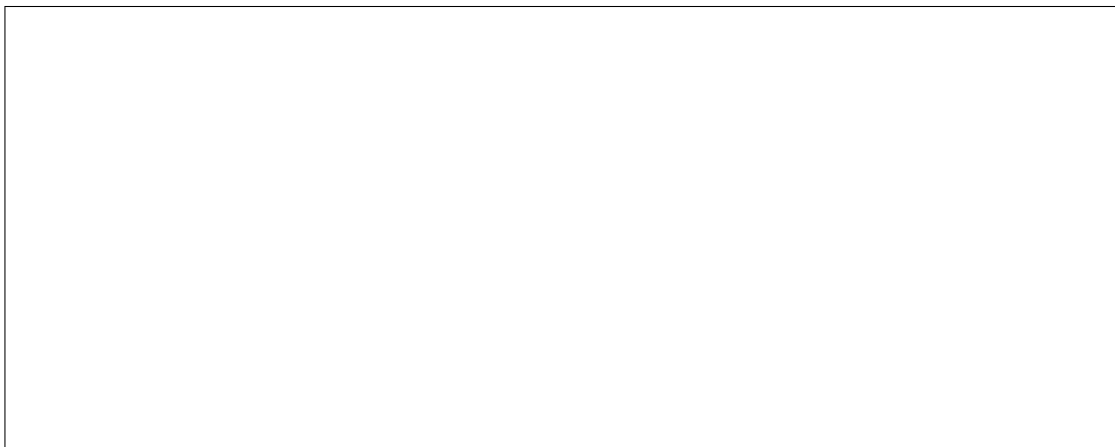


RamanăĆzăČžăĆřăČĹăČŇăAőelĹçõŮăAřăžd' æRŽçŽýéŮćăČíăČĚăČšăČůăČčăČŇăAńLDAăČŠăĂAæšňăČíăČĚăČšăČůăČčăČŇăAńăČ  
FHI-PPæšňăČíăČĚăČšăČůăČčăČń ěČŠăČĂăČĕăČšăČ■ăČíăČĹ'ăAŮăĂA

WorkflowãĀŇãĹæŞñãČíãČĚãČšãČůãČčãČňãČŠë£;đŁă ģČŠãŖĆëĂČãĀñëí■ăőŽăĆŞëãŇãĀďãĀĭãĀŽăĂĆ

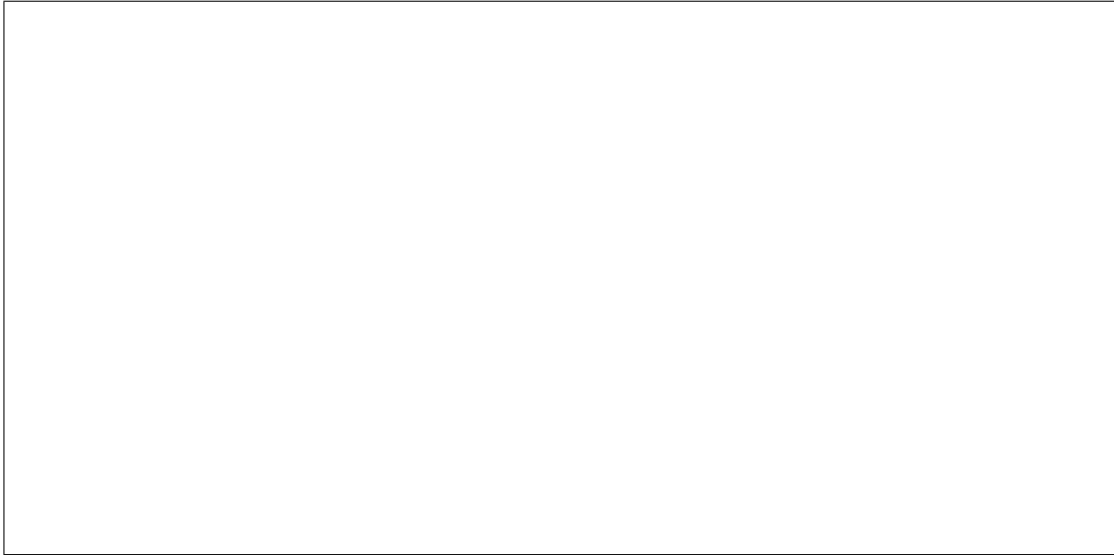


æĬĴăĭŇãĀñă;£çŤíãĀŽăĆŇãĆŕãČŖ'ăĆęăČĹ'èĬŁçđŮăĹ' §ăĆŠéĀÿæŁďăĀŮă;£çŤíãĀŽăĆŇãĆşăĆćæŤŕăĆŠéĀÿæŁďăĀŮăĀĭãĀŽăĂĆ

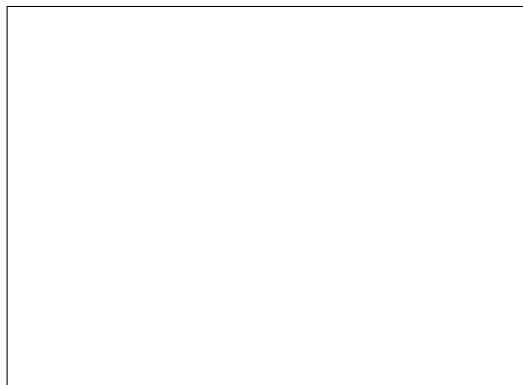


èĬŁçđŮăĀŇçŤĈăžĒãĀŽăĆŇãĀĬFILESăĆŁăČŮăĀŇçŖĭăĆŇăĂĀăžëăÿŇãĀőăČŤăĆăăĆđ'ăČňăĀŇăĠăăŁăŽăĀŤăĆŇăĀĭãĀŽăĂĆ

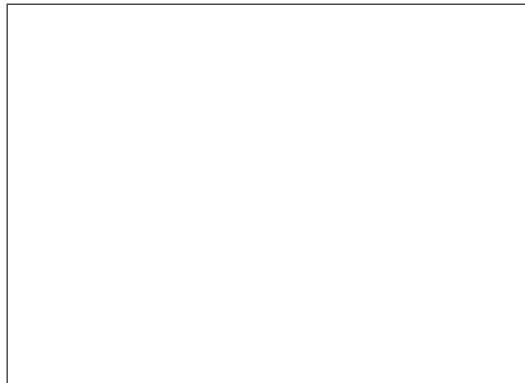
āČŤāČqāČd'āČŇāŘ■	èĥæŸŮ
spectra_data.csv	āČzāČZāČřāČĹāČŇāĜzāŁZāČŤāČqāČd'āČŇ(csvāĭćāĭjŘ)
IR_spectrum.png	IRāČzāČZāČřāČĹāČŇāĀőāZšāČŤāČqāČd'āČŇ
Raman_spectrum.png	RamanāČzāČZāČřāČĹāČŇāĀőāZšāČŤāČqāČd'āČŇ
spectrum_peak.dat	āŘŸāŘŌāČŤāČĭjāČřāĀőāČĚāāšāĜzāŁZ
dynmat.axsf	āšžæzŮæŇřāŇŤēĝčæďŘĉŤŘæďIJ(XcrysdenāĀğāŘřēŮāŇŮāŘřèČĭ)



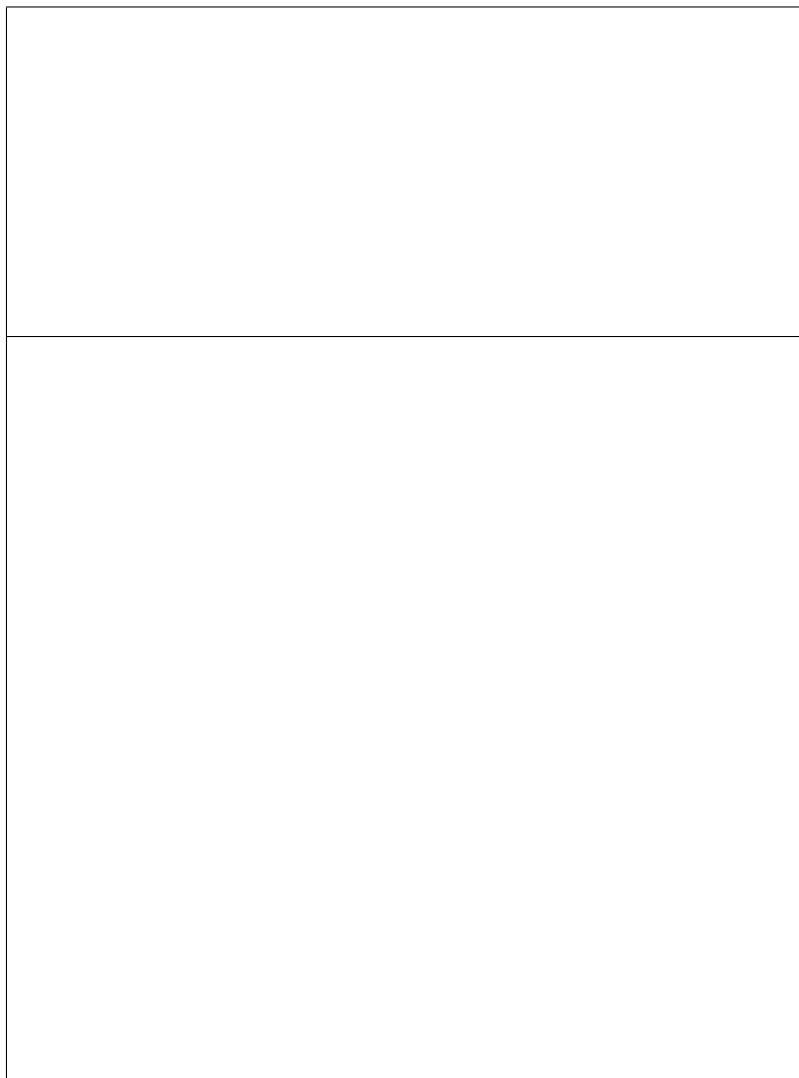
āZšāČŤāČqāČd'āČŇāČšāČřāČĹāČČāČřāĀZāČŇāĀĭāŘďāČzāČZāČřāČĹāČŇāĀőāČřāČŤāČŤāŇāŘřēŮāŇŮāĀŤāČŇāĀĭāĀZāĀČāČzIRāČzāČZāČřāČĹāČŇ



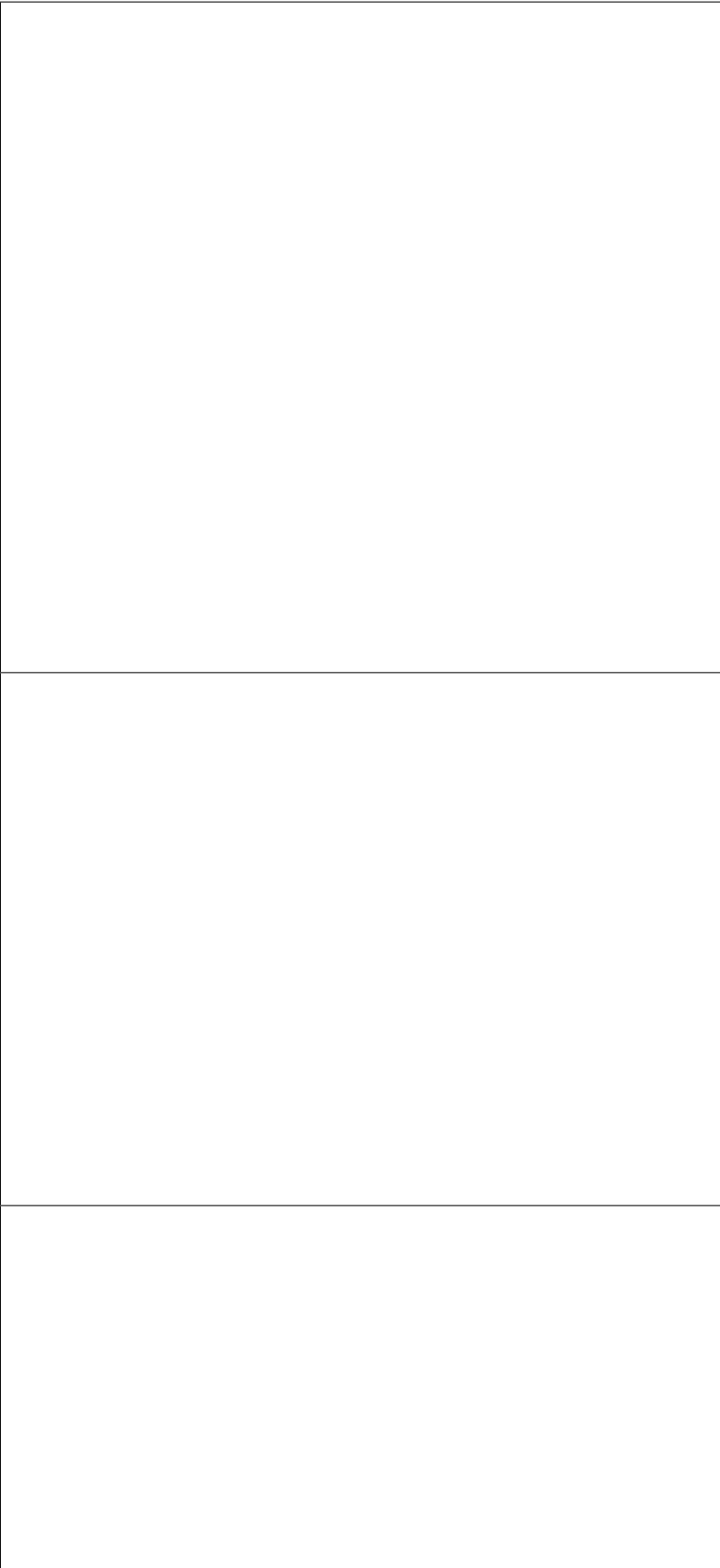
āČzRamanāČzāČZāČřāČĹāČŇ



çŭŽãAďãAęãĂAxcyrſdenãČŠçŤlãAďãAęãšžæžŮæŇřãŇŤãČŠãŘřęŮãŇŮãAŽãČNãŮzæſŤãČŠěĤæŸŎãAŮãAĹãAŽãĂČRemote  
DesktopãČŠěŮãŇŤãAŮãĂAApplicationsâĠŠOtherãAŇãČL'XcyrſdenãČŠéAÿæŁďãAŮãAĹãAŽãĂČ



1.2. ɕŋŋäyÄãÕşçŘĚèİŁćõŮGUIãAİăĆrăĈřăĆęăĈL'èİŁćõŮ



Animation Control Center(ModifyâĢšAnimation  
Controls)ãAõçşcă■řāČIĴāČŁāČşāČŖāČĹāČČāČřāAŮāAęāĀACurrent SlideāČŖspec-  
trum\_peak.datäy■āAõęğçæđŘāAŮāAşāAĎāČȦČijāČřāAõmodeçȦĥRŭāAñēĹ■āőŽāAŮāAĹāAŽāĀČāČd'āČşçȦzēĹcāŘşāAť'āAõæş



EXabyte.ioāAõāČĹāČşāČřāĚĹ

EXabyte.ioāAõāžŇāĹŇēŽĚ

## 1.2.4 çñňäÿĀāŎşçŘĚēĹŁõŮ (VASP)

ēĹŁõŮæş■ĴĴēñæŸŎ

Exabyte.ioäÿŁāAğçñňäÿĀāŎşçŘĚēĹŁõŮāČĴāČȦČĹVASPāAõēĹŁõŮæş■ĴĴāAñāAđ'āAĎāAęçť'zāžŇāAŮāAĹāAŽāĀČ

ä;IJæĹŘäy■

## 1.3 āďŮéČÍGUIéĂčæŘž

āAšāAšāAğāAřāĂAžžŮčď' ĺāAőGUIāAŁāČĹāAšāďŮŮéČÍGUIāAőä;ξçŤíāAňāAďŮāĎāAçèĥæŸŎāČŠèqŇāAĎāAŁāAŽāĂČ

### 1.3.1 āďŮéČÍGUIäyĂèëğ

ä;IJæĹŘäy■

## 1.4 āČďāČĚāČĹāČčāČňāČďŮāČšāČŤāČřāČďāČĚāČčāČČāČřāČž(MI)āAĹāAŮāAęāA

āAšāAšāAğāAřāĂAāČďāČĚāČĹāČčāČňāČďŮāČšāČŤāČřāČďāČĚāČčāČČāČřāČž(MI)āAĹāAŮāAęāAőä;ŁāAĎæŮžāČŠèĥæŸŎāČŠèqŇ

### 1.4.1 āČďāČĚāČĹāČčāČňāČďŮāČšāČŤāČřāČďāČĚāČčāČČāČřāČž(MI)āAĹāAŮāAęāAőä;ŁāAĎæŮž

ä;IJæĹŘäy■

## 1.5 āČzāČšāČĹāČijāČĚāČ■āČzāČĹ

āČzāČšāČĹāČijāČĚāČ■āČzāČĹäyĂèëğāĂä;IJæĹŘäy■

### 1.5.1 āČzāČšāČĹāČijāČĚāČ■āČzāČĹ

ä;IJæĹŘäy■

## 1.6 āAĹāAőäžŮāAóæřšèČ;

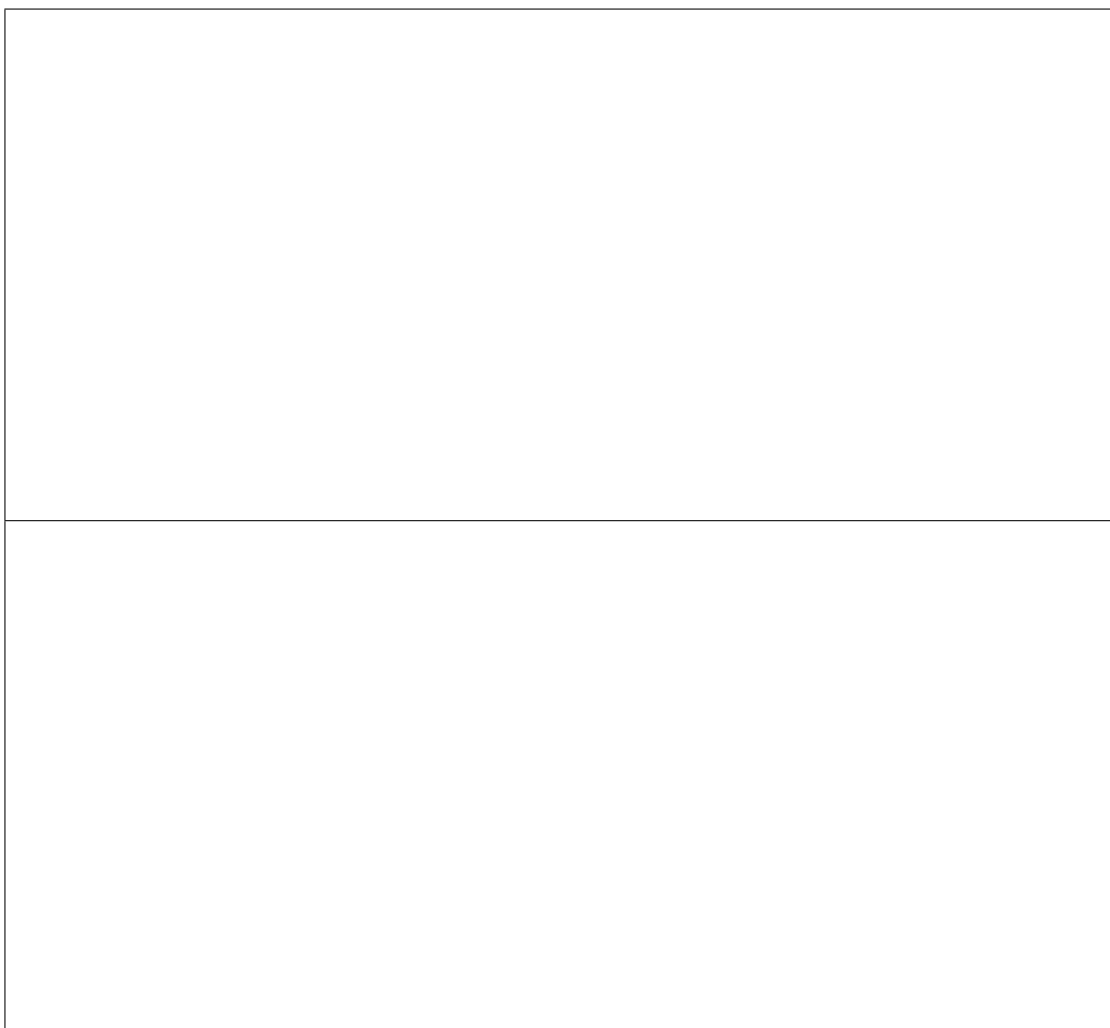
āAšāAšāAğāAřāĂAExabyte.ioāAőāČčāČĜāČňā;IJæĹŘāČĎēĹčŮŮæřšèČ;äžēāďŮŮāAőæřšèČ;āAňāAďŮāĎāAçèĥæŸŎāAŮāAŁāAŽ

### 1.6.1 PurgeāAĹDeleteāAóéAŤāAĎāAňāAďŮāAĎāAę

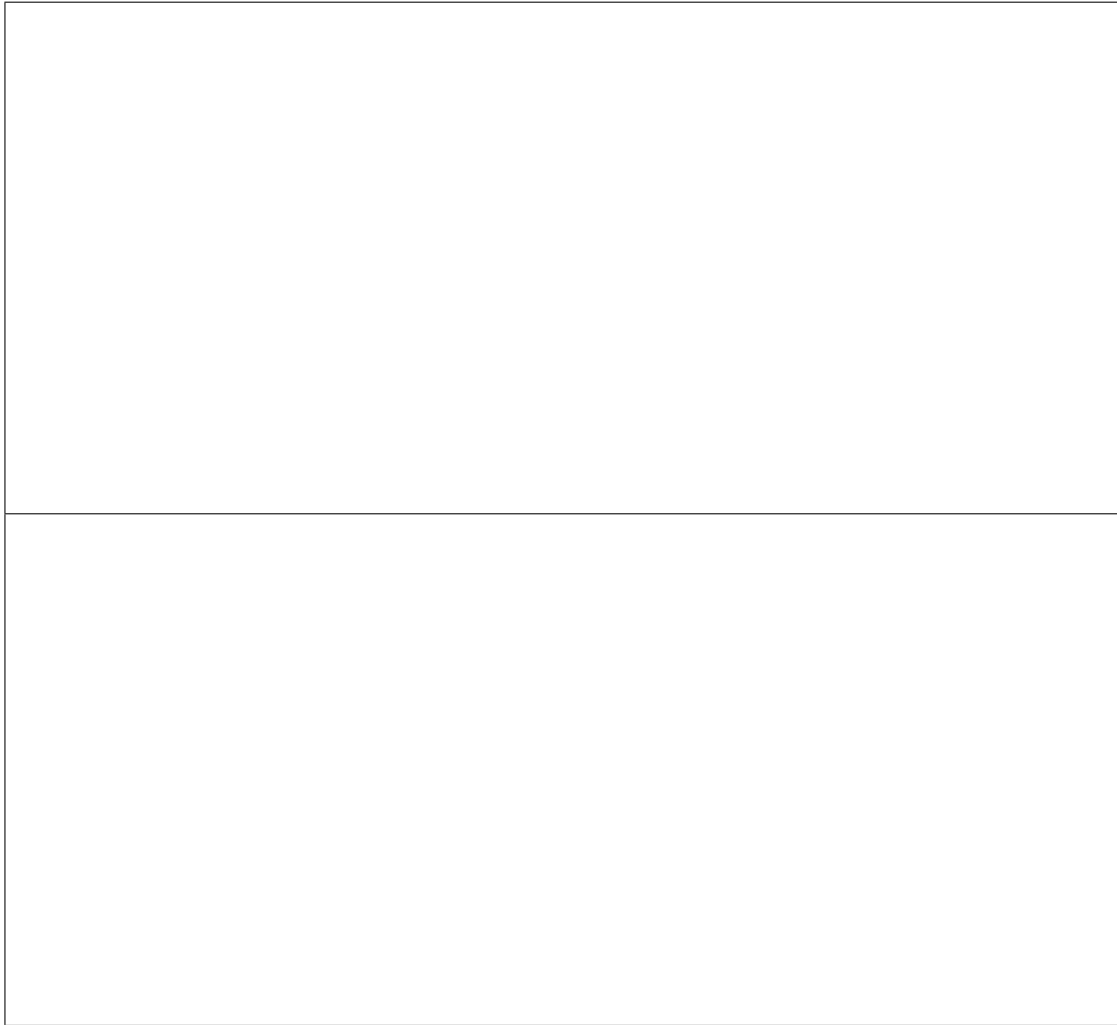
āČŮāČ■āČyāČĝāČřāČĹāAňāŁā■ŸāAŮāAšāČyāČĝāČŮāČŠæŮĹāAŽāāt'āŘĹāAňā;ŁāAĚāĂAŁPurgeāAĹDeleteāAóéAŤāAĎāAňāAďŮāA





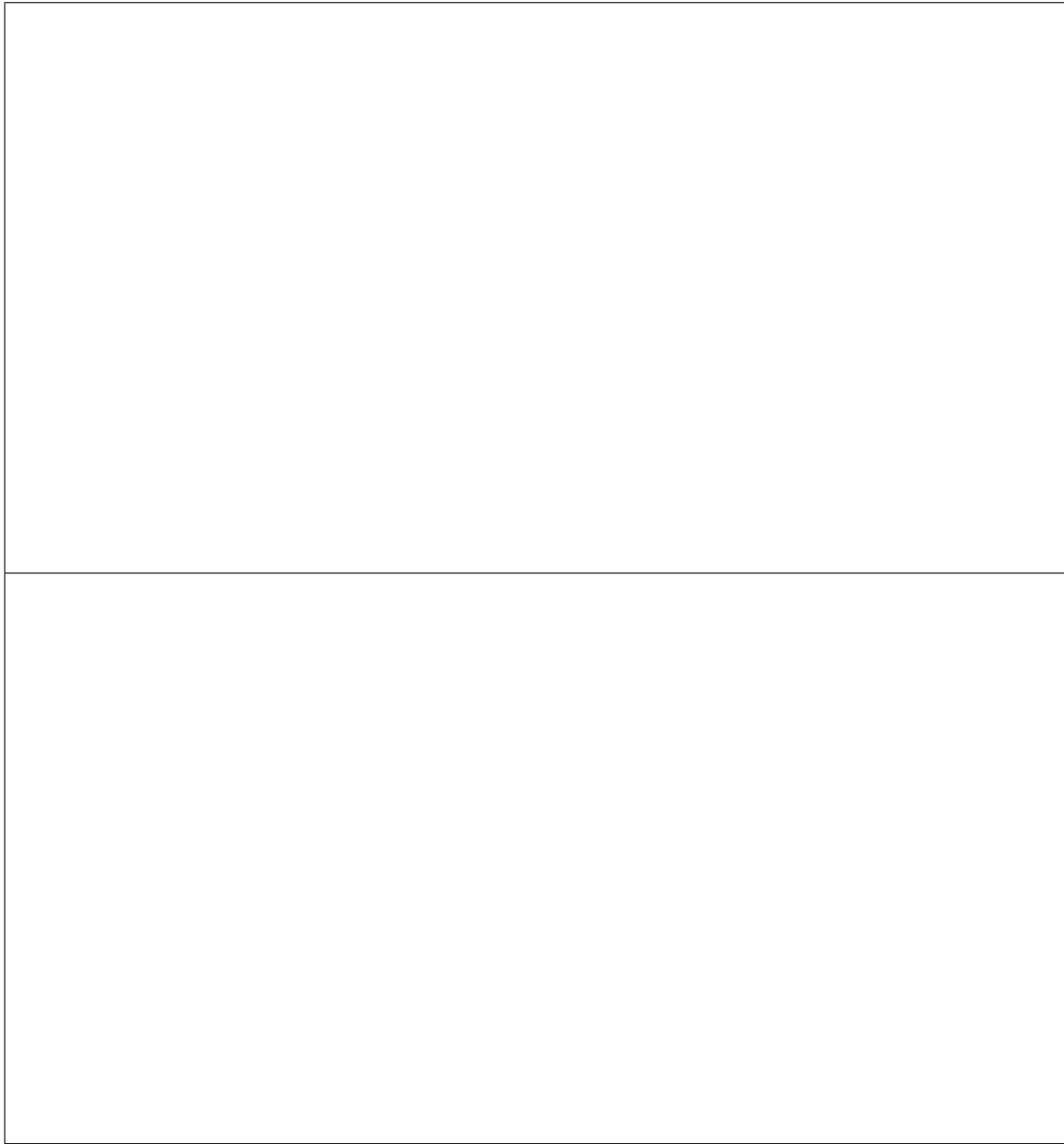


ăAĭăAőăČŦăČŕăČňăČĂăČŠZIPăČŦăČąăČď'ăČňăAňăĬĴğçÿőăAŮăAĴăAŽăĂĆ



Exabyte.io; ÅŁExternal Upload-  
sāAŇāČL'ä;IJæĹŘāAŮāA\$ZIPāČȚāCqāČd'āČňāČŠāČćāČČāČŮāČ■āČijaČL'āAŮāAŁāAZāĀČāAĭāAŁēŽŽāAňāČyāČgāČŮāAŁāŘ■āL


āĆćāČćāČŮāČ■āČijāČĹāAȦāČŇāAşāČyāČğāČŮāAřāĀAāČŮāČ■āČyāČğāČřāČĹāAőExternalāAńæiȦt'■āAȦāČŇāAĹāAŻāĂĆ



èÍĹçōŮçȦŘæđIJāAřāŘřèĚŮāŇŮāAȦāČŇāAęèāĹçd'žāAȦāČŇāAĹāAŻāĂĆ





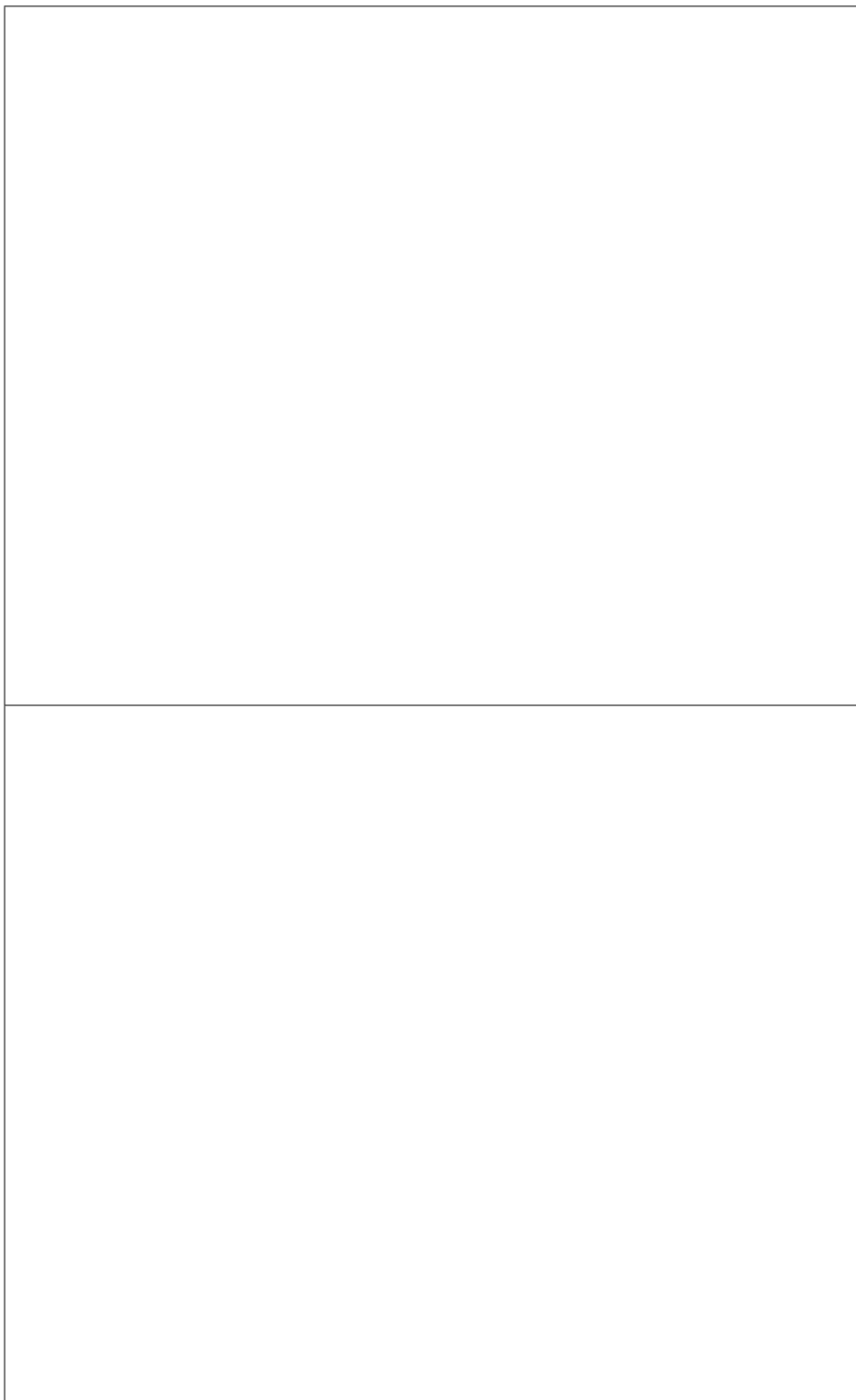
iiĵŠãAđ'ãAőãČ■ãČijãČŠã£Iã■ŸãAŮãA¿ãAŽãĂĆ



æñqãAŘãAñExavyte.ioãAñãČ■ãČijãČŠçŽzéŇšãAŮãA¿ãAŽãĂĆçŽzéŇšãAřPreferencesãAÑãČL'èqÑãAłãAĎãA¿ãĂĆ




āČ■āČijāAőçŻzéŇsāAŇçŧČäžEāAŮāAšāCL'āĀSSH/SCPāAőāČĭāČŧāČĹāAőèĹ■āőŽāČŠëąŇāAłāAĐāAĭāAŻāĀČāAŞāAŞāAğāAŗPu



WinSCPāAőēĹāőŽāČŠčđ'žāAŮāAčāAŽāĂČ



EXabyte.ioāAőāČĹāČšāČřāĚĹ

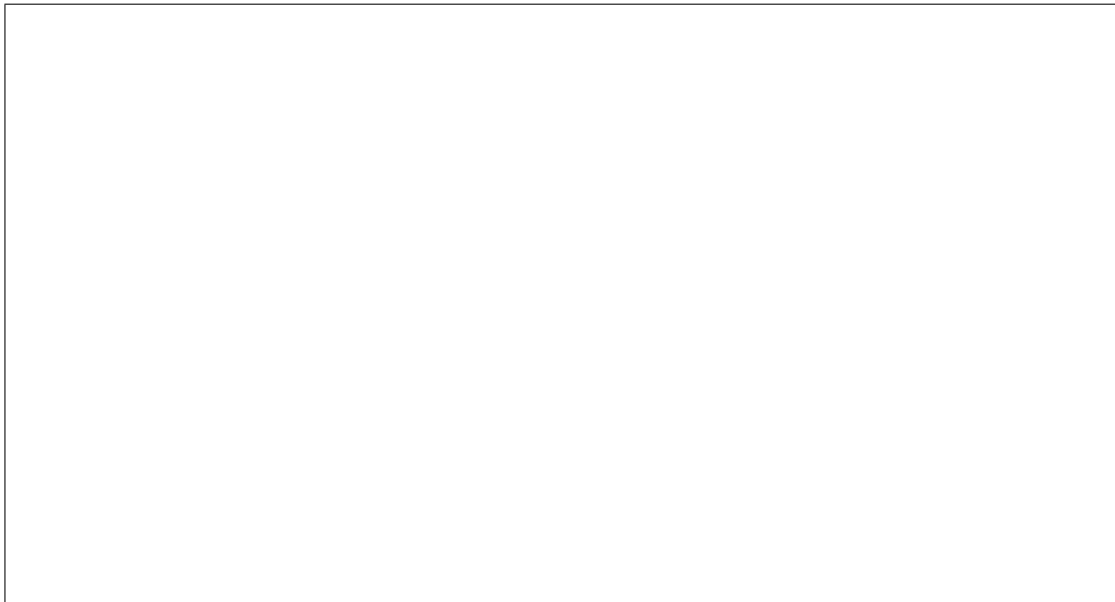
EXabyte.ioāAőāžŇāčŇéŽE

#### 1.6.4 æőNénŸāAŇāČĹ'ēĹčőŮéāāČŠāČAāČćāČijāČyāAŽāČŇāāt'āŘĹ

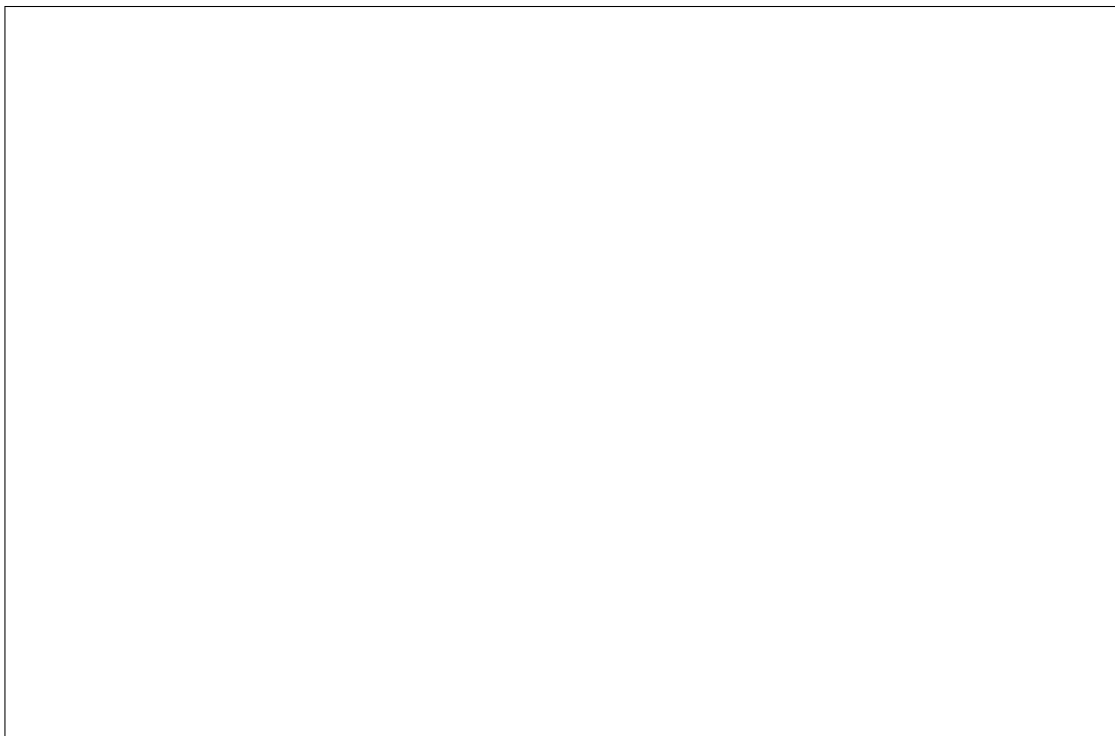
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āČAāČćāČijāČyæőNénŸāAŇāČĹ'ēĹčőŮāAőBalanceāAŇēŁjāŁāāAŽāČŇāāt'āŘĹāAřāĂAāŇBilling & PaymentsāĂāČŠēAÿæŁđāAŮāAčāAŽāĂČ





ăČAăČćăČĩăČȳăAŮăAșăAĐéăăČŚéAÿæŁďăAŮăĂAăĂŇAdd  
CredităĂăAğæŇGăŏZăAŮăAșéăăAŇèŁ;ăŁăăAȚăČŇăA;ăAŻăĂĆ



EXabyte.ioăAŏăČlăČșăĆrăĚĹ

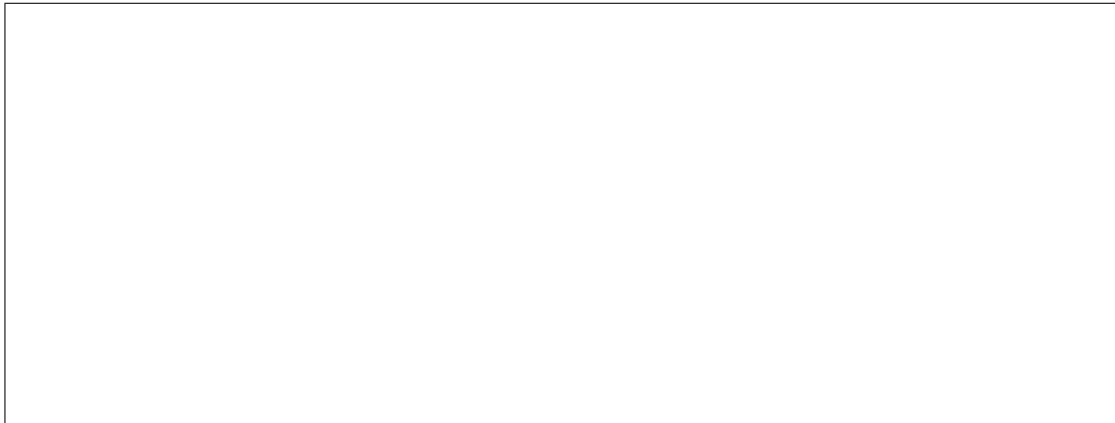
EXabyte.ioăAŏăžŇă;ŇéŽĚ

### 1.6.5 ĀČŪāČ■āČÿāČġāČŕāČĻāČŠāČŭāČġāČċāĄŻāČŅāāŕ'āŖĻ

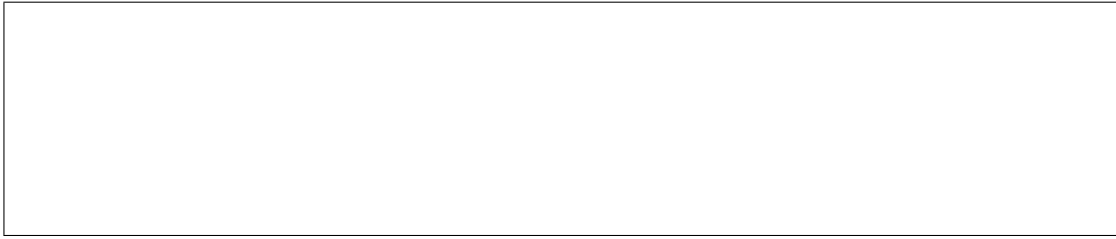
Exabyte.ioãAğãAřãĂãĂĈUãĈ■ãĈÿãĈğãĈřãĈĹãĂãĂĈÿãĈğãĈŮãĂãĂworkflowãAĹãAĹ'ãĈŠãĈũãĈğãĈċãAŻãĈŃãAŞãAĹãAĹãAĹãRãRëĈ;ãAğ

ãAşăãAŞăãAgăãArăãAAăãCŮăČ■ăĆyăĈgăĆrăĬLăĈSăĖlă;ŞăAňăEñéŮNăAZăĈNăŮzæşȚăĈŚl̃æYŎăAŮăAḲăãAZăĂĈăăAḶăãAŽăĹIăĈAă

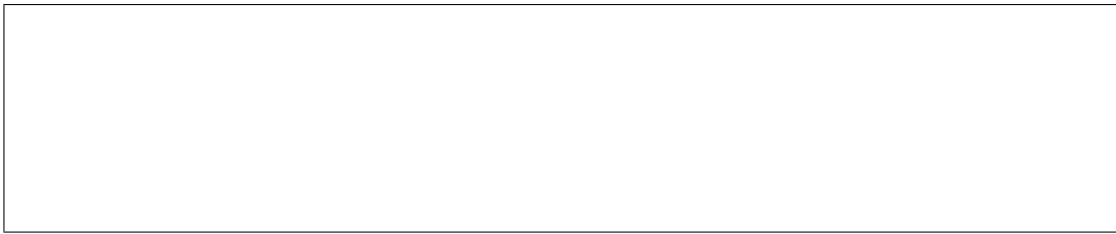
ãĈũãĈ■ãĈÿãĈğãĈřãĈĹãĈŚãĈĖãĈŁđãĈŮãĈŰãĈăãĈĹ'ãĈĂãĈShareãĈĪãĈĤãĈăãĈşãĈŚãĈLijãĈŮãĈŰãĈĂãĈZãĈĀ



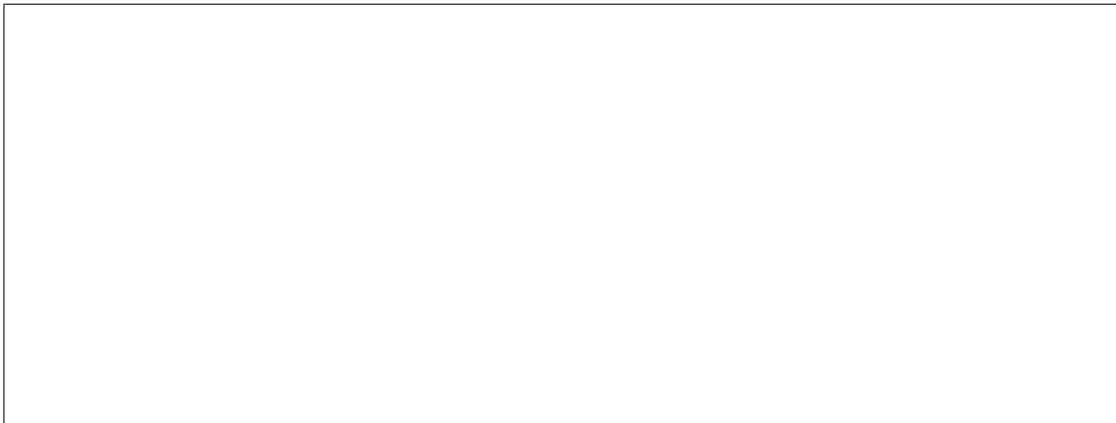
PublicăAőçŧDçŻTăAőReadăĆŠéAÿæŁďăAŮăAŁăAŻăĂĆ



ReadāAğāA■āČŇϚĐϚžŤāAńāČAāČğāČĆāČřāČđāČijāČřāAŇāAđ' āA■āA; āAŽāĂĆāAŞāČŇāAğPublicāAőϚĐϚžŤāAřēēŇāČŇāČŇāA



PublicāAőϚLúæĚŇāAńāAłāAćāAęāAđāČŇāČŮāČ■āČÿāČğāČřāČĹāAńāAřāĂAāČAāČğāČĆāČřāČđāČijāČřāAŇāžŸāA■āA; āAŽāĂĆ



āĂž ϚĐϚžŤāČćāČŇāČşāČĹāAőāāt' āŘĹāĂAOwneræÍl' éŽŘāAőāAČāČŇāČěāČijāČűāAőāA£èł■āőŽāŘřēČ; āĂĆ

EXabyte.ioāAőāČłāČşāČřāĚĹ

EXabyte.ioāAőāžŇā; ŇéŽE

**1.6.6** āĆũāĈgāĆćāĄŮāĄšāĈŮāĈ■āĈŷāĈgāĆřāĈĹāĈŚèğćēZďāĄžāĆŃāřřāŘĹ

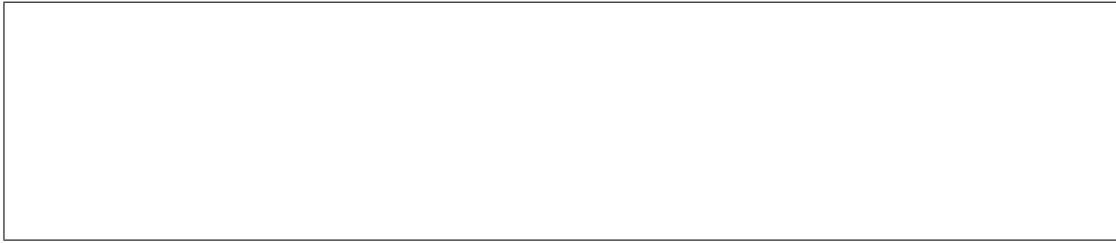
āAṢāAṢāAḡāAṛāĀāCūāCḡāCāAŪāAṢāCŪāC■āCŷāCḡāCṛāCĹāCŠēḡcéZd'āAŻāCŊāŪzæṢṬāAṇāAd'āAḌāAçēḡæYŌāAŪāAḷ;āAŻ  
 āAḷ;āAŻāĹāĹāCāAṇāAĀēḡcéZd'āAŻāCŊāCŪāC■āCŷāCḡāCṛāCĹāCŠéAṽæŁḏāAŪāAḷ;āAŻāĀC

ãĈŮãĈ■ãĈÿãĈġãĈŕãĈĹãĈŚãĈĖãĈŁđãĈŮãĈŖãĈĹ'ãĈŖShareãĈĪãĈĤãĈŞãĈŚæLijãĈŮãĈŖãĈZãĈĆ

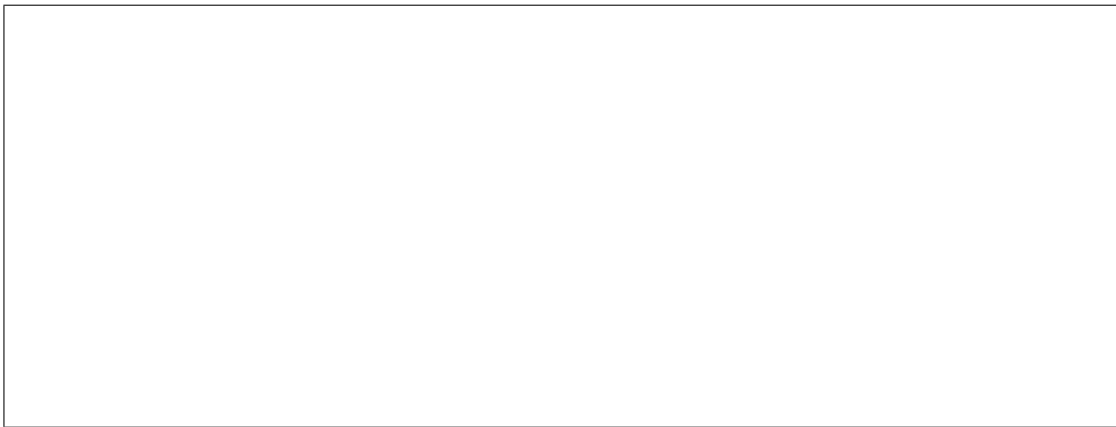
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PublicăAőçŧĎÇzŤăAőRevoke accessăĈŠéAÿæŁđăAŮăAĴăAŹăĂĆ





PublicāAőçŁűæĚŇāAőāČŮāČ■āČÿāČgāČřāČĹāAŇĕğćéŽď'āAŦāČŇāĀAāČŮāČř'āČď'āČŽāČijāČĹāAőçŁűæĚŇāAŋāAłāČĹāAč;āAŽā.



āĀz ϙŦĐçzŦāČćāČŇāČşāČĹāAőāāt'āŘĹāĀAOwnerael' éŽŘāAőāAČāČŇāČĕāČijāČűāAőāAŧèł■āőŽāŘřēČ;āĀČ

EXabyte.ioāAőāČĹāČşāČřāĚĹ

EXabyte.ioāAőāžŇāčŇéŽĚ