

6 X V V H [ ( 3 6 5 & ' F  
/ D Q G V F D S H 3 U F  
7 K H P H V I R U \$ X \



&217(176

&KHPLVI  
(QJLOHT  
,QIRUPD  
0DWKHP  
3K\VLFEV

# Chemistry

7KHRUHWLFDQ DQG (SHULPHQWDO 0RO

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1RYHO LPDJLQJ DJHQWV WR GWHFW D  
(3

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3KRVSK000YHG PDFURF\FOHV 7RZDUG  
FRPSRQHQWV (3

1HZ TXDQWXP PHWKRGV FDSDESDHURMLVR  
6FKU|GLQJHU HTXDWLRQ IRU TXDQWXP  
(3

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'HYHORSLQJ WKH UHDFWLYLW\ RI KLJKC  
RUJDQRPHWDOOLF FRPSROXHQ\ UHDFWLY  
XVLQJ UH DJHQWV IRU GHOWWLQJ DWPR'  
(3

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1RYHO /LQNHURORJ\ 7RZDUGV +HWHURE  
3URWDFV DQG \$QWLERG\ 'UXJ &RQMXJD





# Engineering

'D W G U L Y H Q G H F N L V Q R Q W U D W H J L H V I R U I

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6LJQDO SURFHVVVLQJ IRU ZLUHOHVV FRF  
FRPPXQLFDWLRQ SDUDGLJPV (3

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\$SSOLFDWLRQV RI +XPDQ \$FWLYLW\ 5HF

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\$GYDQFHG PDWHULDOV DXWRPDWLRQ I



2SWLFDO &RPPXQLFDWLRQ DQG ,QWHU  
&RPPXQLFDWLRQ (3



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(QKDQFLQJ WKH SUHGLFWLRQ RI ORFRP







,PSURYLQJ JDV WXUELQH HQJLQH VWUX



8QORFNLQJ KLJK

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\$ URERWLF EUHDVW FDQFHU SDOSDWLR  
WUDLQLQJ DQG DZDUHQHVV HIIRUWV (:

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&RQWURO PHWKRGV IRU μH[FLWDEOH¶ \  
UXQDZD\ DQG UHDFWLRQV RI QHZ ]HUR

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(QHUI\ QHWZRUN UHVLOLHQFH DQG UHC  
FKDQJH (3

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'HYHORSLQJ \WRE RWRB XOWUDVRXQG '  
UKHXPDWRLG DUWKULWLV (3







+LJK SUHFLVLRQ URERWLFV DQG VHQVL





# Informatics



\$FWLYH YLVXDO OHDUQLQJ (3

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&RPSXWDWLRQDO DQG ELRORJLFDO SHU  
FDQ ~~WHU~~ DQLVH WR SURGXFH UREXVW [E  
EHKDYLRXU (3

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6XVVH[ &HQWUH IRU &RQVFLRXVQHVV 6



/HYHUDJLQJ PDFKLQH OHDUQLQJ 0/ WI  
V\QWKHVLV FKDOOHQHJHV LQ WLPHG OR.

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(YH QW VHG PDFKLQH OHDUQLQJ DQG QH  
(3

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+XPDQRPSXWHU LQWHUDEFWLRQ ZLWK D  
OHDUQLQJ DQG HGXFDWLRQ (3



,QWHJU(PSOLDLQDEOH \$UWLILFLDO ,QWHC  
'HWHFWLRQ 6\VWHPV WR RIIHU PRUH WI  
HIIHFWLYH GHWHFWLRQ RI F\EHUDWWDI

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8QGHUVWDQGLQJ WKH G\QDPLFV RI ODC  
WKHFURHDWLRQ RI SDWKZD\V WRZDUGV '  
(3



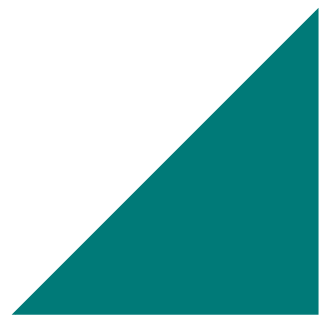
'HYHORS QHZ PRGHOV DQG GDWD VHWV  
FKDOOHQJHV LQ WKH UHFRJQLWLRQ RI





1DWXUDO /DQJXDJH 3URFHVVVLQJ IRU ,P  
3HRSOHV 0HQWDO +HDOWK (3

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\$GYDQFLQJ PHFKDQLVWLF XQGHUOVDQI  
DQDO\WLFDO DQGHSKRDEKLQH OHDUQLQ

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\$SSOLHG DQG QXPHUQRQO LDQDDU VLDU MRI  
HTXDWLRQV ZLWK DSSOLFDWLRQV WR F

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□

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2SWLPDO WUDQVSRUW PDSV IRU PRGHO  
(3

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0DWKHPDWLFDO PRGHOOOLQJ WR H[SORL  
PLFURELDO LQWGLYDFWLRQVLRQVGHKH VRL  
(3

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□

0DWKHPDWLFDO DQG FRPSXWDWLRQDO  
3DUWLDO 'LIIHUHQWLDO (TXDWLRQV (3

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1XPHULFDO \$QDO\VLV RI 3DUWLDO 'LIIH

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# Physics

1DQRPDWHULDOV LQFOXGLQJ JUDSKHQ†  
UDQJH RI QDQRWHFKQRORJLHV DQG GH



