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A- I - Exemplo da sequência de operações utilizadas no THERMOCALC para obtenção da curva To.

LOGFILE GENERATED ON PC/WINDOWS NT   DATE 2006- 5-17
teste determinação da curva T_0 para a liga Q1

```
go poly
def-mat
ssol2
fe
Y
fe
Si 2.45
mn 2.3
ni 1.5
cr 0.8
mo 0.6
c 0.37
 700
*
fCC bCC
none
NONE
y
n
l-e
SCREEN
VWCS
s-a-v
1
W(C)
0
0.04
.001
s-a-v
2
T
600
1300
17.5
save PLOTA y
y
map
post
s-d-a
x
W(C)
s-d-a
y
T
s-p-f
1
plot
SCREEN
ba
```

```
read PLOTA
s-o
t-z
fcc
bcc
list_axis_variables
s-a-v
2
none
save PLOTB Y
y
step
t-z
fcc
bcc
post
s-p-f 1
plot
SCREEN
make PLOTB Y
back
```

SET-INTER

A- II - Exemplo da sequência de operações utilizadas no THERMOCALC para obtenção da força motriz para precipitação dos carbetos

```
@ driving force for precipitation - ferrite - alloy Q1-

go data
sw ssol2
d-e fe c si mn ni mo cr
rej p *
res p BCC_a2 cementite mc_shp m7c3 m23c6 ksi_carbide m3c2 m6c
res p mc_eta m5c2
get
go pol
s-c t=700 p=1e5 n=1 w(c)=0.0037 w(si)=0.0245 w(mn)=0.0227 w(ni)=0.0147
s-c w(cr)=0.008 w(mo)=0.0058
c-st p *=dormant
c-st p Bcc_a2=entered 0
c-e
c-e
s-a-v 1 t 500 1000 10
step
normal

ent tab  fmq
dgm(BCC_a2) dgm(cementite) dgm(mc_shp)
dgm(m7c3) dgm(m23c6) dgm(ksi_carbide) dgm(m3c2) dgm(mc_eta) dgm(m5c2);
post
s-d-a x t
s-d-a y fmq
*
pl
SCREEN
?
s-l-c-o d
pl
SCREEN
?
set-interactive
```

A- III - Exemplo da sequência de operações utilizadas no DICTRA

LOGFILE GENERATED ON PC/WINDOWS NT   DATE 2005- NOV
Q1=0.37C,2.45Si 2.27Mn 0.47Ni ferrite=0.20 microns, austenite=0.0904 microns, QT=167, PT=400, %aust=0,311 %mart=0,688

```
go da
sw ssol2
def-sp fe c si mn ni
rej ph * all
res ph fcc,bcc
get
app mob2
def-sp fe c si mn ni
rej ph * all
res ph fcc,bcc
get
go d-m
set-cond glob T 0 673; * N
enter-region aus
enter-grid aus 4.5e-8 geo 30 0.9
enter-phase act aus matrix fcc_a1#1
enter-composition
aus
fcc_a1#1
fe
w-p
c
linear
0.37
0.37
si
linear
2.45
2.45
mn
linear
2.27
2.27
ni
linear
4.47
4.47
create-new-cell
1
enter-region fer
enter-grid fer 10e-8 geo 30 0.9
enter-phase act fer matrix bcc_a2#1
enter-composition
fer
bcc_a2#1
fe
w-p
c
linear
```

```
0.37
0.37
si
linear
2.45
2.45
mn
linear
2.27
2.27
ni
linear
4.47
4.47
set-simulation-time 30
YES
.1
1E-07
1E-07
set-simulation-cond
0
1
2
NO
POTENTIAL
YES
YES
1
2
NO
YES
save EXSETUPQ1167400020 Y

set-inter
```

LOGFILE GENERATED ON PC/WINDOWS NT   DATE 2005-NOV
0.37C, 2.45Si, 2.27Mn, 0.47Ni, ferrite=0.20 microns, austenite=.0904 microns, QT=167, PT=400 %aust=0,311 %MART=0,68

```
go d-m
read EXSETUPQ1167400020com ni
sim
set-inter
go d-m
```

```
go d-m
read EXSETUPQ1167400020com ni
post
select-cell
2
```

```
@@
@@ NOTICE THAT THE PROMPT INCLUDES THE CURRENT CELL NUMBER
@@
s-d-a x dist glo
s-d-a y w(c)
s-p-c time .0001 .001 .01 .1 1 10 30

@@
@@ SET TITLE ON DIAGRAMS
@@
set-title PERFIL DE Carbono NA FERRITA
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
perfilferritaC

@@
@@ DO THE SAME THING FOR THE AUSTENITE (CELL-1)
@@
select-cell
1
set-title PERFIL de Carbono na AUSTENITA
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
perfilaustenitaC
@@
@@ PLOT THE AVERAGE WEIGHT FRACTION OF CARBON IN FERRITE VS.
SQUARE ROOT
@@ OF TIME. START BY DEFINING A "SQUARE-ROOT-OF-TIME"
FUNCTION.
@@
sel-cell 2
enter func sqrt=sqrt(time);
s-d-a x sqrt
s-d-a y iww(2,c)
s-i-v time
set-title Average C Concentration of Ferrite (Q1 167 400 0,20)
plot
SCREEN



@?<_hit_return_to_continue_>

make-experimental-datafile
```

```
averageCferrita
@@
@@ DO THE SAME THING FOR THE AUSTENITE
@@
sel-cell 1
s-d-a y iww(1,c)
set-title Average C Concentration of Austenite (Q1 167 400 0,20)
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
averageCaustenita
@@
@@ PLOT HOW THE CONCENTRATION IN FERRITE AT THE
FERRITE/AUSTENITE BOUNDARY
@@ V.S SQUARE ROOT OF TIME. THE  FERRITE/AUSTENITE BOUNDARY
IS REPRESENTED
@@ BY THE CELL BOUNDARY I.E. THE "LAST" INTERFACE.
@@
sel-cell 2
s-d-a y w(c)
s-p-c interface last
set-title C Ferrite Interface (Q1 167 400 0,20)
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
concentraçãointerfaceferrita
@@
@@ DO THE SAME THING FOR THE AUSTENITE
@@
sel-cell 1
set-title C Austenite Interface (Q1 167 400 0,20)
plot
SCREEN


@?<_hit_return_to_continue_>
make-experimental-datafile
concentraçãointerfaceaustenita

@ PLOT THE VARIATION OF CARBON ACTIVITY AT THE SURFACE VS TIME
@@
sel-cell 2
enter func sqrt=sqrt(time);
s-d-a x sqrt
s-d-a y ACR(C)
@@
@@ SET TITLE ON DIAGRAMS
```

```
@@
set-title ATIVIDADE DO C NA INTERFACE FERRITA
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
atividadeCferrita


@ PLOT THE VARIATION OF CARBON ACTIVITY AT THE SURFACE VS TIME
@@
sel-cell 1
enter func sqrt=sqrt(time);
s-d-a x sqrt
s-d-a y ACR(C)
@@
@@ SET TITLE ON DIAGRAMS
@@ set-title ATIVIDADE DO C NA INTERFACE AUSTENITA
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
atividadeCaustenita

@ PLOT THE VARIATION OF CARBON ACTIVITY-FERRITE VS DISTANCE
@@
sel-cell 2
s-d-a x DIST GLO
s-d-a y ACR(C)
s-p-c time .0001 .001 .01 .1 1 10 30
@@
@@ SET TITLE ON DIAGRAMS
@@
@set-title ACR(C) FERRITA VS. DISTANCIA
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
ACRFERRITADIST



@ PLOT THE VARIATION OF CARBON ACTIVITY-AUSTENITE VS DISTANCE
@@
sel-cell 1
s-d-a x DIST GLO
```

```
s-d-a y ACR(C)
s-p-c time .0001 .001 .01 .1 1 10 30
@@
@@ SET TITLE ON DIAGRAMS
@@
@set-title ACR(C) AUSTENITA VS. DISTANCIA
plot
SCREEN


@?<_hit_return_to_continue_>

make-experimental-datafile
ACRAUSTENITADIST

set-inter

----------
```