

a

## KMC.initialization()

Initializing KMC calculations with structure.cif at ./inputs/structure.cif ...

Supercell Shape:

[[8 0 0]

[0 8 0]

[0 0 8]]

Converting supercell ...

Prepare simulation cell

Loading fitting results ...

Loading fitting results (site energy) ...

Load fitting results

Loading occupation: [-1 -1 1 ... -1 -1 -1]

Load initial occupation

Fitted time and error (LOOCV,RMS)

2021-07-23 12:34:27.336356 210.64591136080466 30.33528714975413

Fitted KECI and empty cluster

[ 0. 16.28445938 0. 0. -24.94004525

-0. 0. 0. -0. 0.

-0. 0. 0.79563769 -0. 2.25547574

9.79857097 6.37690575 11.67337726 14.50420824 0.

0. 0. 7.8552509 0. ] 396.06474385470136

Fitted results

Fitted time and error (LOOCV,RMS) (site energy)

2022-08-19 00:10:40.098416 272.9404874988462 31.646337515383525

Fitted KECI and empty cluster (site energy)

[ 79.78563015 3.2257346 0. -0. -0.

-0. -26.28052616 -0. -50.62499038 -0.

-28.80273864 0. 122.27710059 -0. -0.

-0. 0. -0. 0. -6.08646117

-6.82639902 -0. 0. -93.32999035] 116.48692078967917

Loading: ./inputs/local\_cluster\_expansion.json

Loading: ./inputs/local\_cluster\_expansion\_site.json

Load model

Initializing correlation matrix and ekra for all events ...

Loading: ./inputs/events.json

Working at the site\_event\_list ...

Loading ./inputs/event\_kernal.csv

Initialize all Events

b

## KMC.run()

Simulation condition: v = 1E13 T = 573.0

Set simulation condition

Start running KMC ...

Initial occ\_global, prob\_list and prob\_cum\_list

Starting Equilibration ...

Equilibration

Start runing KMC ...

Initializing Tracker ...

Tracker

Initial Na locations = [ 0 1 4 ... 4093 4094 4095]

n\_Na = 3789 n\_Na\_sites = 4096

n\_Na% @ Na(1) = 0.20374769068355766

Center of mass (Na): [ 7.68074689e-02 -2.08304127e-02 8.81927488e+01]

Pass	Time	MSD	D_J	D_tracer	Conductivity	H_R	f
0	3.002E-10	1.498E+00	9.551E-08	8.319E-08	4.244E+00	8.709E-01	
1	5.898E-10	2.723E+00	1.213E-07	7.694E-08	5.388E+00	6.345E-01	

c

