Emergent quasiparticles in Euclidean tiling

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Abstract

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$k = 4$ **LATTICES**

t4001

Tiling reference number t4001 with space-group $'P6/mmm'$ (191) and 25 sites in the unit cell, with vertex type indicated in Tab. S1. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S1.

TABLE S1. Tiling t4001 vertex types

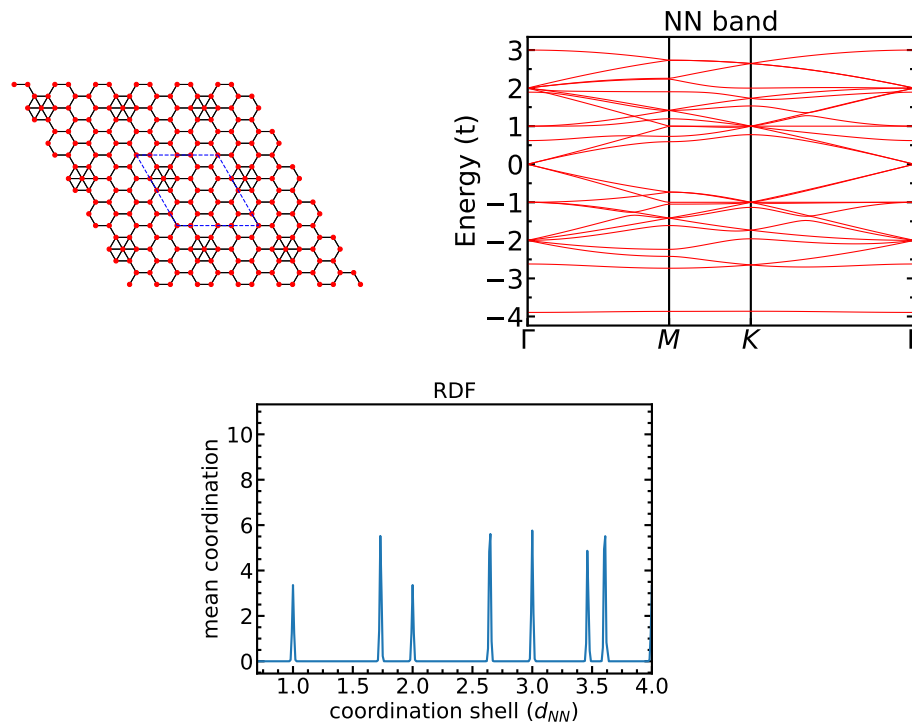| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	18	0	0	0	0	0	0	0	0	0	0	0	6

FIG. S1.   t4001 lattice framework, nearest neighbors band structure and radial distribution function.

t4002

Tiling reference number t4002 with space-group $'P6/mmm'$ (191) and 26 sites in the unit cell, with vertex type indicated in Tab. S2. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S2.

TABLE S2. Tiling t4002 vertex types

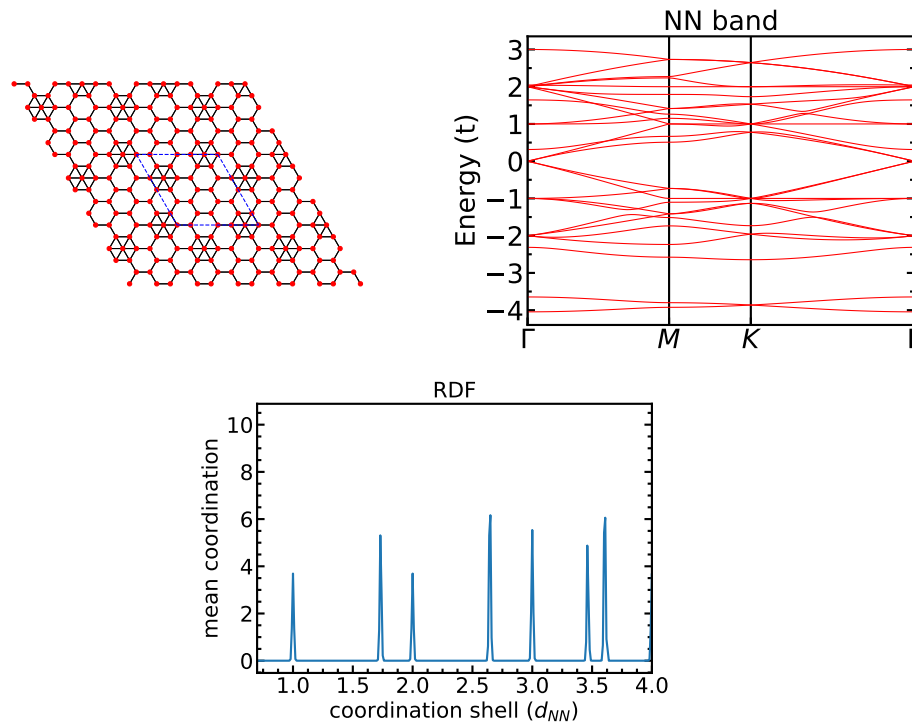| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	12	0	0	0	0	0	0	0	0	0	0	0	12

FIG. S2.   t4002 lattice framework, nearest neighbors band structure and radial distribution function.

t4003

Tiling reference number t4003 with space-group $'Cmmm'$ (65) and 14 sites in the unit cell, with vertex type indicated in Tab. S3. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S3.

TABLE S3.   Tiling t4003 vertex types

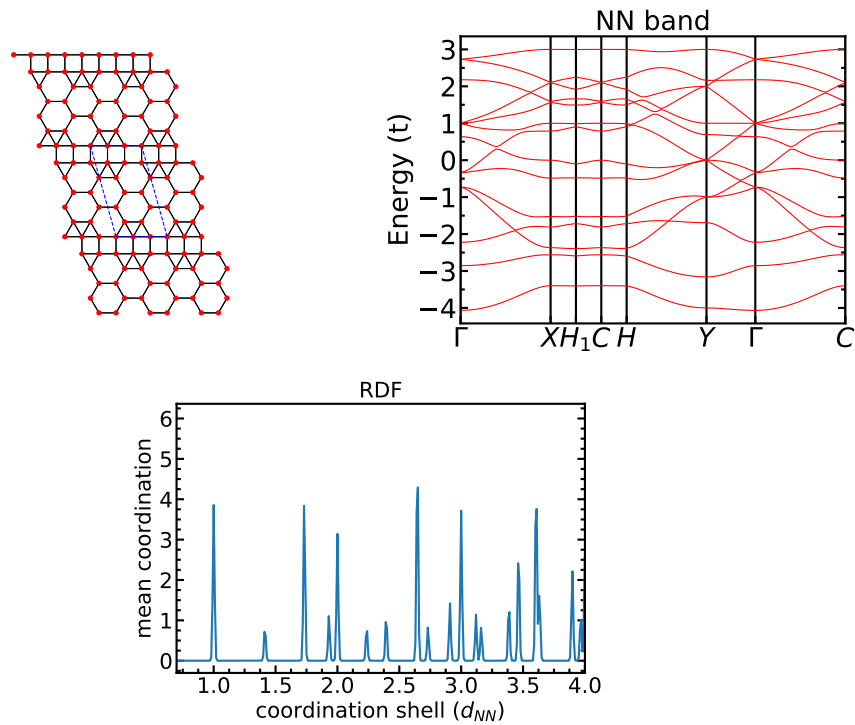| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	4	0	0	0	0	0	0	0	2	0	0	4	4

FIG. S3.   t4003 lattice framework, nearest neighbors band structure and radial distribution function.

t4004

Tiling reference number t4004 with space-group $'Cmmm'$ (65) and 11 sites in the unit cell, with vertex type indicated in Tab. S4. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S4.

TABLE S4.   Tiling t4004 vertex types

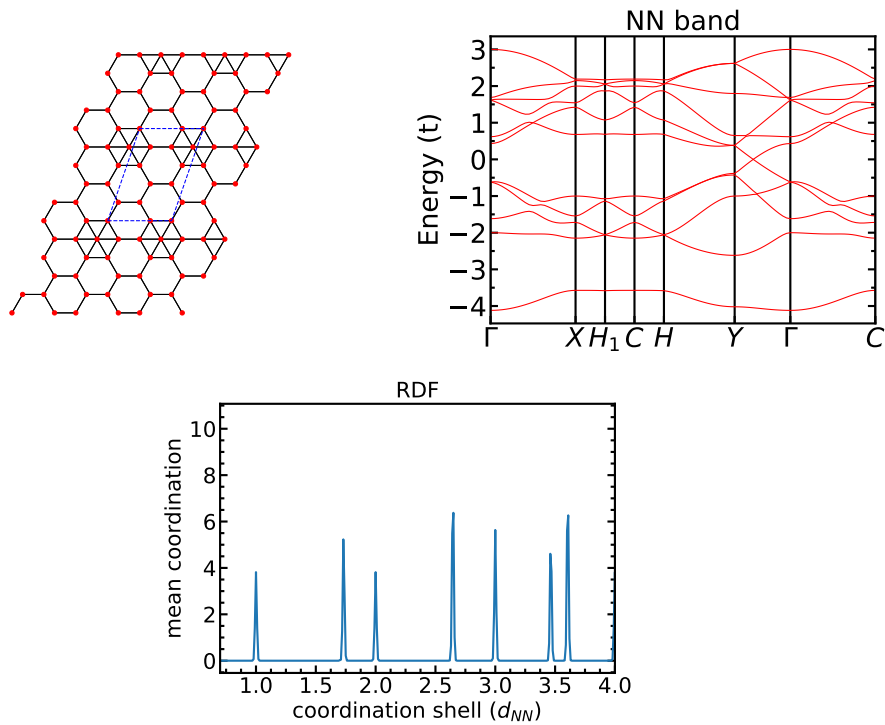| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	4	0	0	0	0	0	0	0	0	0	0	0	6

FIG. S4.   t4004 lattice framework, nearest neighbors band structure and radial distribution function.

t4005

Tiling reference number t4005 with space-group $'Pmma'$ (51) and 14 sites in the unit cell, with vertex type indicated in Tab. S5. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S5.

TABLE S5.   Tiling t4005 vertex types

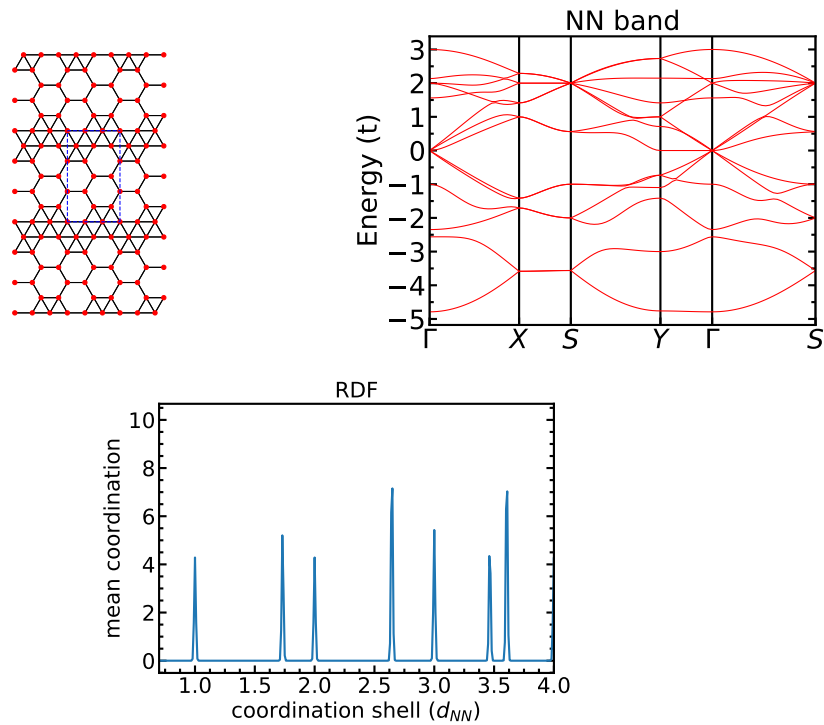| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	4	0	0	0	0	0	4	0	0	0	0	0	4

FIG. S5.   t4005 lattice framework, nearest neighbors band structure and radial distribution function.

t4006

Tiling reference number t4006 with space-group $'Pm'$ (6) and 30 sites in the unit cell, with vertex type indicated in Tab. S6. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S6.

TABLE S6.   Tiling t4006 vertex types

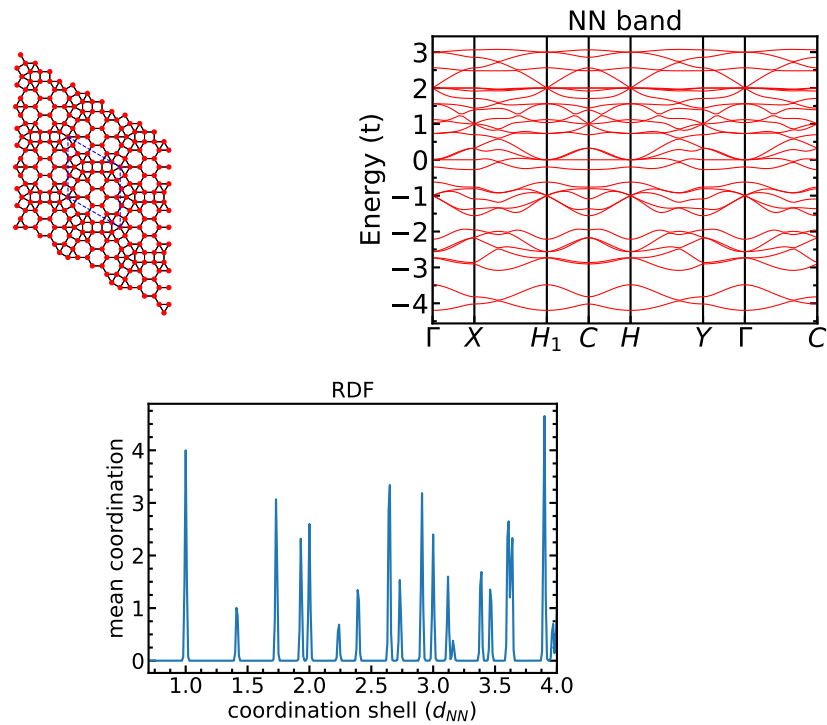| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	6	0	0	0	1	0	0	6	0	0	0	11	6

FIG. S6.   t4006 lattice framework, nearest neighbors band structure and radial distribution function.

t4007

Tiling reference number t4007 with space-group $'P6/mmm'$ (191) and 20 sites in the unit cell, with vertex type indicated in Tab. S7. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S7.

TABLE S7.   Tiling t4007 vertex types

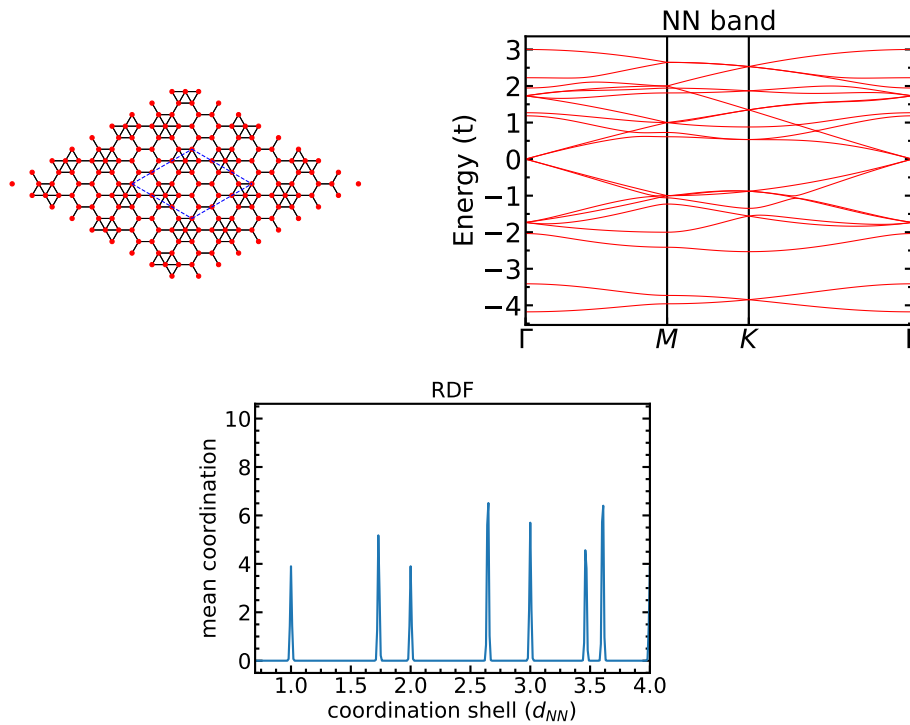| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	6	0	0	0	0	0	0	0	0	0	0	0	12

FIG. S7.   t4007 lattice framework, nearest neighbors band structure and radial distribution function.

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t4008

Tiling reference number t4008 with space-group $'P6/mmm'$ (191) and 27 sites in the unit cell, with vertex type indicated in Tab. S8. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S8.

TABLE S8. Tiling t4008 vertex types

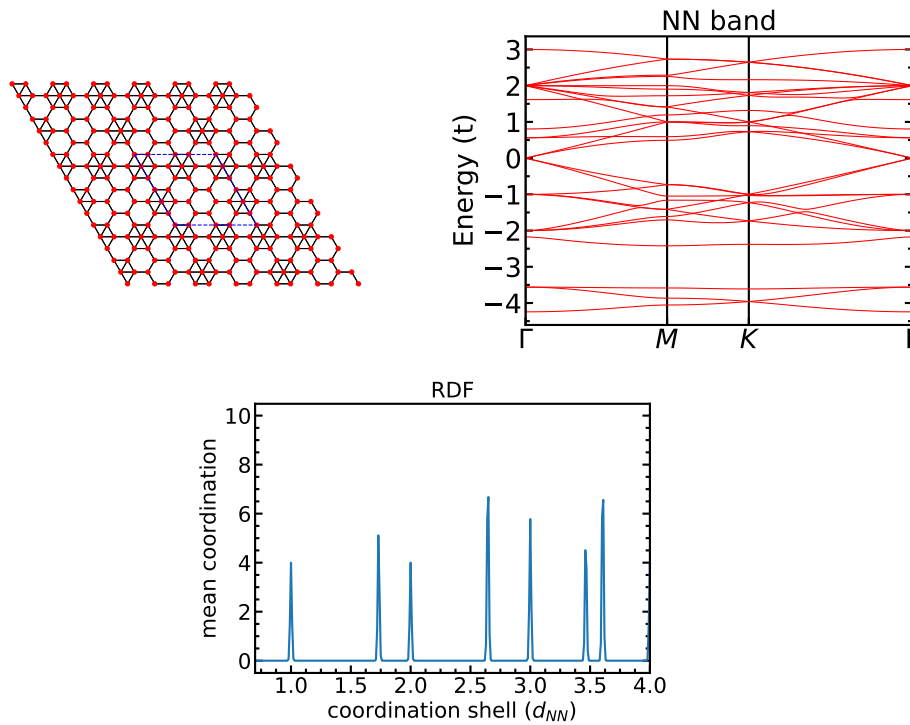| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	0	6	0	0	0	0	0	0	0	0	0	0	0	18

FIG. S8.   t4008 lattice framework, nearest neighbors band structure and radial distribution function.

t4009

Tiling reference number t4009 with space-group $'P6/m'$ (175) and 21 sites in the unit cell, with vertex type indicated in Tab. S9. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S9.

TABLE S9. Tiling t4009 vertex types

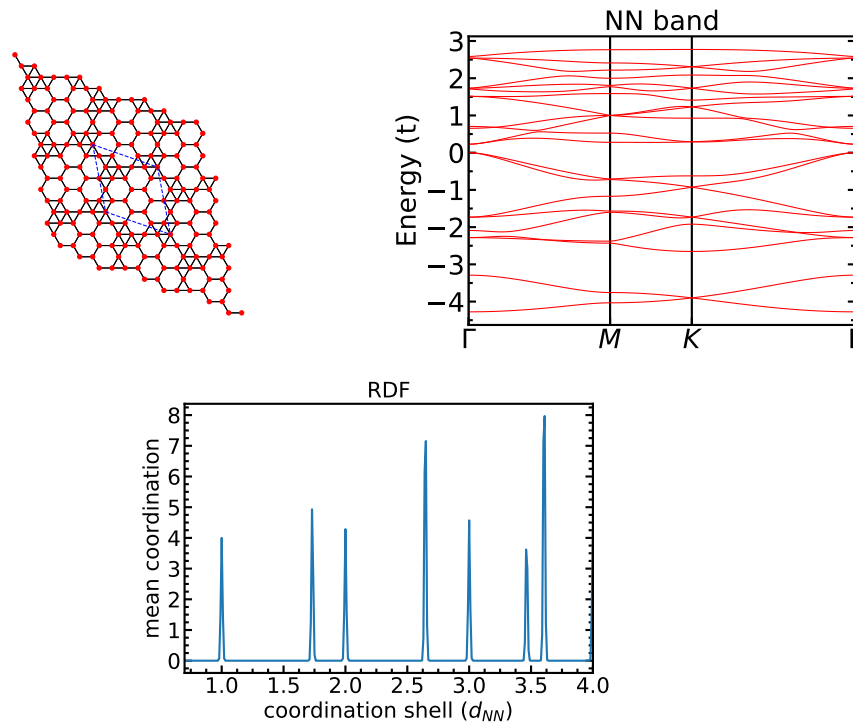| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	6	0	0	0	0	3	6	0	0	0	0	0	6

FIG. S9.   t4009 lattice framework, nearest neighbors band structure and radial distribution function.

t4010

Tiling reference number t4010 with space-group $'P6/m'$ (175) and 24 sites in the unit cell, with vertex type indicated in Tab. S10. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S10.

TABLE S10. Tiling t4010 vertex types

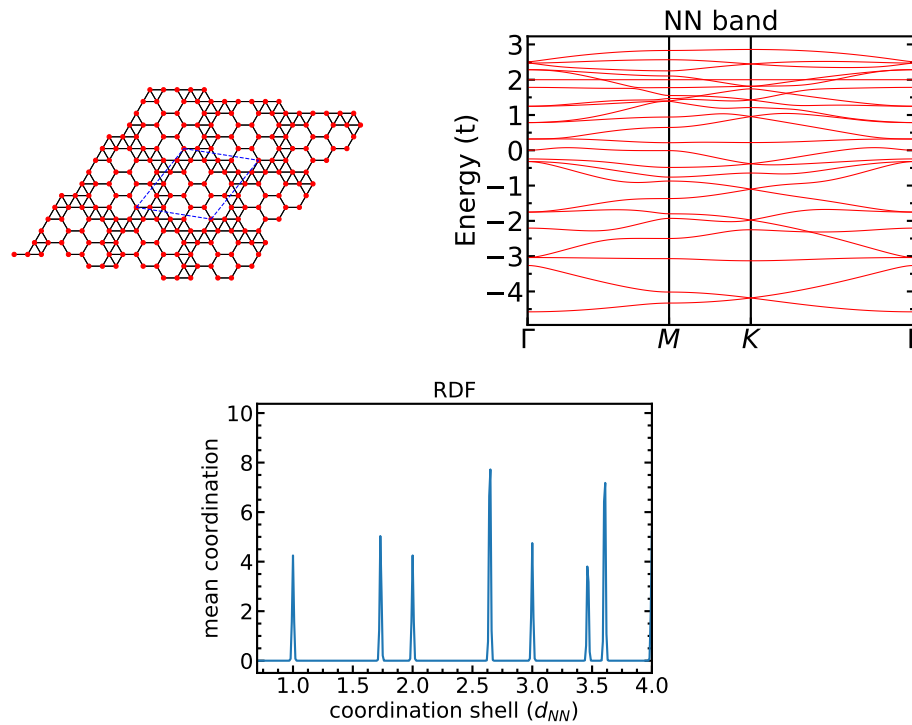| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	6	0	0	0	0	0	12	0	0	0	0	0	6

FIG. S10. t4010 lattice framework, nearest neighbors band structure and radial distribution function.

t4011

Tiling reference number t4011 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S11. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S11.

TABLE S11. Tiling t4011 vertex types

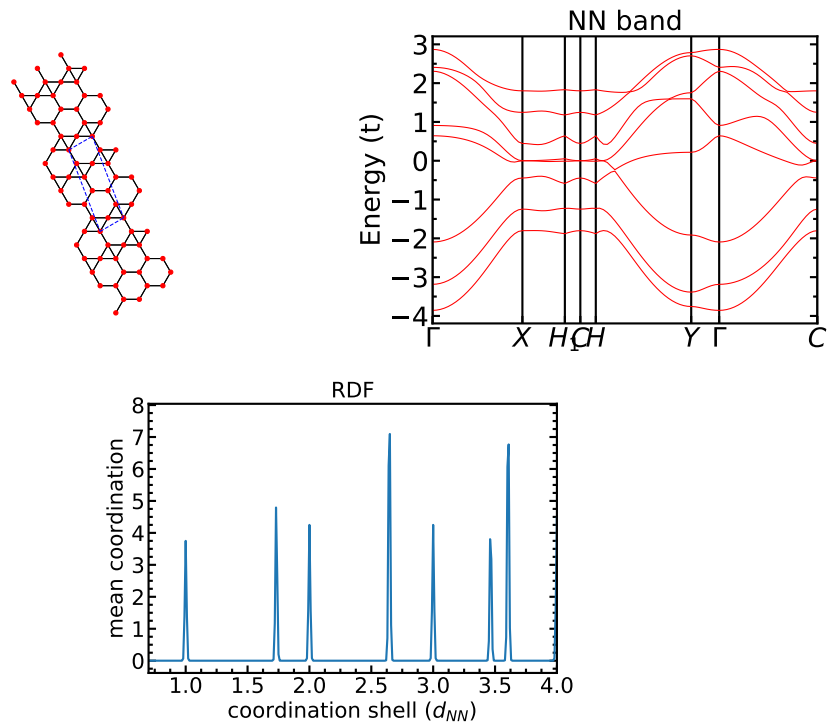| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	2	0	0	0	0	2	0	0	0	0	0	0	4

FIG. S11.   t4011 lattice framework, nearest neighbors band structure and radial distribution function.

t4012

Tiling reference number t4012 with space-group $'Cmmm'$ (65) and 7 sites in the unit cell, with vertex type indicated in Tab. S12. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S12.

TABLE S12. Tiling t4012 vertex types

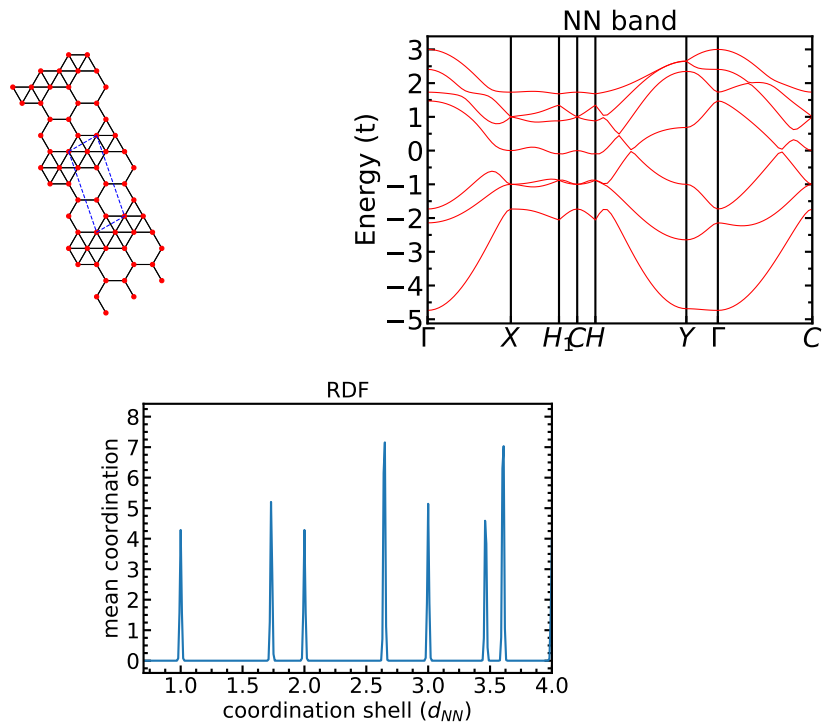| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	2	0	0	0	0	0	2	0	0	0	0	0	2

FIG. S12. t4012 lattice framework, nearest neighbors band structure and radial distribution function.

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t4013

Tiling reference number t4013 with space-group $'Pmma'$ (51) and 8 sites in the unit cell, with vertex type indicated in Tab. S13. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S13.

TABLE S13. Tiling t4013 vertex types

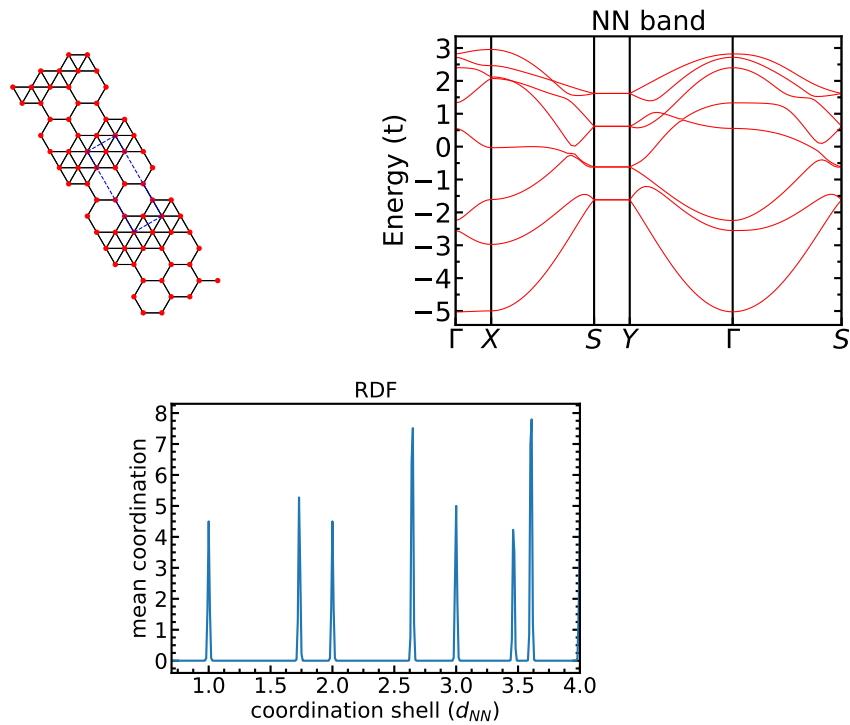| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	2	0	0	0	0	0	2	0	0	0	0	0	2

FIG. S13. t4013 lattice framework, nearest neighbors band structure and radial distribution function.

t4014

Tiling reference number t4014 with space-group $'P6/mmm'$ (191) and 19 sites in the unit cell, with vertex type indicated in Tab. S14. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S14.

TABLE S14.   Tiling t4014 vertex types

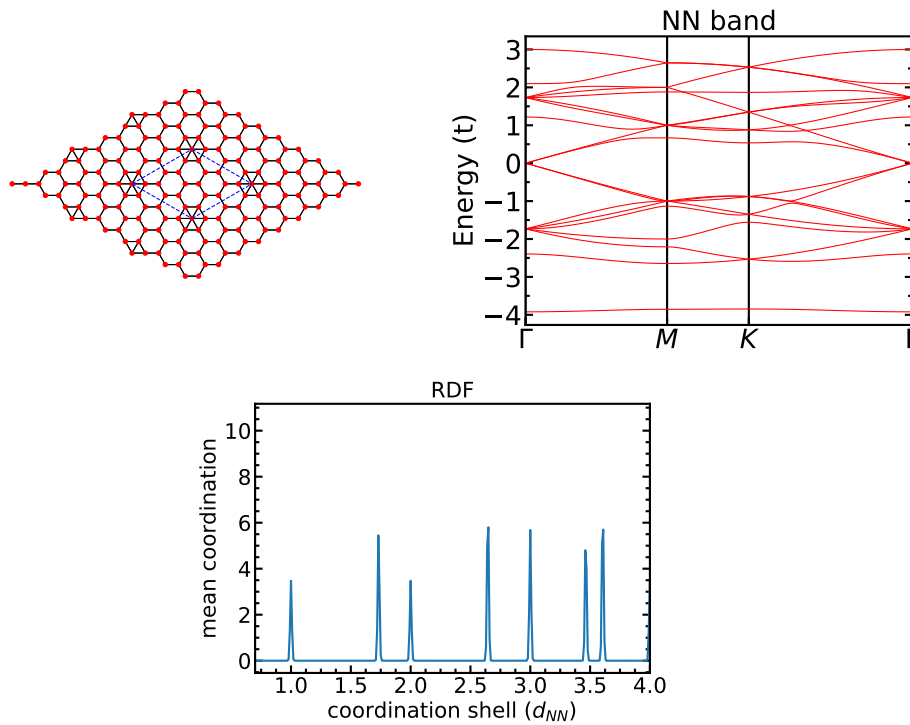| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	12	0	0	0	0	0	0	0	0	0	0	0	6

FIG. S14.   t4014 lattice framework, nearest neighbors band structure and radial distribution function.

t4015

Tiling reference number t4015 with space-group $'Pmmm'$ (47) and 7 sites in the unit cell, with vertex type indicated in Tab. S15. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S15.

TABLE S15.   Tiling t4015 vertex types

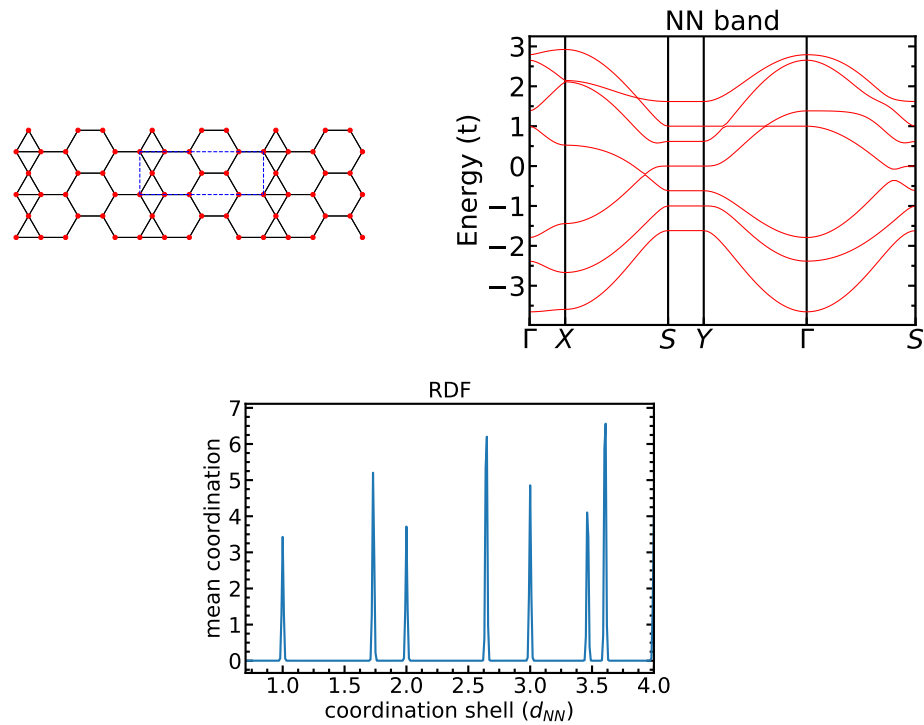| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	4	0	0	0	0	1	0	0	0	0	0	0	2

FIG. S15.   t4015 lattice framework, nearest neighbors band structure and radial distribution function.

t4016

Tiling reference number t4016 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S16. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S16.

TABLE S16.   Tiling t4016 vertex types

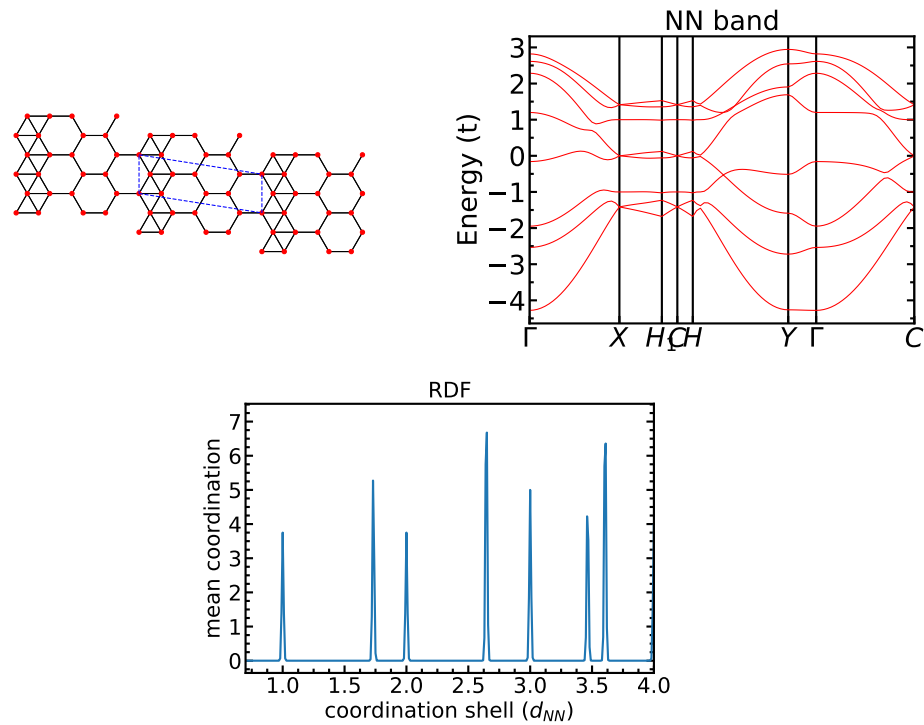| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	4	0	0	0	0	0	2	0	0	0	0	0	2

FIG. S16.   t4016 lattice framework, nearest neighbors band structure and radial distribution function.

t4017

Tiling reference number t4017 with space-group $'P6/m'$ (175) and 15 sites in the unit cell, with vertex type indicated in Tab. S17. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S17.

TABLE S17.   Tiling t4017 vertex types

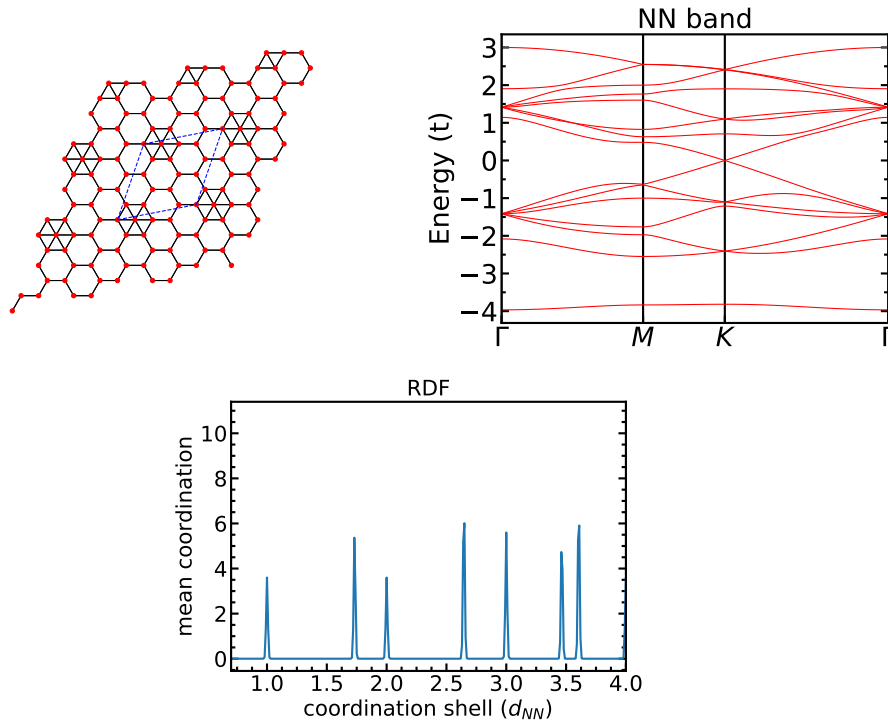| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	8	0	0	0	0	0	0	0	0	0	0	0	6

FIG. S17.   t4017 lattice framework, nearest neighbors band structure and radial distribution function.

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t4018

Tiling reference number t4018 with space-group $'Pmmm'$ (47) and 12 sites in the unit cell, with vertex type indicated in Tab. S18. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S18.

TABLE S18.   Tiling t4018 vertex types

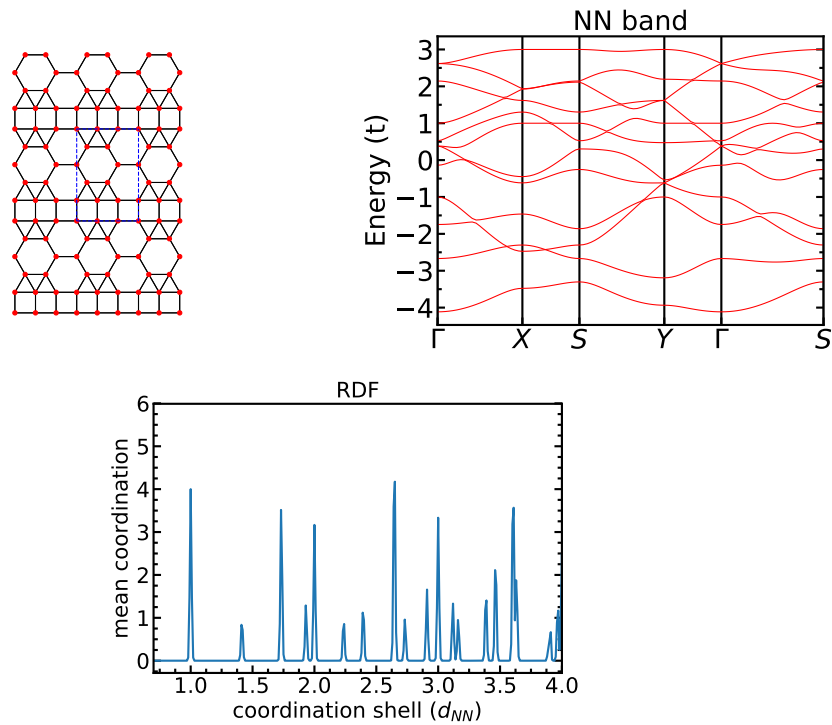| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	2	0	0	0	0	0	0	0	2	0	0	4	4

FIG. S18.   t4018 lattice framework, nearest neighbors band structure and radial distribution function.

t4019

Tiling reference number t4019 with space-group $'Pmmm'$ (47) and 9 sites in the unit cell, with vertex type indicated in Tab. S19. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S19.

TABLE S19. Tiling t4019 vertex types

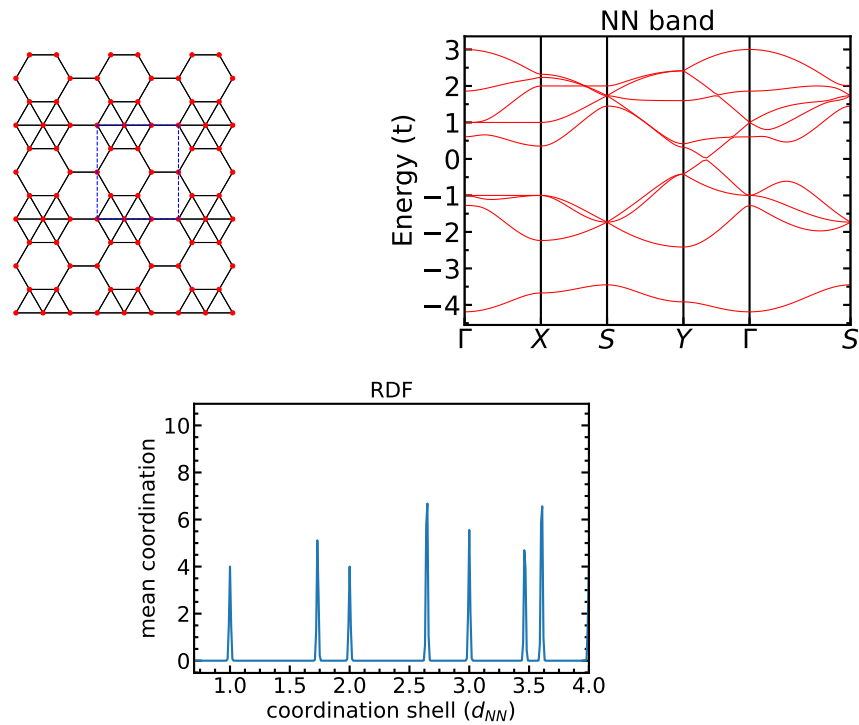| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	2	0	0	0	0	0	0	0	0	0	0	0	6

FIG. S19.   t4019 lattice framework, nearest neighbors band structure and radial distribution function.

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t4020

Tiling reference number t4020 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S20. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S20.

TABLE S20.   Tiling t4020 vertex types

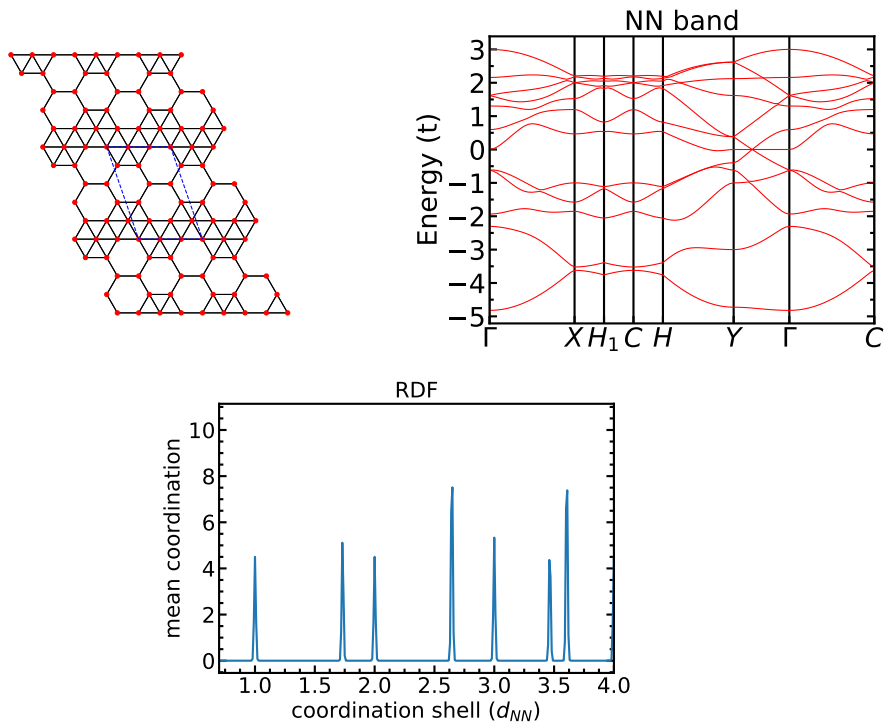| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	2	0	0	0	0	0	4	0	0	0	0	0	4

FIG. S20.   t4020 lattice framework, nearest neighbors band structure and radial distribution function.

t4021

Tiling reference number t4021 with space-group $'Cmmm'$ (65) and 11 sites in the unit cell, with vertex type indicated in Tab. S21. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S21.

TABLE S21.   Tiling t4021 vertex types

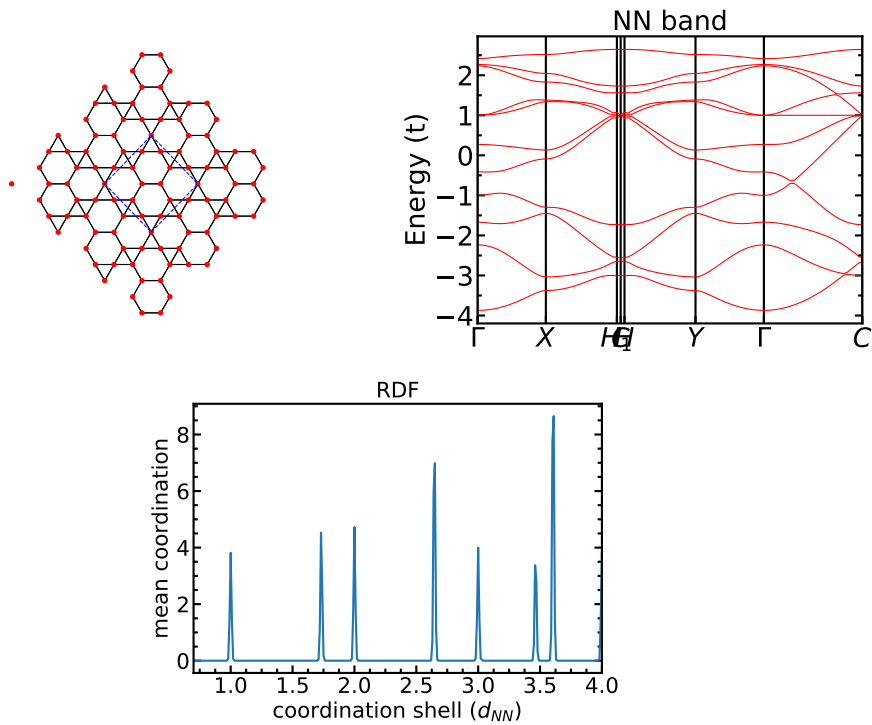| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	2	0	0	0	0	5	0	0	0	0	0	0	4

FIG. S21.   t4021 lattice framework, nearest neighbors band structure and radial distribution function.

t4022

Tiling reference number t4022 with space-group $'P2/m'$ (10) and 20 sites in the unit cell, with vertex type indicated in Tab. S22. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S22.

TABLE S22.   Tiling t4022 vertex types

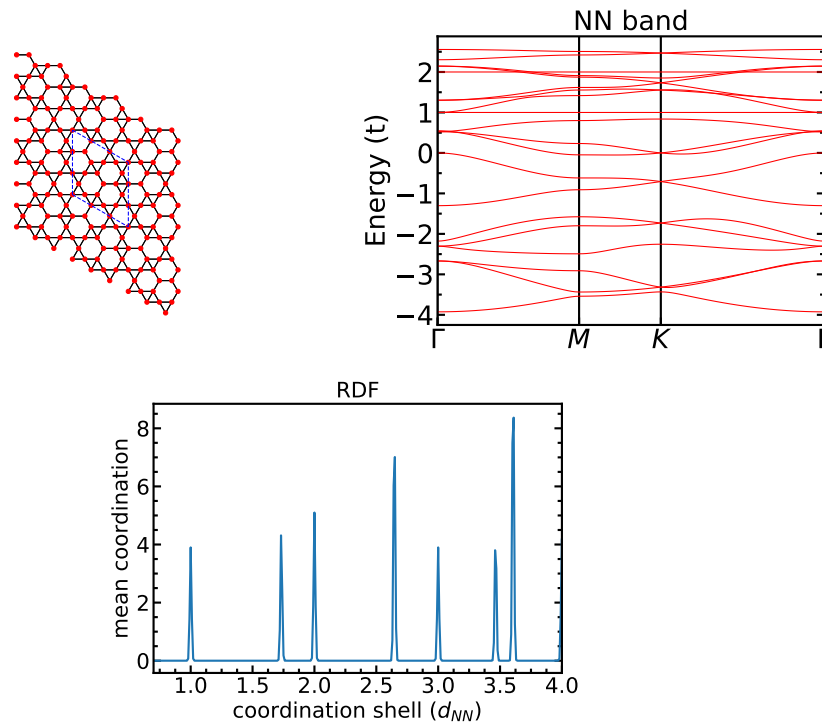| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	2	0	0	0	0	12	0	0	0	0	0	0	6

FIG. S22.   t4022 lattice framework, nearest neighbors band structure and radial distribution function.

t4023

Tiling reference number t4023 with space-group $'P-6'$ (174) and 10 sites in the unit cell, with vertex type indicated in Tab. S23. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S23.

TABLE S23.   Tiling t4023 vertex types

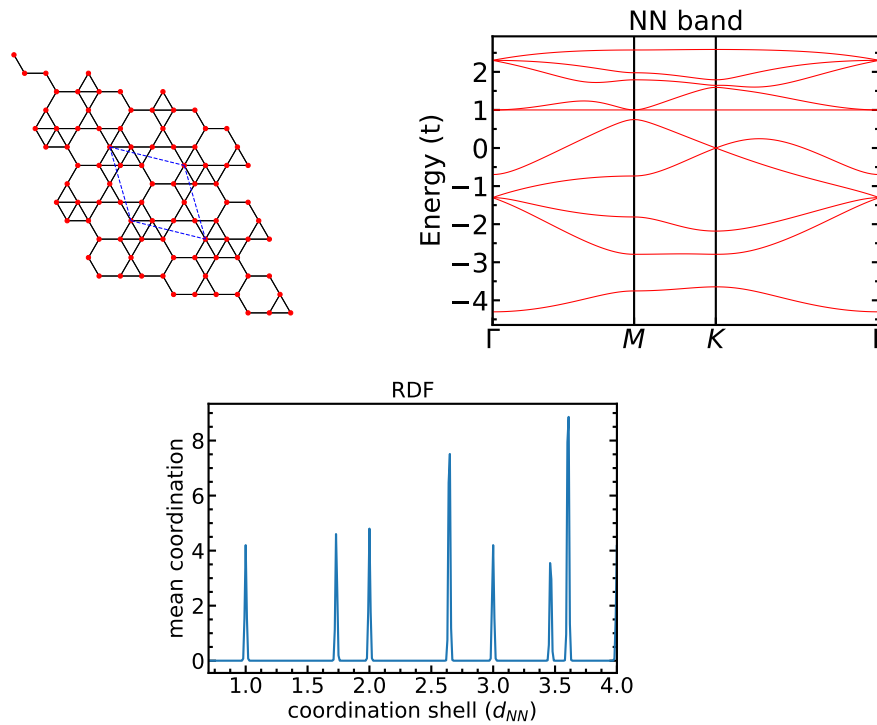| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	1	0	0	0	0	3	3	0	0	0	0	0	3

FIG. S23.   t4023 lattice framework, nearest neighbors band structure and radial distribution function.

t4024

Tiling reference number t4024 with space-group $'P - 62m'$ (189) and 13 sites in the unit cell, with vertex type indicated in Tab. S24. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S24.

TABLE S24.   Tiling t4024 vertex types

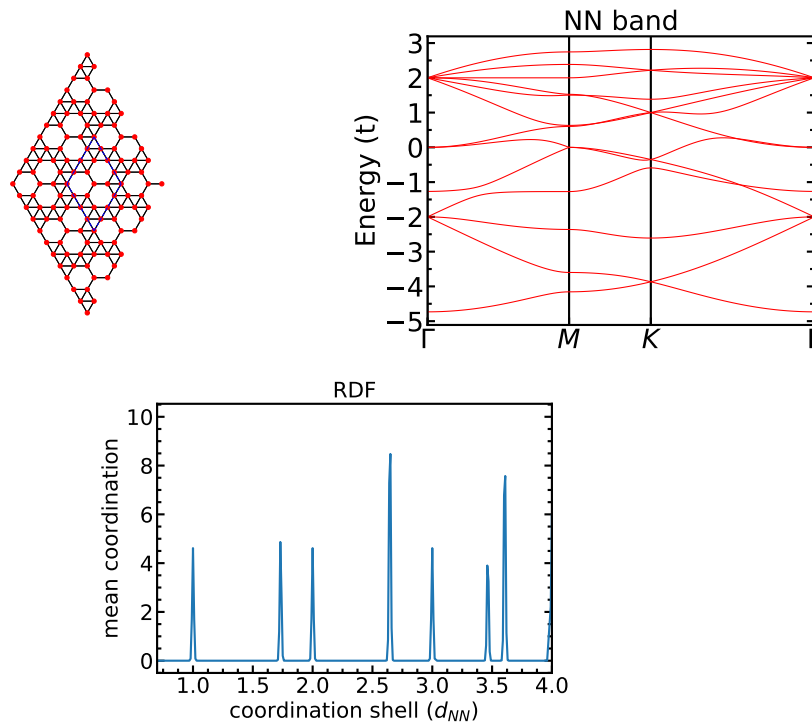| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	1	0	0	0	0	0	9	0	0	0	0	0	3

FIG. S24.   t4024 lattice framework, nearest neighbors band structure and radial distribution function.

t4025

Tiling reference number t4025 with space-group $'Amm2'$ (38) and 48 sites in the unit cell, with vertex type indicated in Tab. S25. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S25.

TABLE S25.   Tiling t4025 vertex types

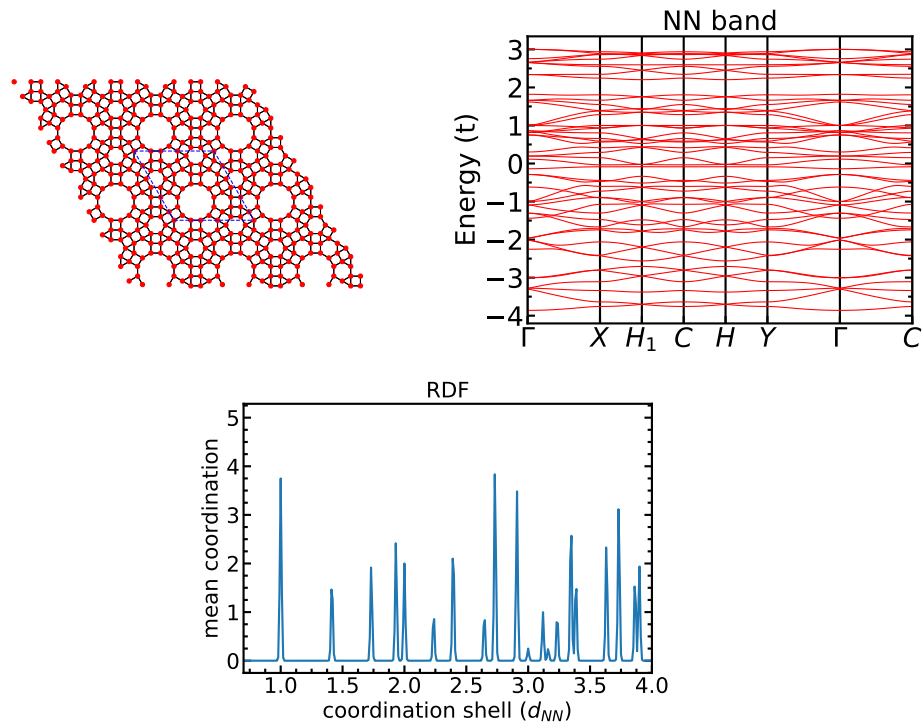| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	12	0	12	0	0	0	0	0	0	24	0

FIG. S25.   t4025 lattice framework, nearest neighbors band structure and radial distribution function.

t4026

Tiling reference number t4026 with space-group $'Amm2'$ (38) and 42 sites in the unit cell, with vertex type indicated in Tab. S26. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S26.

TABLE S26.   Tiling t4026 vertex types

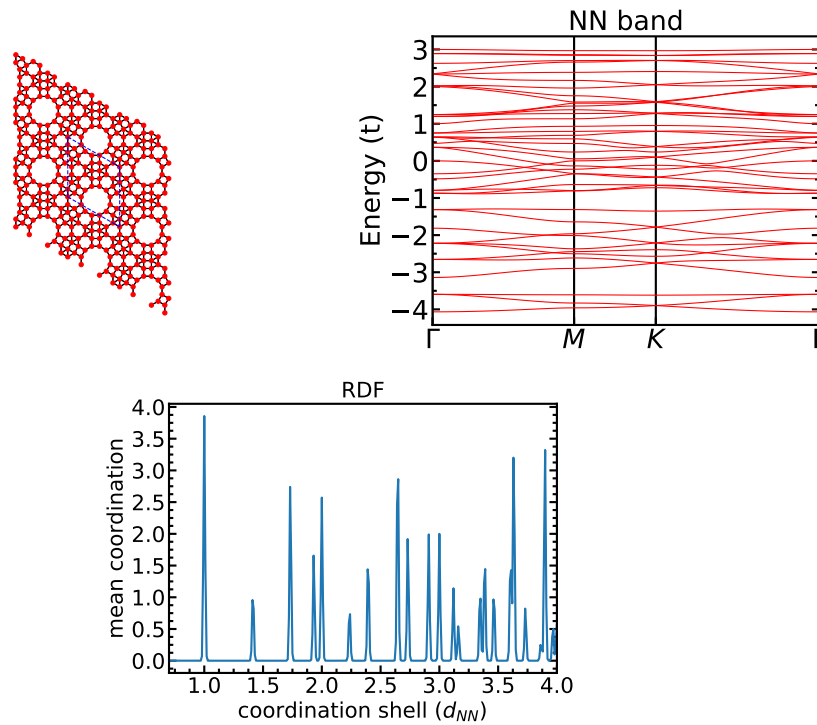| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	12	0	0	0	0	0	6	0	0	12	12

FIG. S26.   t4026 lattice framework, nearest neighbors band structure and radial distribution function.

t4027

Tiling reference number t4027 with space-group $'Amm2'$ (38) and 36 sites in the unit cell, with vertex type indicated in Tab. S27. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S27.

TABLE S27. Tiling t4027 vertex types

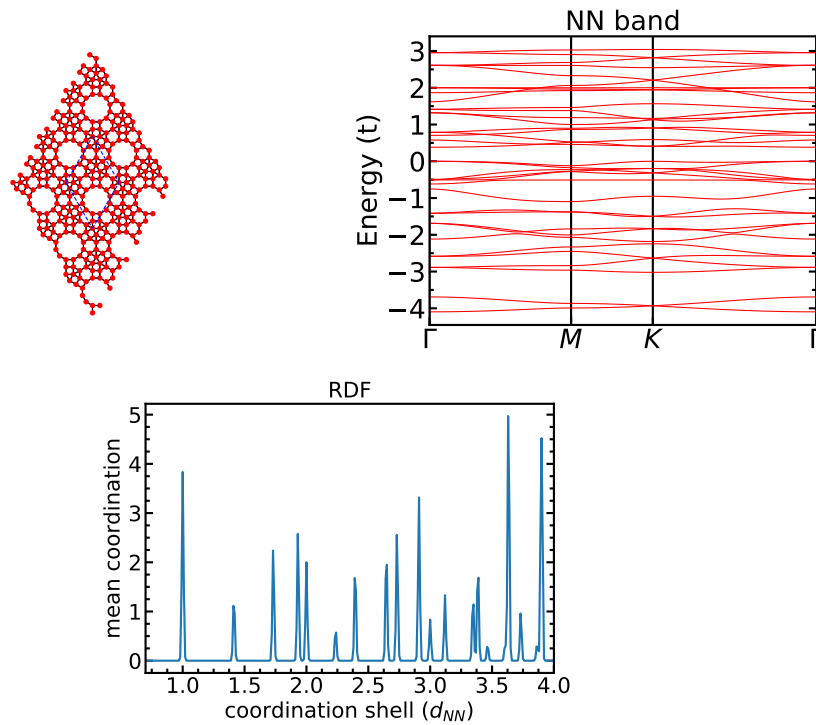| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	12	0	1	0	0	6	0	0	0	11	6

FIG. S27.   t4027 lattice framework, nearest neighbors band structure and radial distribution function.

t4028

Tiling reference number t4028 with space-group $'Amm2'$ (38) and 42 sites in the unit cell, with vertex type indicated in Tab. S28. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S28.

TABLE S28.   Tiling t4028 vertex types

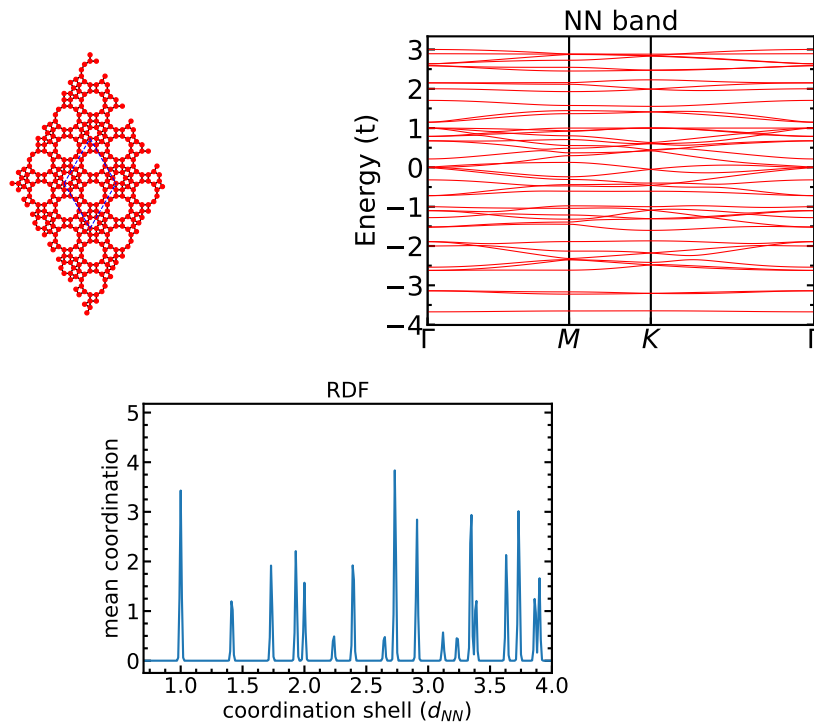| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	24	0	7	0	0	0	0	0	0	11	0

FIG. S28.   t4028 lattice framework, nearest neighbors band structure and radial distribution function.

t4029

Tiling reference number t4029 with space-group $'Pm'$ (6) and 42 sites in the unit cell, with vertex type indicated in Tab. S29. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S29.

TABLE S29.   Tiling t4029 vertex types

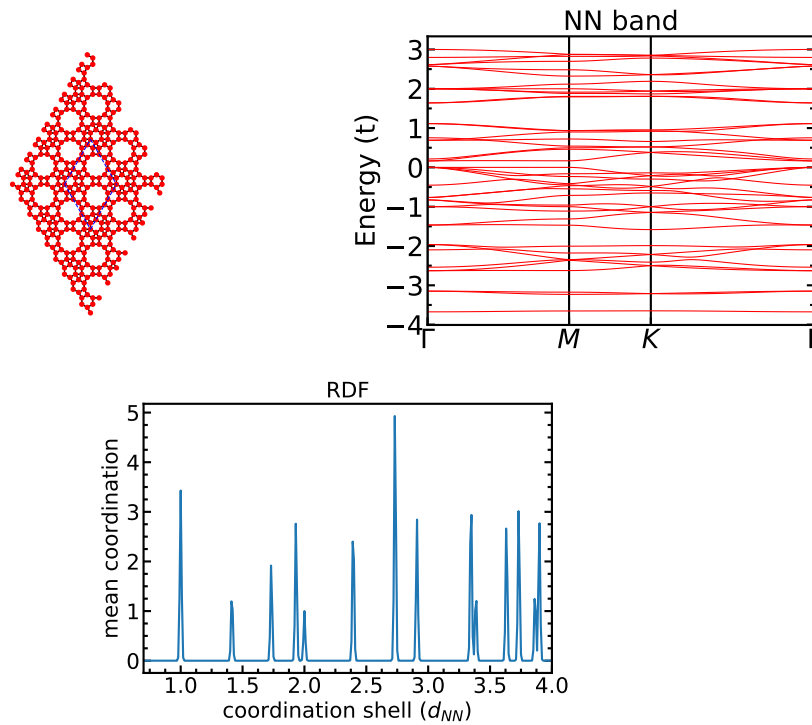| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	24	0	18	0	0	0	0	0	0	0	0

FIG. S29.   t4029 lattice framework, nearest neighbors band structure and radial distribution function.

t4030

Tiling reference number t4030 with space-group $'Pm'$ (6) and 14 sites in the unit cell, with vertex type indicated in Tab. S30. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S30.

TABLE S30.　Tiling t4030 vertex types

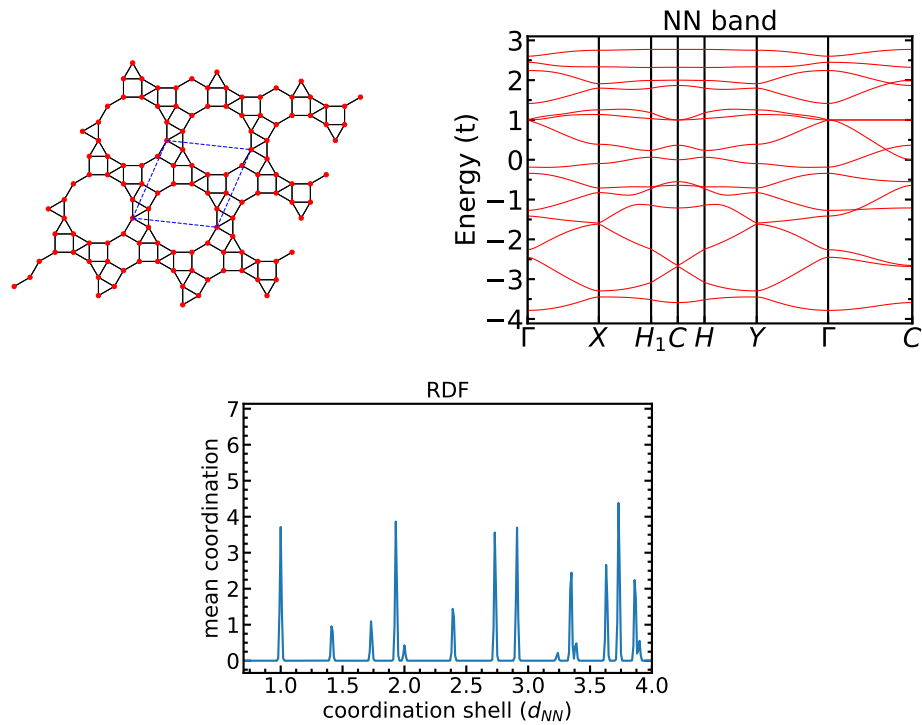| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	4	0	2	0	0	0	0	4	4	0	0

FIG. S30.　t4030 lattice framework, nearest neighbors band structure and radial distribution function.

t4031

Tiling reference number t4031 with space-group $'Pm'$ (6) and 30 sites in the unit cell, with vertex type indicated in Tab. S31. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S31.

TABLE S31.   Tiling t4031 vertex types

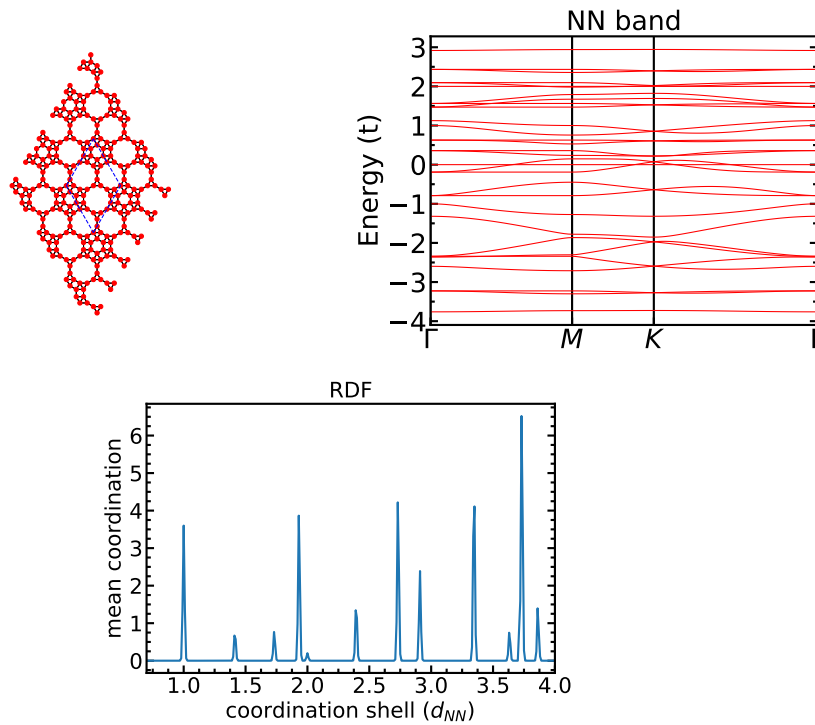| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	12	0	0	6	0	0	0	0	12	0	0	0

FIG. S31.   t4031 lattice framework, nearest neighbors band structure and radial distribution function.

t4032

Tiling reference number t4032 with space-group $'Amm2'$ (38) and 30 sites in the unit cell, with vertex type indicated in Tab. S32. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S32.

TABLE S32. Tiling t4032 vertex types

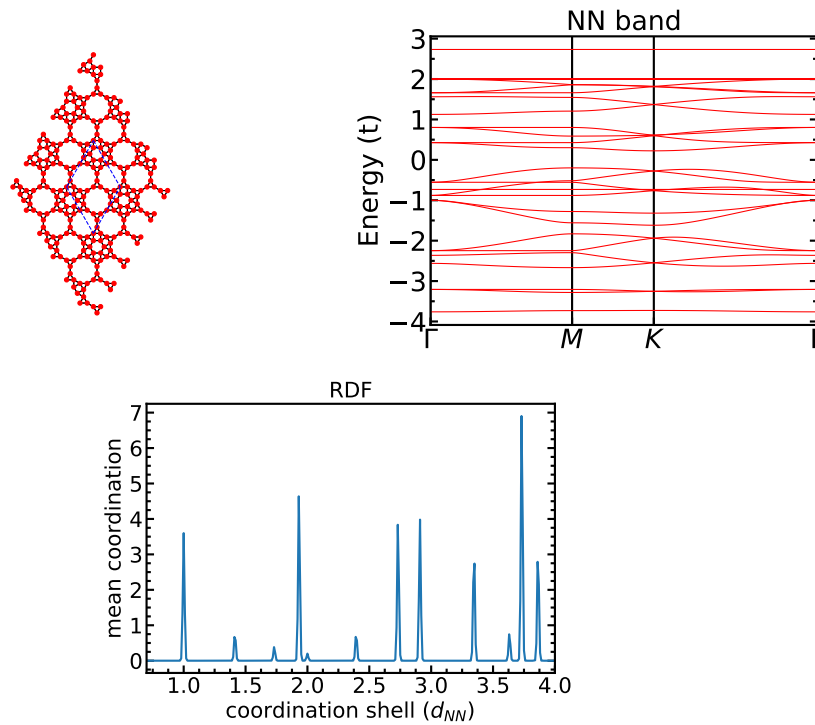| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	12	0	0	6	0	0	0	0	0	12	0	0

FIG. S32. t4032 lattice framework, nearest neighbors band structure and radial distribution function.

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t4033

Tiling reference number t4033 with space-group $'Amm2'$ (38) and 28 sites in the unit cell, with vertex type indicated in Tab. S33. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S33.

TABLE S33.   Tiling t4033 vertex types

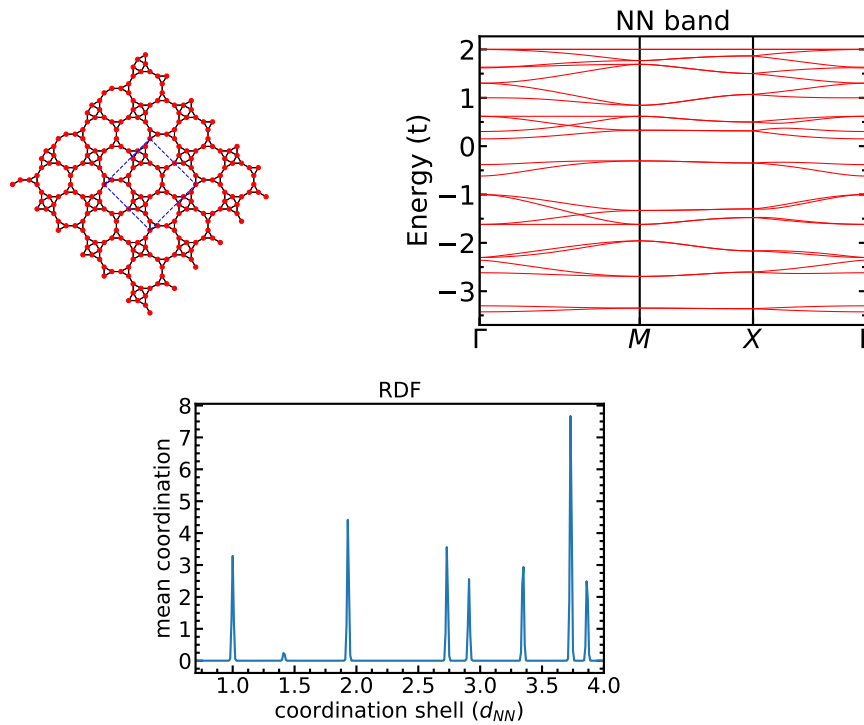| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	20	0	0	0	0	0	0	0	0	8	0	0

FIG. S33.   t4033 lattice framework, nearest neighbors band structure and radial distribution function.

34

t4034

Tiling reference number t4034 with space-group $'Amm2'$ (38) and 25 sites in the unit cell, with vertex type indicated in Tab. S34. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S34.

TABLE S34. Tiling t4034 vertex types

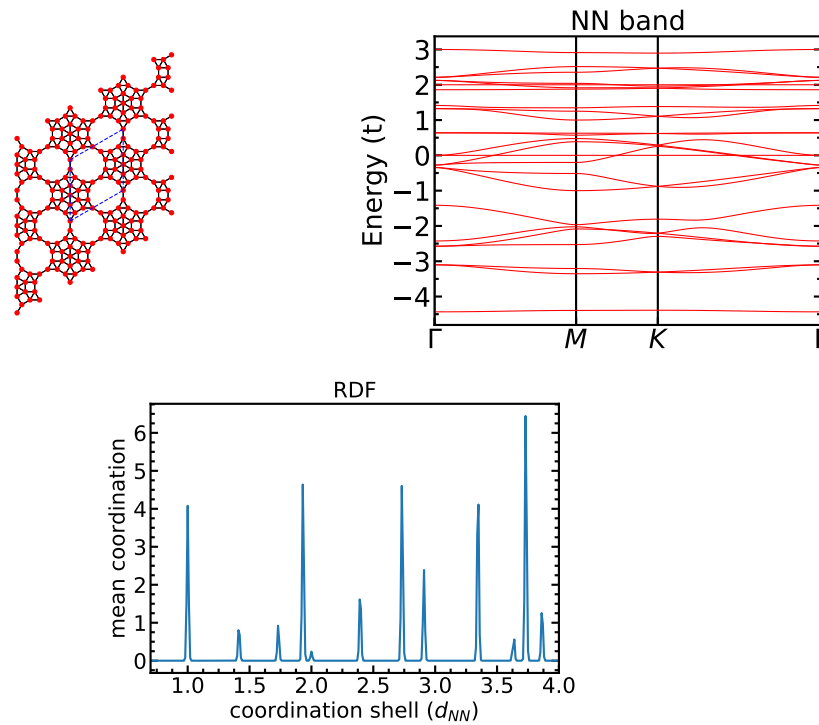| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	6	0	0	0	0	0	6	0	12	0	0	0

FIG. S34. t4034 lattice framework, nearest neighbors band structure and radial distribution function.

t4035

Tiling reference number t4035 with space-group $'Pm'$ (6) and 25 sites in the unit cell, with vertex type indicated in Tab. S35. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S35.

TABLE S35.   Tiling t4035 vertex types

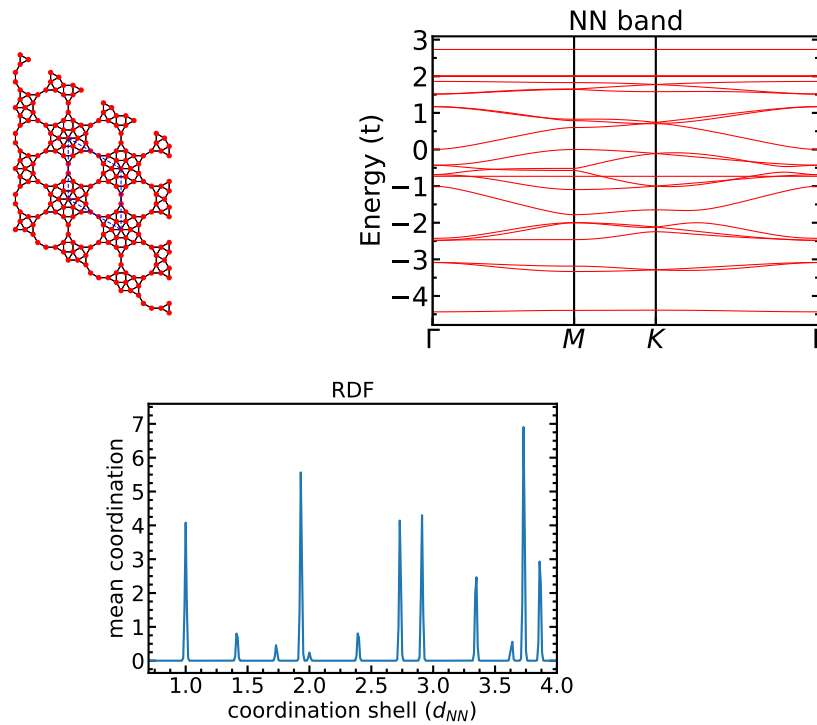| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	6	0	0	0	0	0	6	0	0	12	0	0

FIG. S35.   t4035 lattice framework, nearest neighbors band structure and radial distribution function.

t4036

Tiling reference number t4036 with space-group $'Pmmm'$ (47) and 12 sites in the unit cell, with vertex type indicated in Tab. S36. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S36.

TABLE S36. Tiling t4036 vertex types

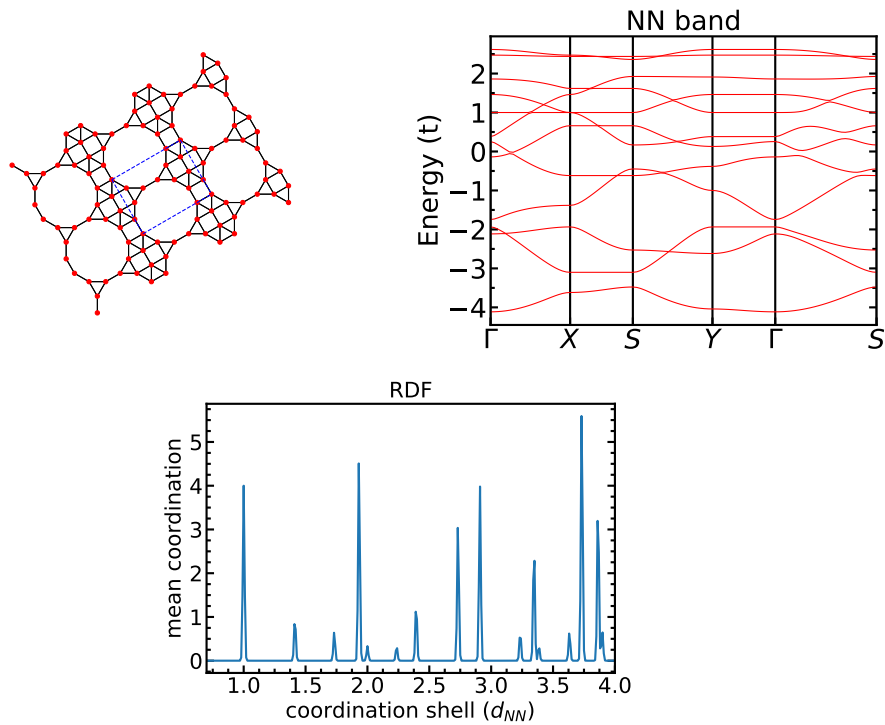| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	2	0	0	0	0	0	0	2	4	4	0	0

FIG. S36. t4036 lattice framework, nearest neighbors band structure and radial distribution function.

t4037

Tiling reference number t4037 with space-group $'Pm'$ (6) and 14 sites in the unit cell, with vertex type indicated in Tab. S37. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S37.

TABLE S37. Tiling t4037 vertex types

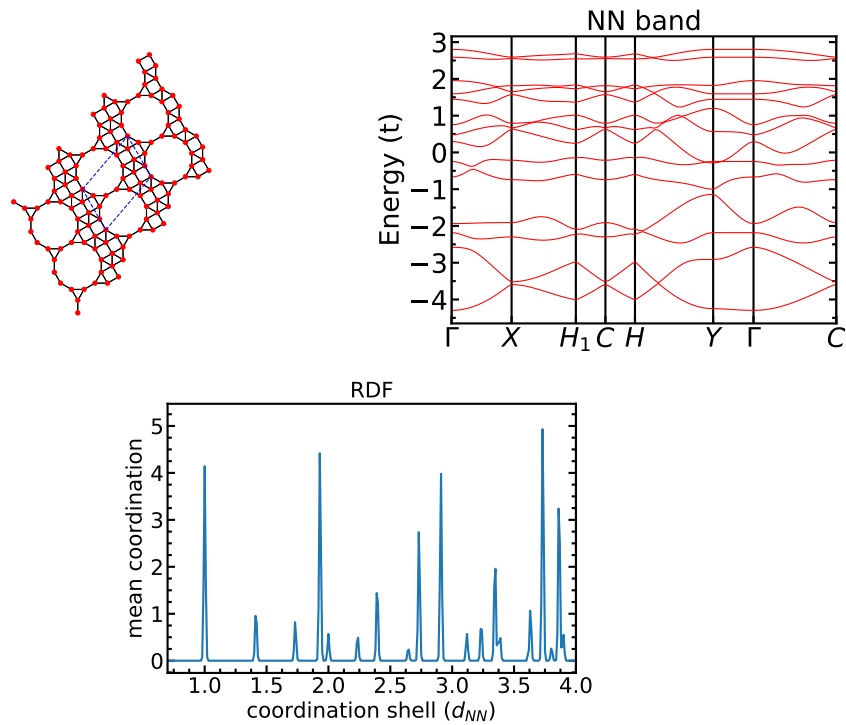| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	2	0	0	0	0	0	0	4	4	4	0	0

FIG. S37.   t4037 lattice framework, nearest neighbors band structure and radial distribution function.

t4038

Tiling reference number t4038 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S38. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S38.

TABLE S38.   Tiling t4038 vertex types

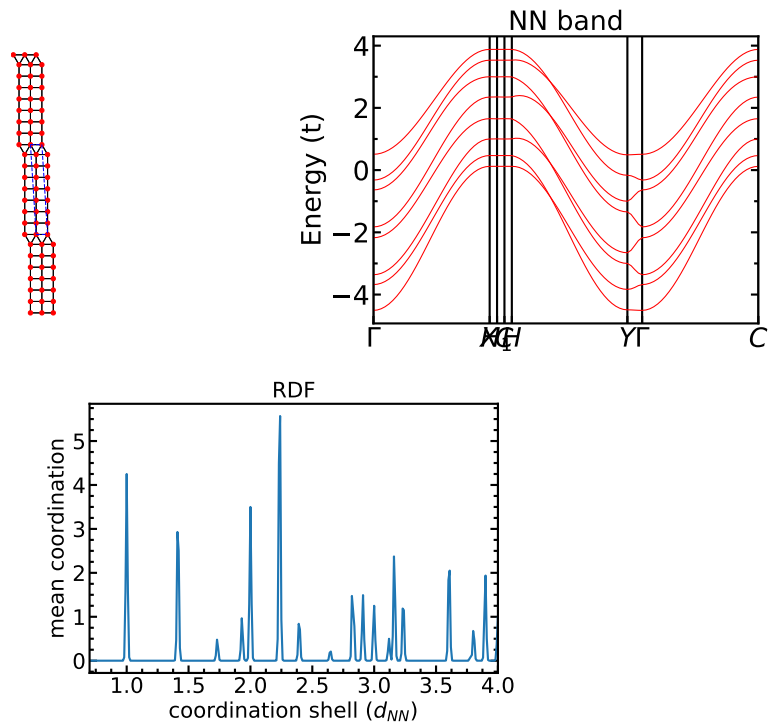| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	6	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S38.   t4038 lattice framework, nearest neighbors band structure and radial distribution function.

t4039

Tiling reference number t4039 with space-group $'Cmmm'$ (65) and 13 sites in the unit cell, with vertex type indicated in Tab. S39. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S39.

TABLE S39.   Tiling t4039 vertex types

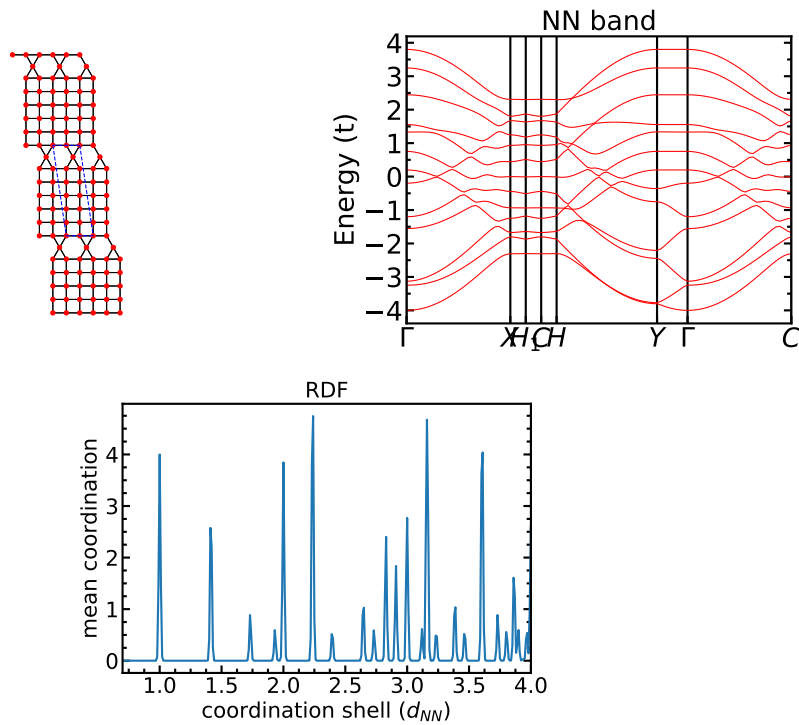| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	8	0	0	0	0	0	1	0	0	0	0	0	4	0

FIG. S39.   t4039 lattice framework, nearest neighbors band structure and radial distribution function.

t4040

Tiling reference number t4040 with space-group $'Pmmm'$ (47) and 13 sites in the unit cell, with vertex type indicated in Tab. S40. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S40.

TABLE S40.   Tiling t4040 vertex types

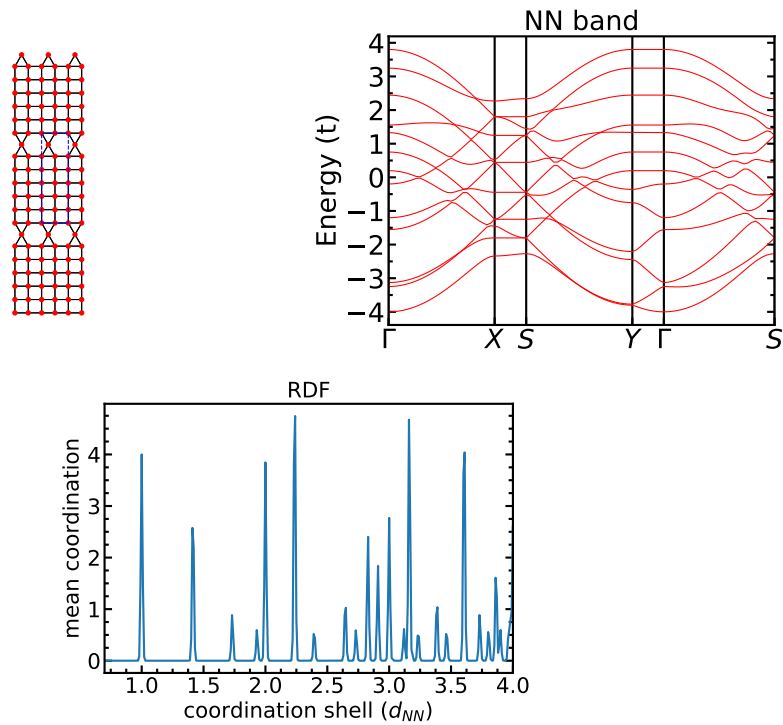| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	8	0	0	0	0	0	1	0	0	0	0	0	4	0

FIG. S40.   t4040 lattice framework, nearest neighbors band structure and radial distribution function.

t4041

Tiling reference number t4041 with space-group $'Pmm2'$ (25) and 8 sites in the unit cell, with vertex type indicated in Tab. S41. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S41.

TABLE S41. Tiling t4041 vertex types

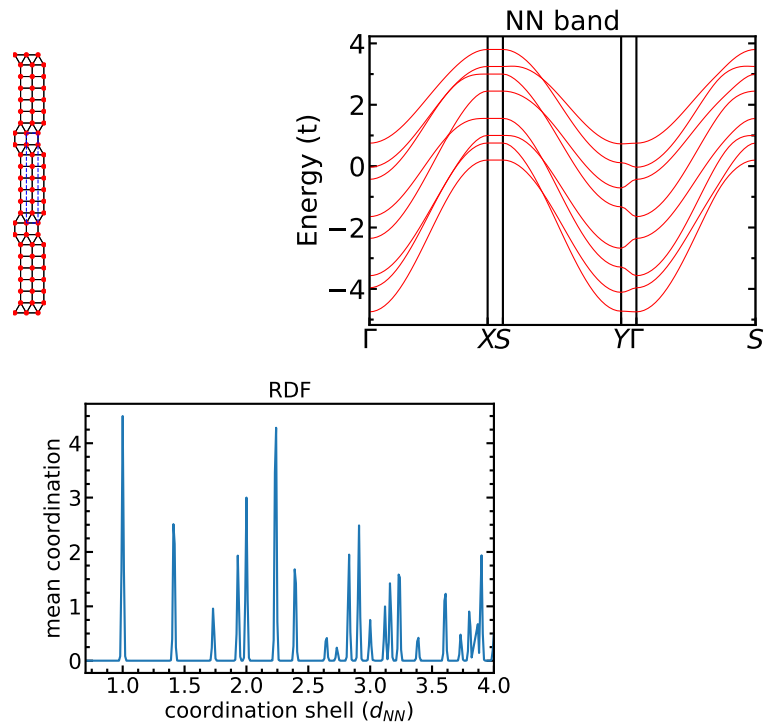| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S41.   t4041 lattice framework, nearest neighbors band structure and radial distribution function.

t4042

Tiling reference number t4042 with space-group $'Pmmm'$ (47) and 7 sites in the unit cell, with vertex type indicated in Tab. S42. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S42.

TABLE S42. Tiling t4042 vertex types

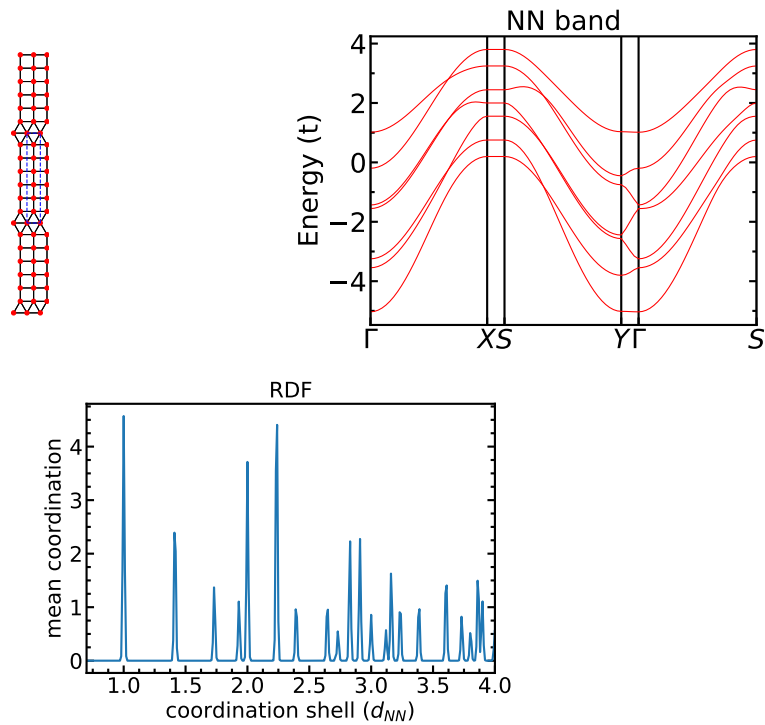| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	4	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S42. t4042 lattice framework, nearest neighbors band structure and radial distribution function.

t4043

Tiling reference number t4043 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S43. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S43.

TABLE S43. Tiling t4043 vertex types

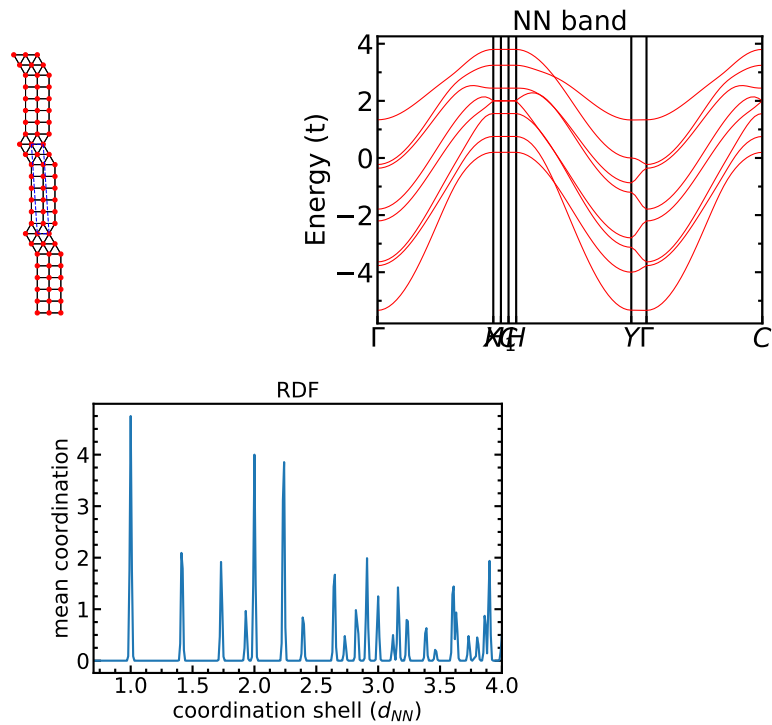| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	4	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S43.   t4043 lattice framework, nearest neighbors band structure and radial distribution function.

t4044

Tiling reference number t4044 with space-group $'Amm2'$ (38) and 14 sites in the unit cell, with vertex type indicated in Tab. S44. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S44.

TABLE S44.   Tiling t4044 vertex types

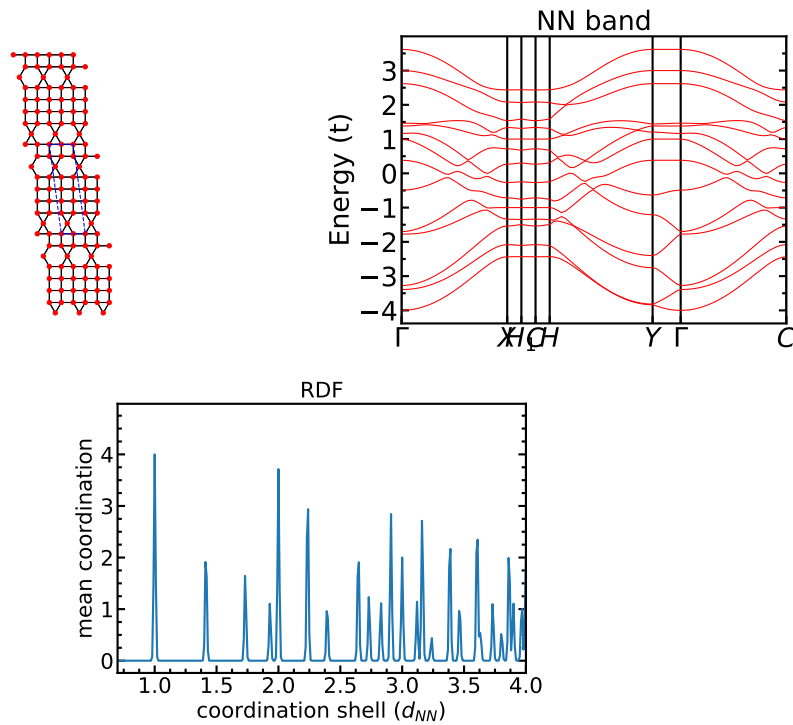| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S44.   t4044 lattice framework, nearest neighbors band structure and radial distribution function.

45

t4045

Tiling reference number t4045 with space-group $'Pmma'$ (51) and 14 sites in the unit cell, with vertex type indicated in Tab. S45. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S45.

TABLE S45.   Tiling t4045 vertex types

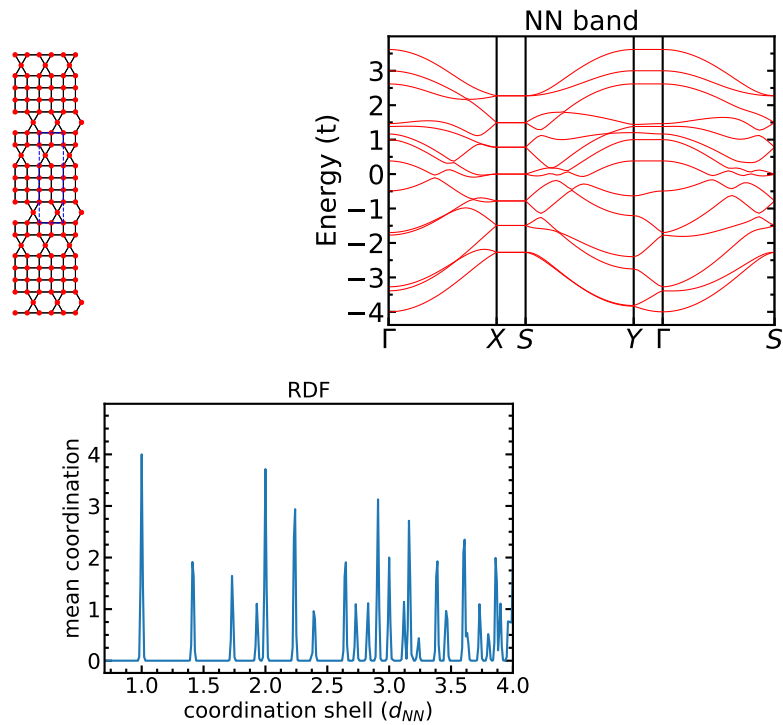| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S45.   t4045 lattice framework, nearest neighbors band structure and radial distribution function.

46

t4046

Tiling reference number t4046 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S46. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S46.

TABLE S46.   Tiling t4046 vertex types

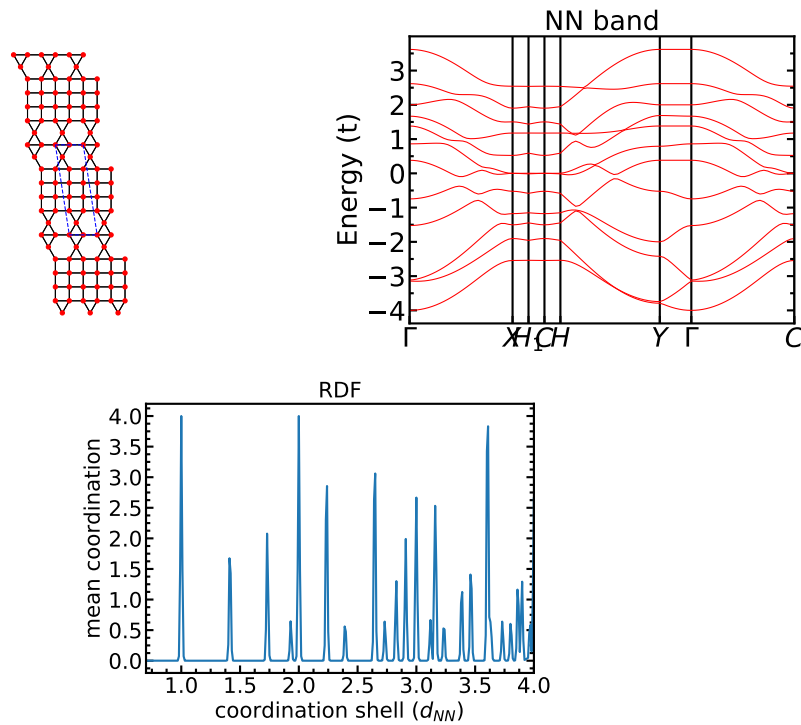| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	2	0	0	0	0	0	4	2

FIG. S46.   t4046 lattice framework, nearest neighbors band structure and radial distribution function.

t4047

Tiling reference number t4047 with space-group $'Pmma'$ (51) and 12 sites in the unit cell, with vertex type indicated in Tab. S47. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S47.

TABLE S47.   Tiling t4047 vertex types

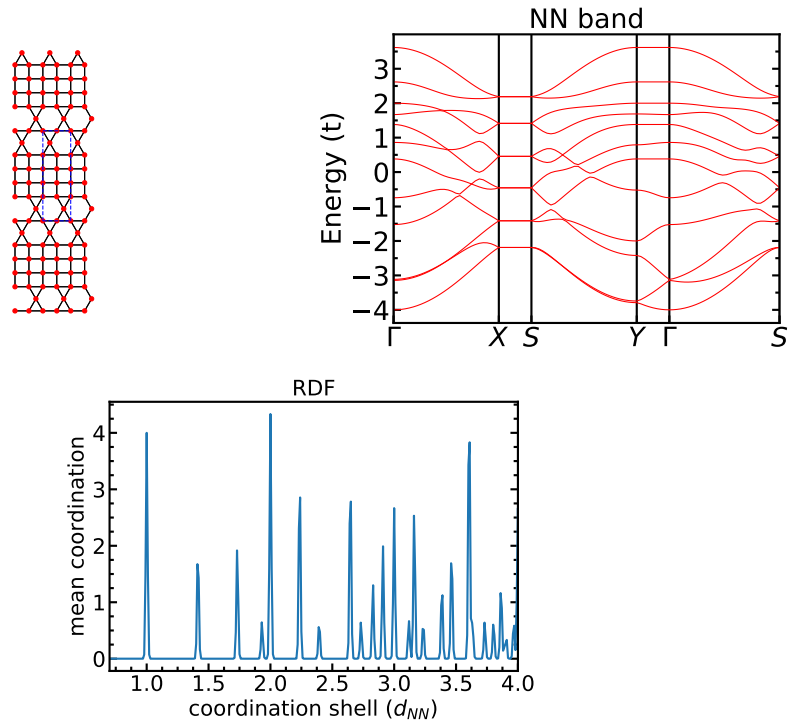| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	4	0	0	0	0	0	4	0

FIG. S47.   t4047 lattice framework, nearest neighbors band structure and radial distribution function.

t4048

Tiling reference number t4048 with space-group $'Pmmm'$ (47) and 14 sites in the unit cell, with vertex type indicated in Tab. S48. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S48.

TABLE S48. Tiling t4048 vertex types

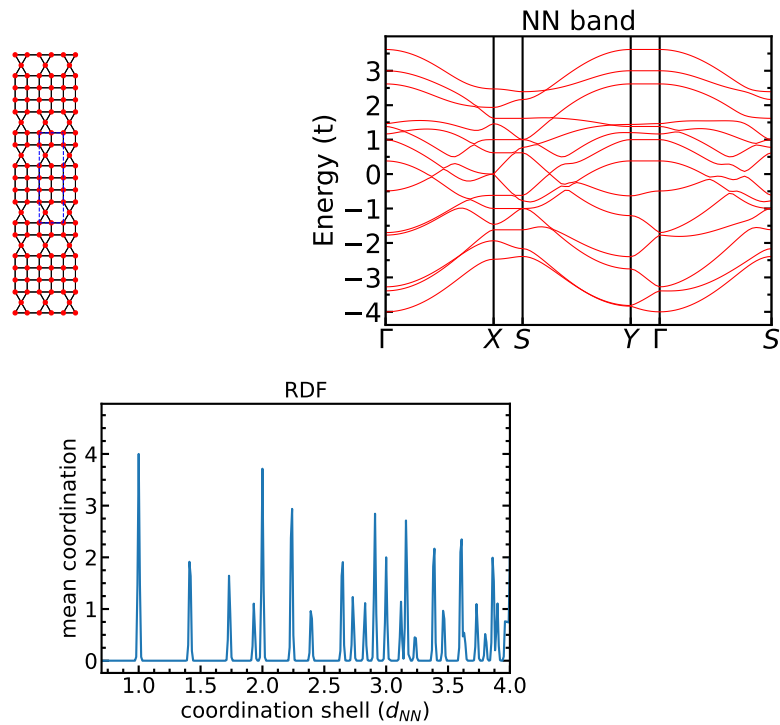| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S48. t4048 lattice framework, nearest neighbors band structure and radial distribution function.

t4049

Tiling reference number t4049 with space-group $'Amm2'$ (38) and 14 sites in the unit cell, with vertex type indicated in Tab. S49. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S49.

TABLE S49.   Tiling t4049 vertex types

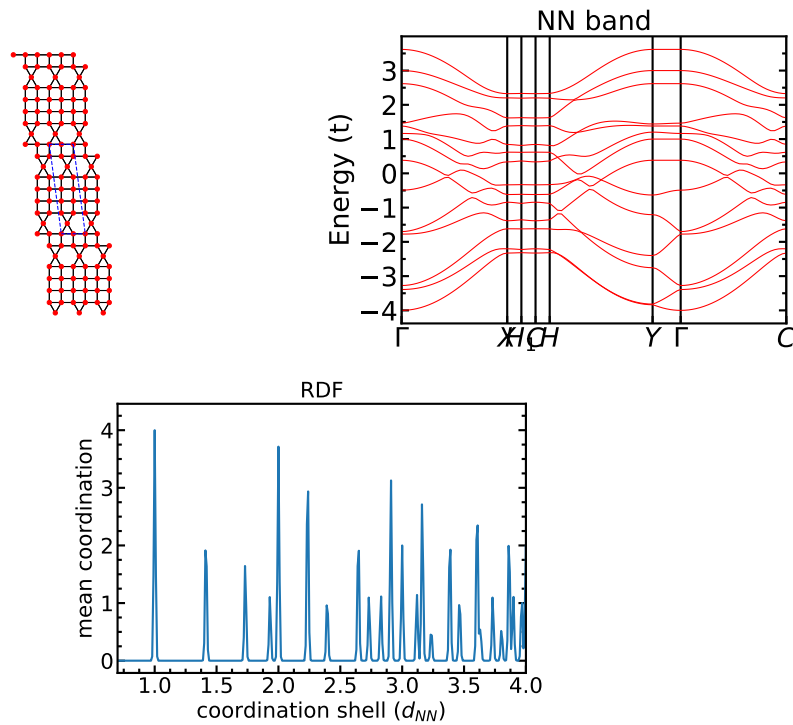| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S49.   t4049 lattice framework, nearest neighbors band structure and radial distribution function.

t4050

Tiling reference number t4050 with space-group $'Pmmm'$ (47) and 12 sites in the unit cell, with vertex type indicated in Tab. S50. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S50.

TABLE S50.   Tiling t4050 vertex types

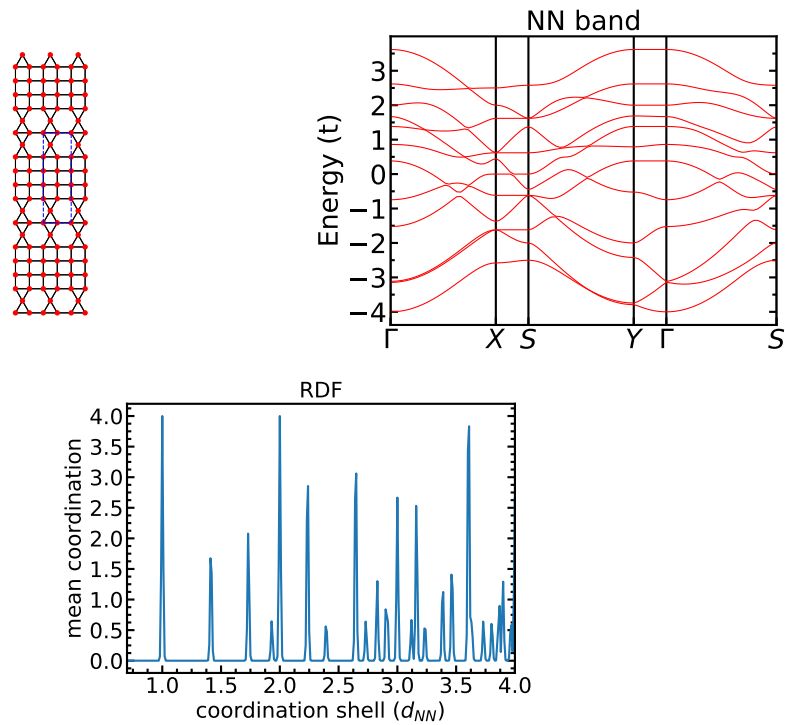| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	2	0	0	0	0	0	4	2

FIG. S50.   t4050 lattice framework, nearest neighbors band structure and radial distribution function.

51

t4051

Tiling reference number t4051 with space-group $'Amm2'$ (38) and 12 sites in the unit cell, with vertex type indicated in Tab. S51. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S51.

TABLE S51. Tiling t4051 vertex types

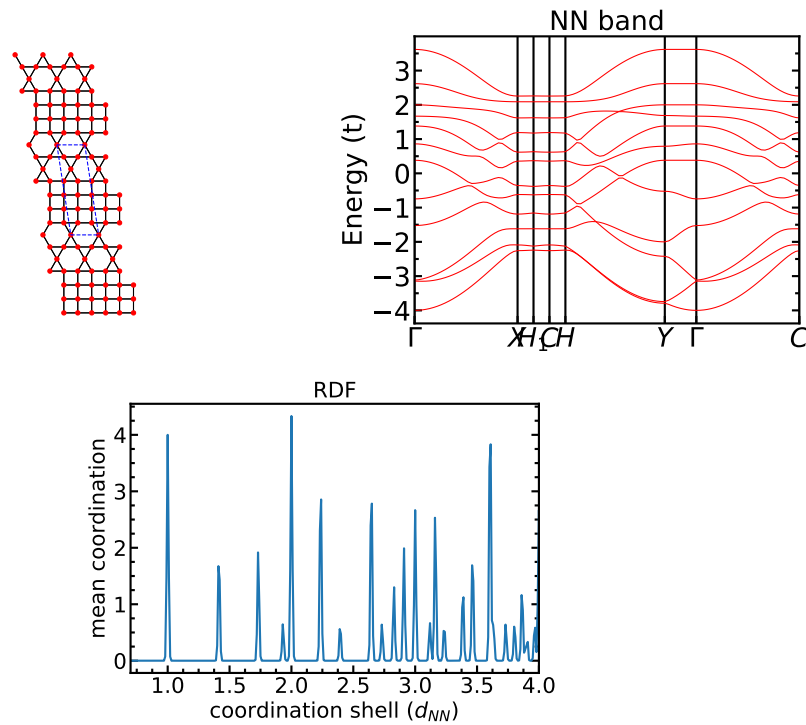| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	4	0	0	0	0	0	4	0

FIG. S51.   t4051 lattice framework, nearest neighbors band structure and radial distribution function.

t4052

Tiling reference number t4052 with space-group $'Pmm2'$ (25) and 7 sites in the unit cell, with vertex type indicated in Tab. S52. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S52.

TABLE S52.   Tiling t4052 vertex types

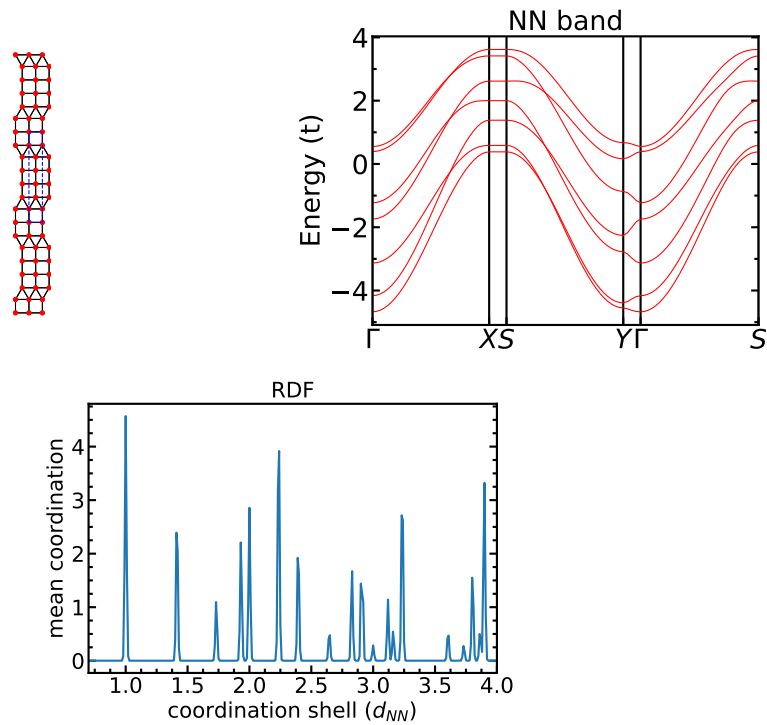| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	3	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S52.   t4052 lattice framework, nearest neighbors band structure and radial distribution function.

53

t4053

Tiling reference number t4053 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S53. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S53.

TABLE S53. Tiling t4053 vertex types

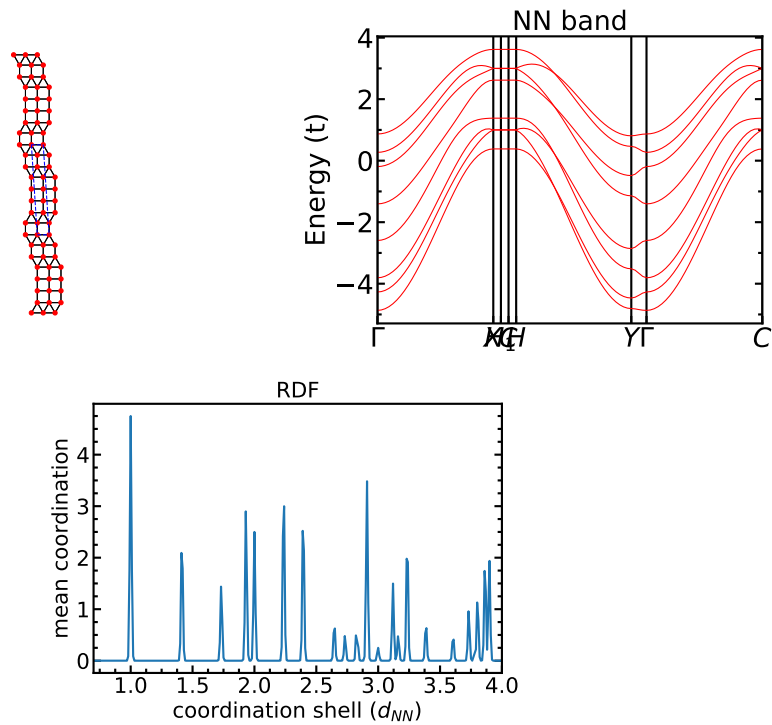| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	0	0	0	6	0	0	0	0

FIG. S53.   t4053 lattice framework, nearest neighbors band structure and radial distribution function.

t4054

Tiling reference number t4054 with space-group $'Pmmm'$ (47) and 8 sites in the unit cell, with vertex type indicated in Tab. S54. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S54.

TABLE S54.   Tiling t4054 vertex types

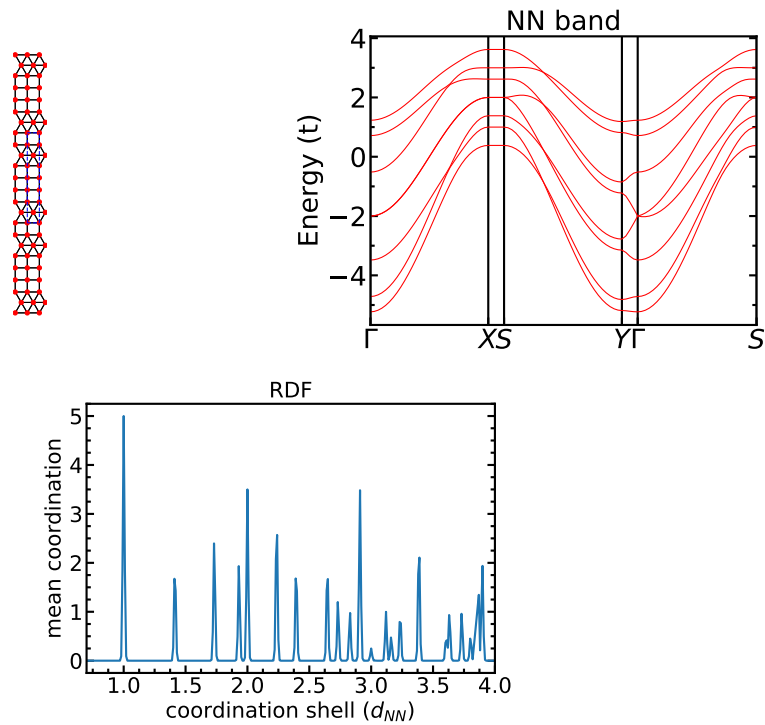| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	2	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S54.   t4054 lattice framework, nearest neighbors band structure and radial distribution function.

t4055

Tiling reference number t4055 with space-group $'Pmm2'$ (25) and 7 sites in the unit cell, with vertex type indicated in Tab. S55. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S55.

TABLE S55.   Tiling t4055 vertex types

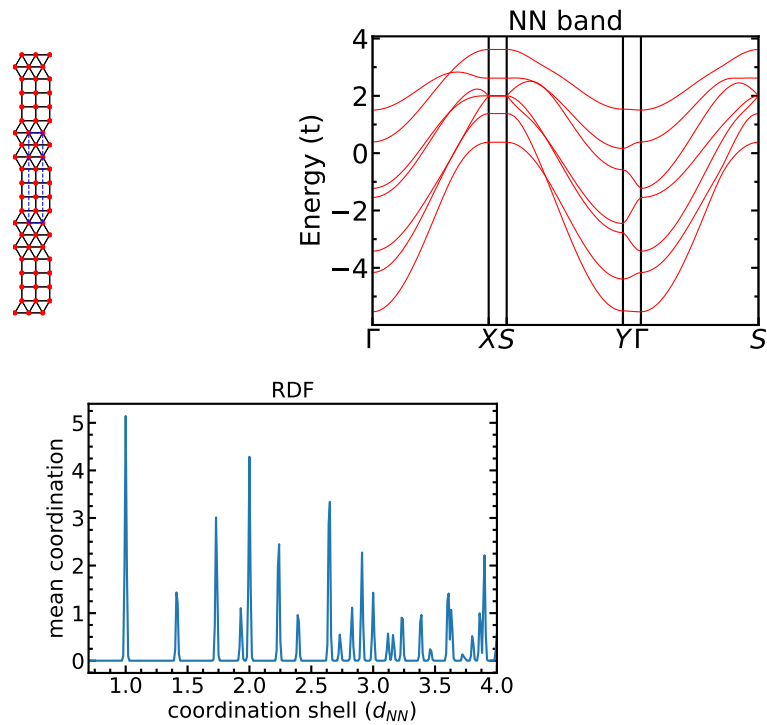| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	2	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S55.   t4055 lattice framework, nearest neighbors band structure and radial distribution function.

t4056

Tiling reference number t4056 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S56. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S56.

TABLE S56.   Tiling t4056 vertex types

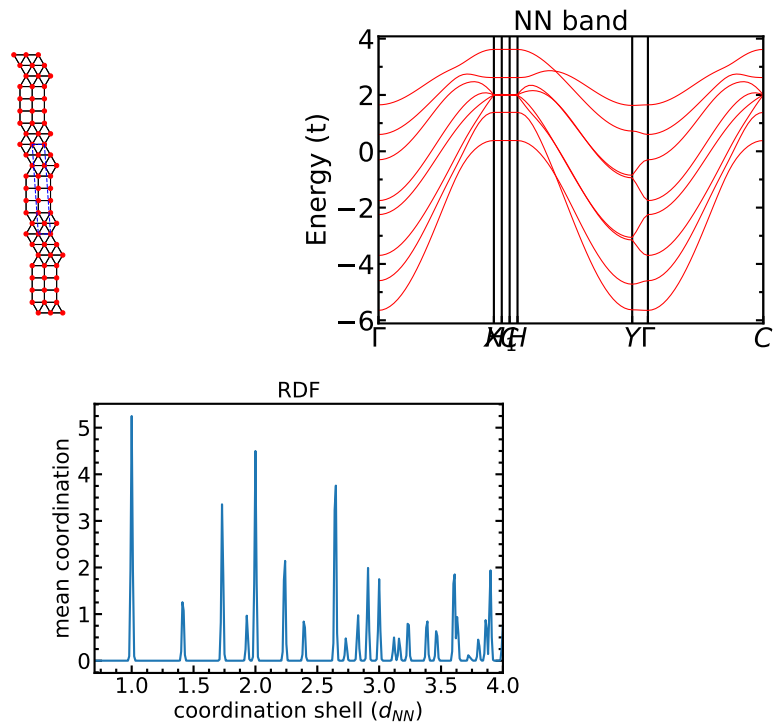| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
4	2	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S56.   t4056 lattice framework, nearest neighbors band structure and radial distribution function.

t4057

Tiling reference number t4057 with space-group $'P4/m'$ (83) and 16 sites in the unit cell, with vertex type indicated in Tab. S57. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S57.

TABLE S57.   Tiling t4057 vertex types

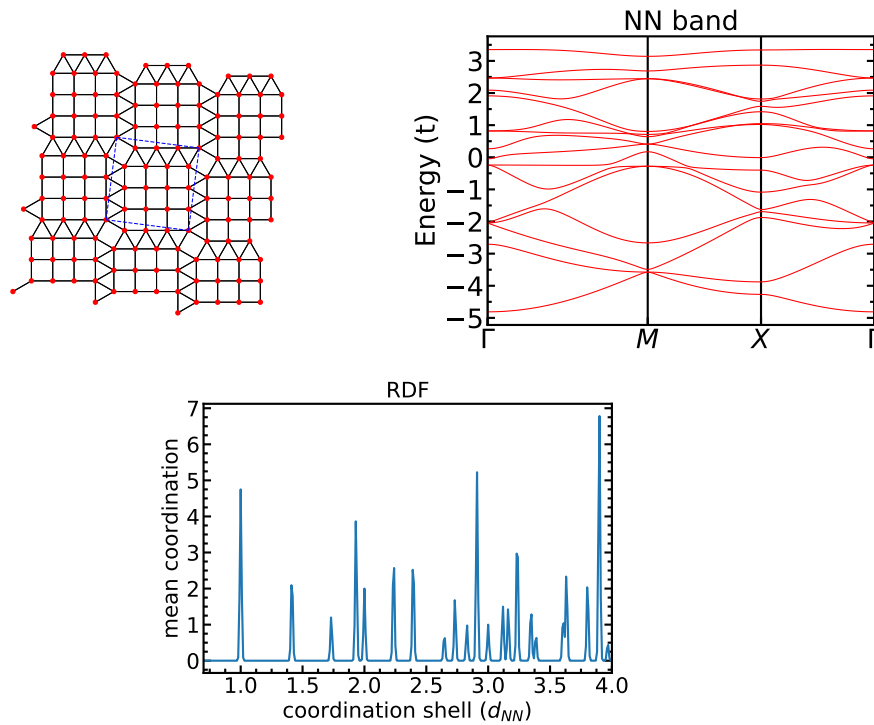| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	0	0	4	8	0	0	0	0

FIG. S57.   t4057 lattice framework, nearest neighbors band structure and radial distribution function.

t4058

Tiling reference number t4058 with space-group $'Cmmm'$ (65) and 7 sites in the unit cell, with vertex type indicated in Tab. S58. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S58.

TABLE S58.   Tiling t4058 vertex types

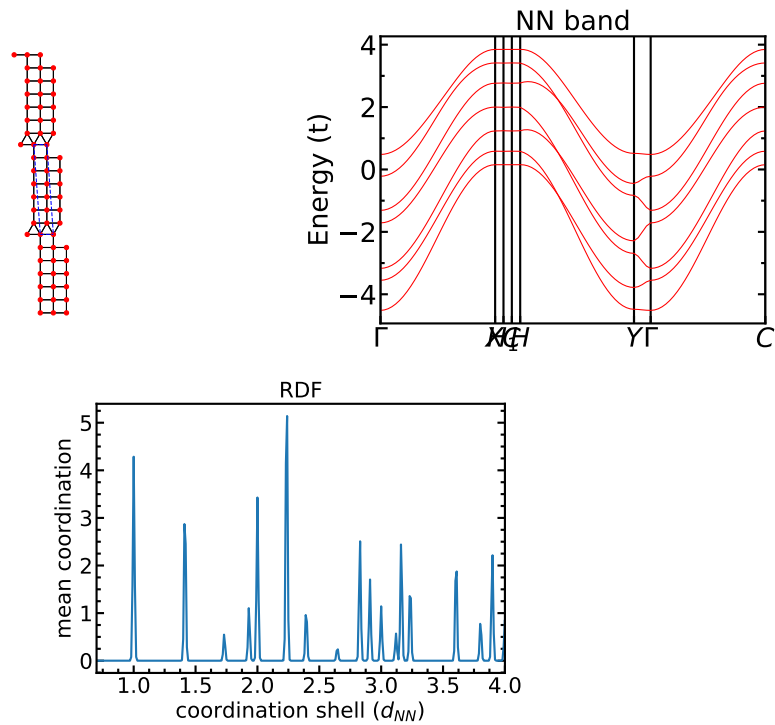| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	5	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S58.   t4058 lattice framework, nearest neighbors band structure and radial distribution function.

t4059

Tiling reference number t4059 with space-group $'Amm2'$ (38) and 11 sites in the unit cell, with vertex type indicated in Tab. S59. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S59.

TABLE S59. Tiling t4059 vertex types

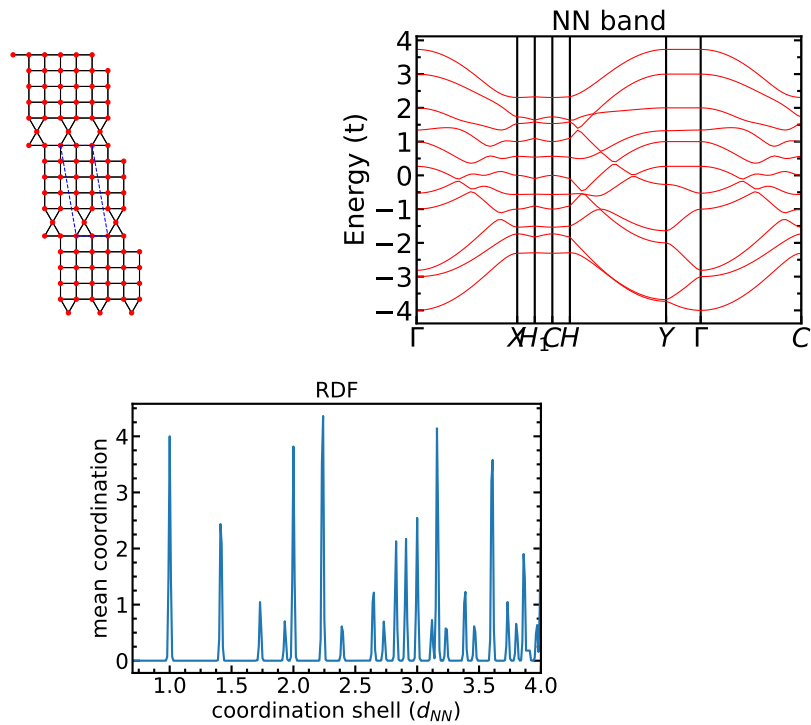| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	6	0	0	0	0	0	1	0	0	0	0	0	4	0

FIG. S59. t4059 lattice framework, nearest neighbors band structure and radial distribution function.

60

t4060

Tiling reference number t4060 with space-group $'Pmm2'$ (25) and 11 sites in the unit cell, with vertex type indicated in Tab. S60. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S60.

TABLE S60.   Tiling t4060 vertex types

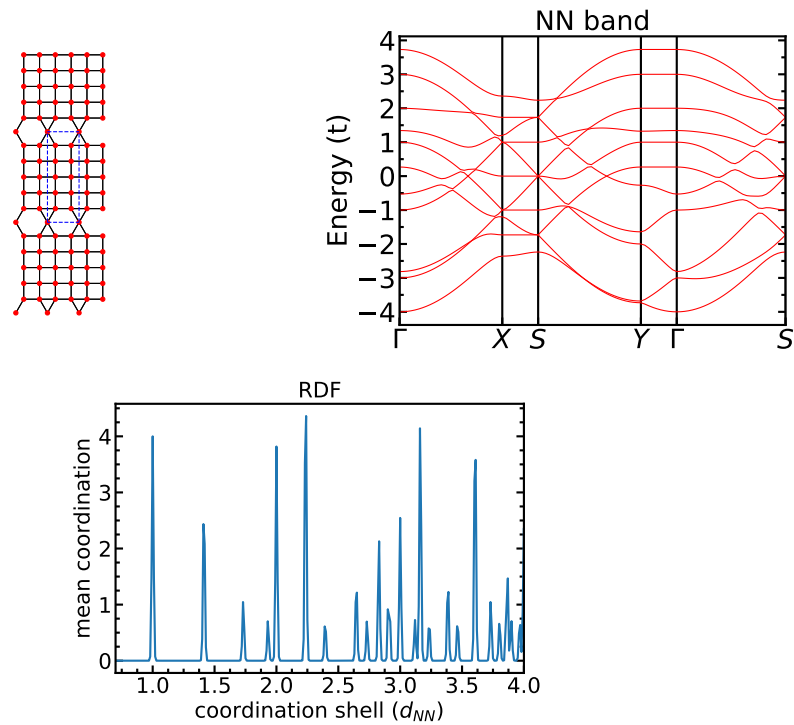| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	6	0	0	0	0	0	1	0	0	0	0	0	4	0

FIG. S60.   t4060 lattice framework, nearest neighbors band structure and radial distribution function.

61

t4061

Tiling reference number t4061 with space-group $'Pmmm'$ (47) and 7 sites in the unit cell, with vertex type indicated in Tab. S61. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S61.

TABLE S61.   Tiling t4061 vertex types

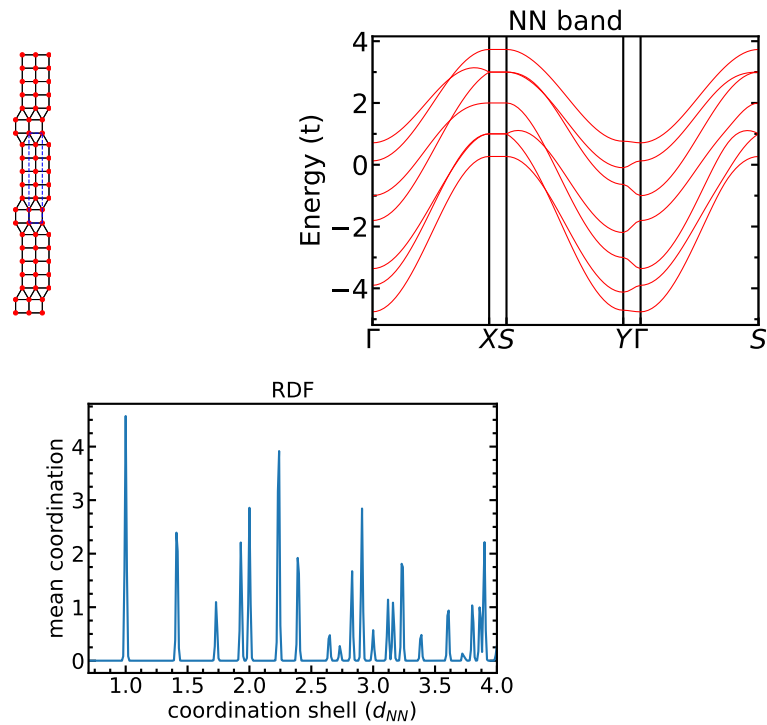| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	3	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S61.   t4061 lattice framework, nearest neighbors band structure and radial distribution function.

t4062

Tiling reference number t4062 with space-group $'Pmm2'$ (25) and 6 sites in the unit cell, with vertex type indicated in Tab. S62. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S62.

TABLE S62. Tiling t4062 vertex types

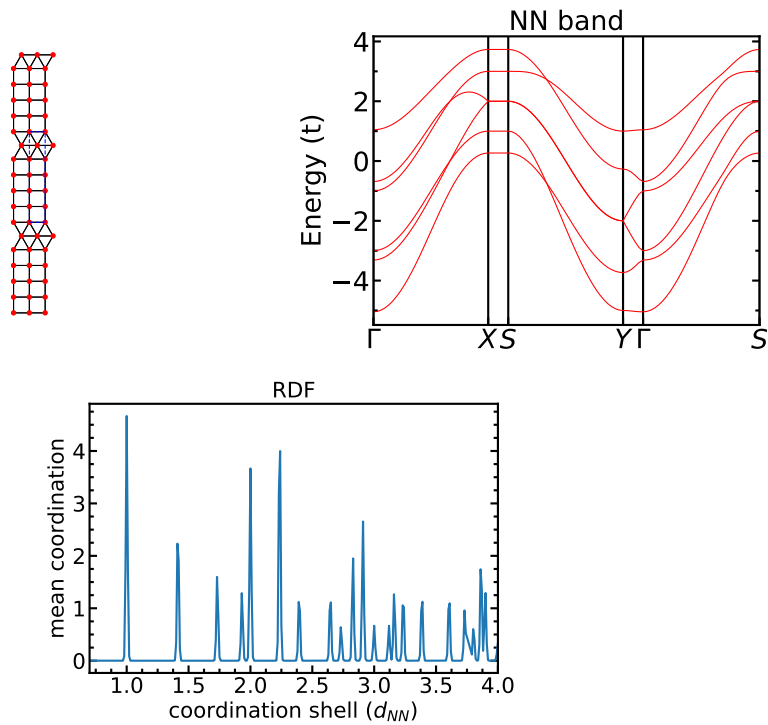| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	3	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S62.   t4062 lattice framework, nearest neighbors band structure and radial distribution function.

t4063

Tiling reference number t4063 with space-group $'Cmmm'$ (65) and 7 sites in the unit cell, with vertex type indicated in Tab. S63. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S63.

TABLE S63. Tiling t4063 vertex types

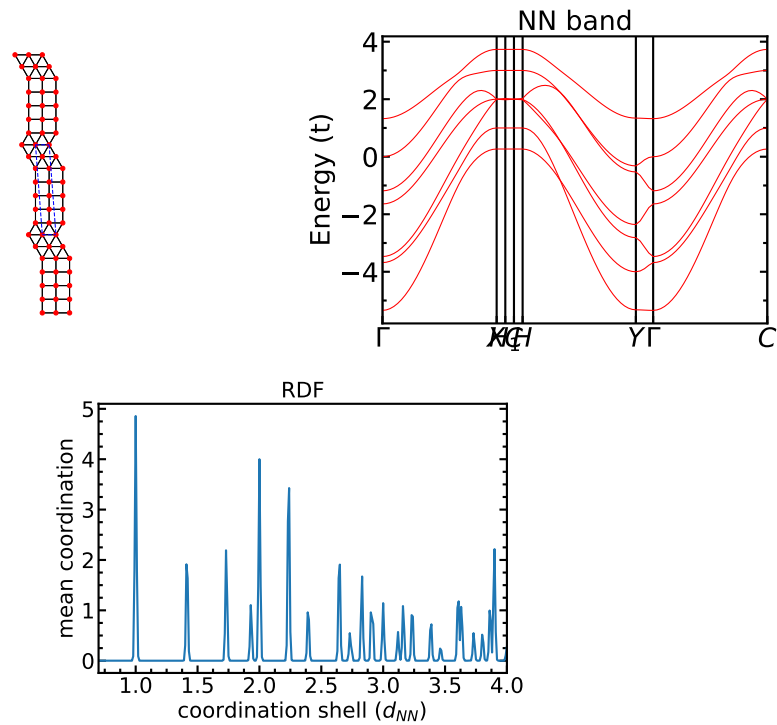| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	3	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S63.   t4063 lattice framework, nearest neighbors band structure and radial distribution function.

t4064

Tiling reference number t4064 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S64. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S64.

TABLE S64.   Tiling t4064 vertex types

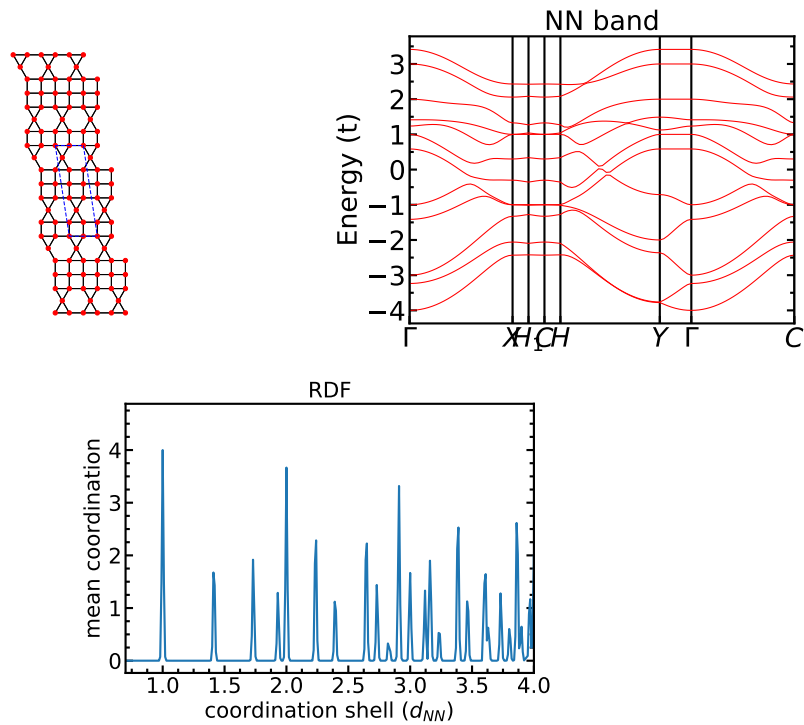| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S64.   t4064 lattice framework, nearest neighbors band structure and radial distribution function.

t4065

Tiling reference number t4065 with space-group $'Pmma'$ (51) and 12 sites in the unit cell, with vertex type indicated in Tab. S65. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S65.

TABLE S65.   Tiling t4065 vertex types

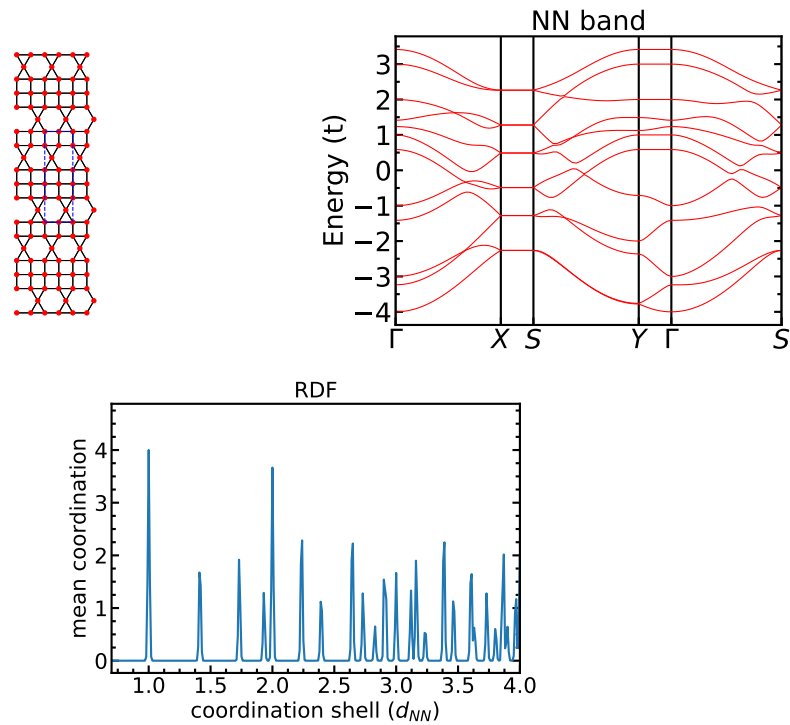| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S65.   t4065 lattice framework, nearest neighbors band structure and radial distribution function.

t4066

Tiling reference number t4066 with space-group $'Cmmm'$ (65) and 10 sites in the unit cell, with vertex type indicated in Tab. S66. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S66.

TABLE S66. Tiling t4066 vertex types

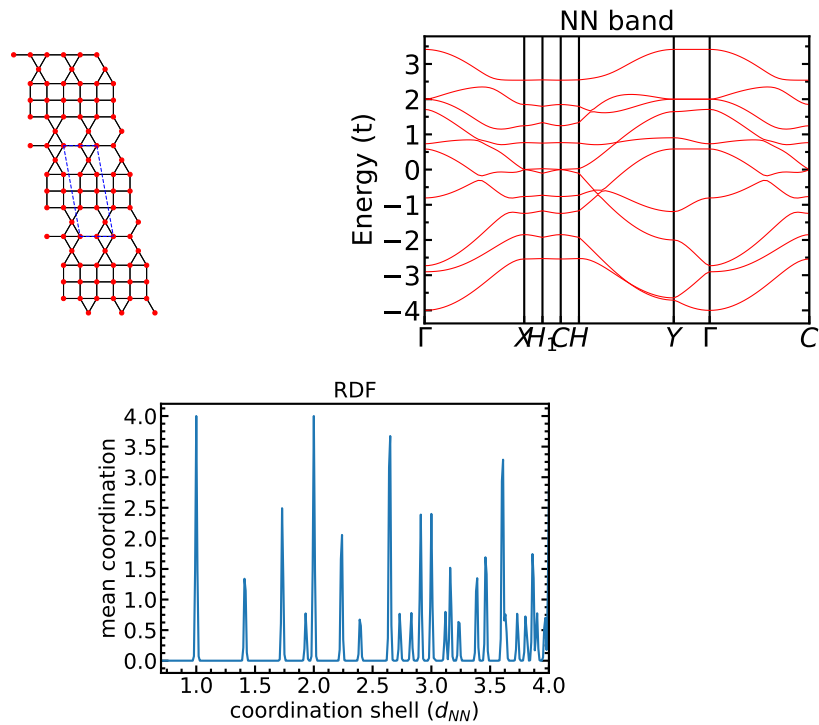| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	2	0	0	0	0	0	4	2

FIG. S66. t4066 lattice framework, nearest neighbors band structure and radial distribution function.

t4067

Tiling reference number t4067 with space-group $'Pmma'$ (51) and 10 sites in the unit cell, with vertex type indicated in Tab. S67. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S67.

TABLE S67.   Tiling t4067 vertex types

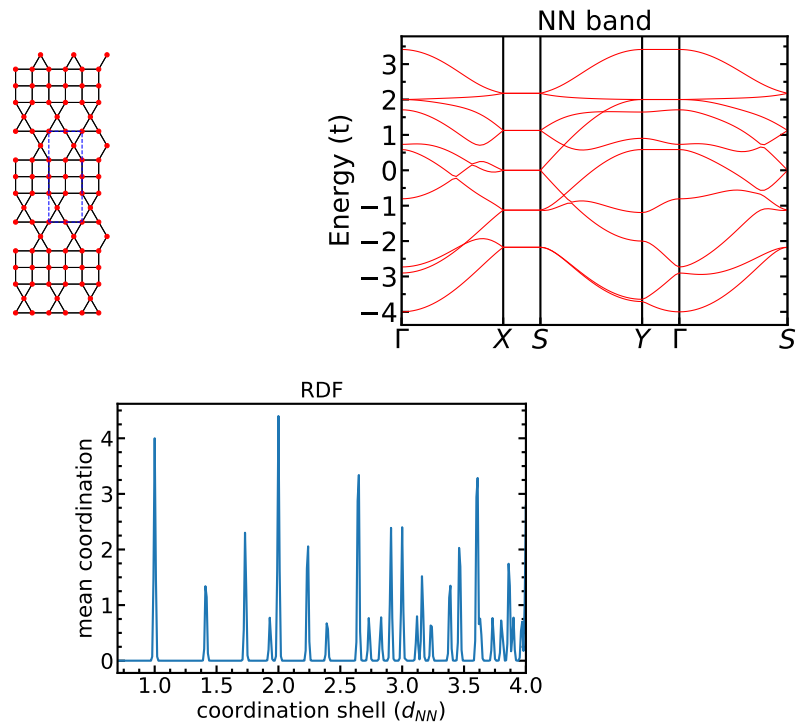| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	4	0	0	0	0	0	4	0

FIG. S67.   t4067 lattice framework, nearest neighbors band structure and radial distribution function.

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t4068

Tiling reference number t4068 with space-group $'Pmm2'$ (25) and 12 sites in the unit cell, with vertex type indicated in Tab. S68. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S68.

TABLE S68.   Tiling t4068 vertex types

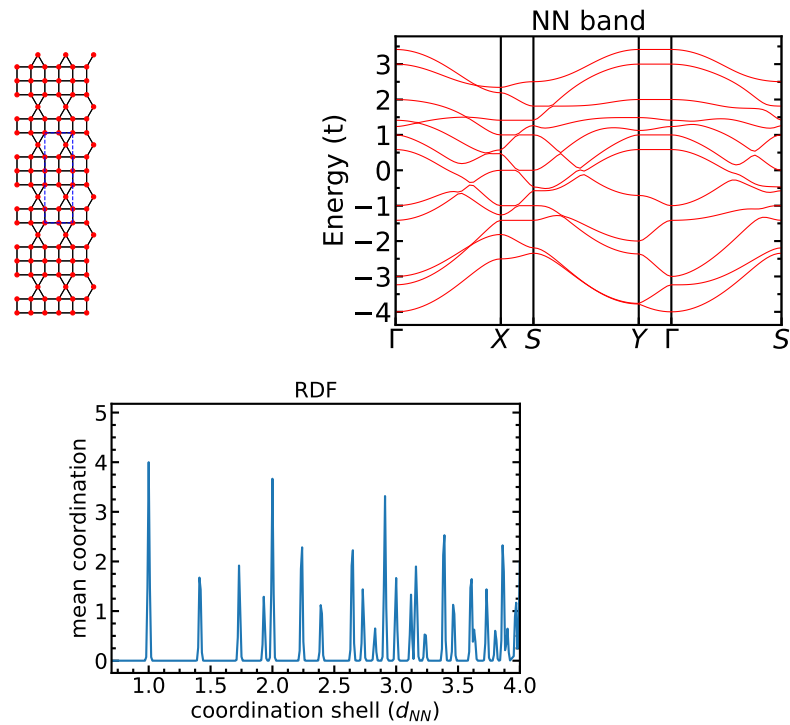| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S68.   t4068 lattice framework, nearest neighbors band structure and radial distribution function.

t4069

Tiling reference number t4069 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S69. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S69.

TABLE S69.   Tiling t4069 vertex types

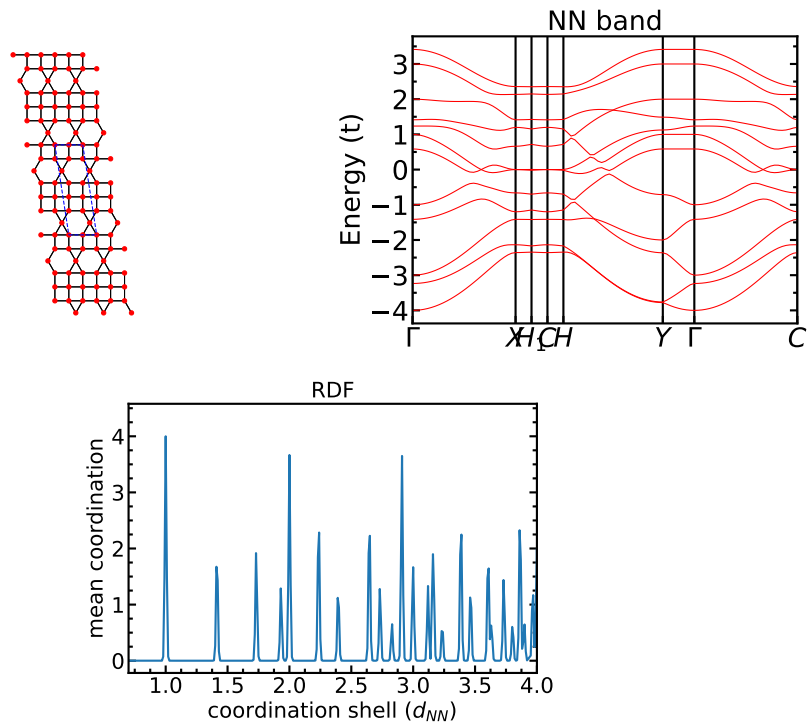| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	2	0	0	0	0	0	8	0

FIG. S69.   t4069 lattice framework, nearest neighbors band structure and radial distribution function.

t4070

Tiling reference number t4070 with space-group $'Pmmm'$ (47) and 10 sites in the unit cell, with vertex type indicated in Tab. S70. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S70.

TABLE S70.   Tiling t4070 vertex types

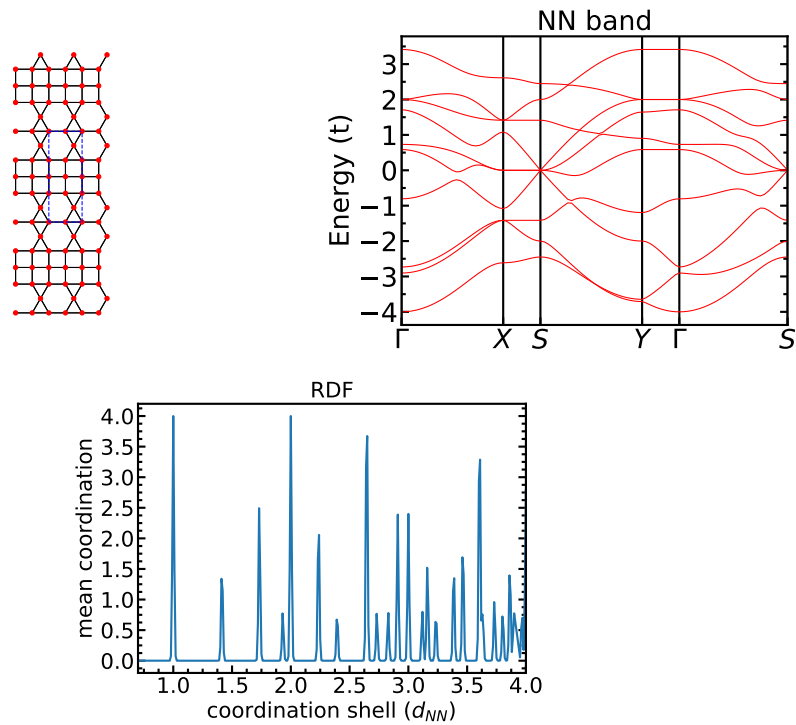| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	2	0	0	0	0	0	4	2

FIG. S70.   t4070 lattice framework, nearest neighbors band structure and radial distribution function.

t4071

Tiling reference number t4071 with space-group $'Cmmm'$ (65) and 10 sites in the unit cell, with vertex type indicated in Tab. S71. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S71.

TABLE S71.   Tiling t4071 vertex types

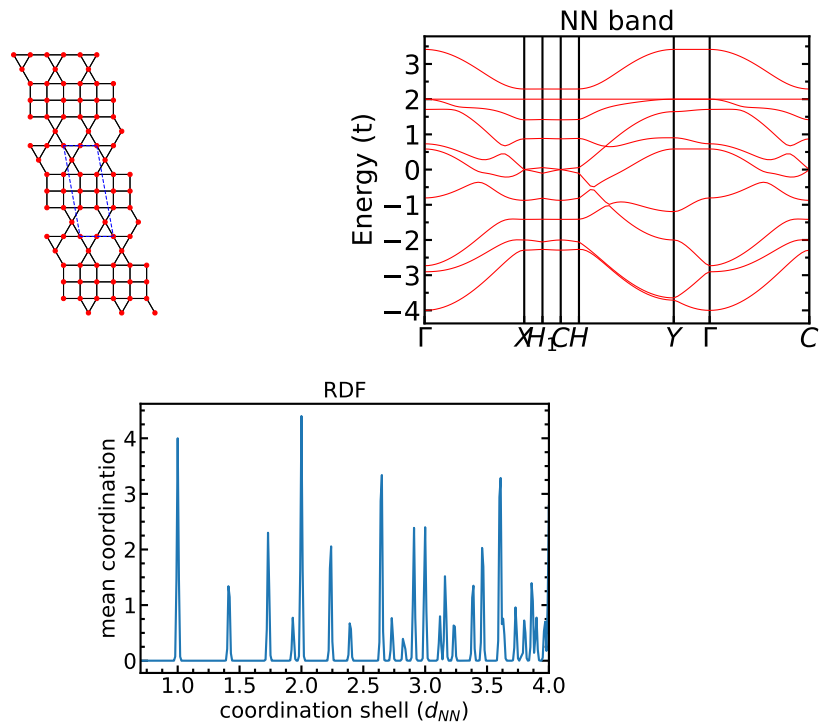| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	4	0	0	0	0	0	4	0

FIG. S71.   t4071 lattice framework, nearest neighbors band structure and radial distribution function.

t4072

Tiling reference number t4072 with space-group $'Cmmm'$ (65) and 7 sites in the unit cell, with vertex type indicated in Tab. S72. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S72.

TABLE S72.   Tiling t4072 vertex types

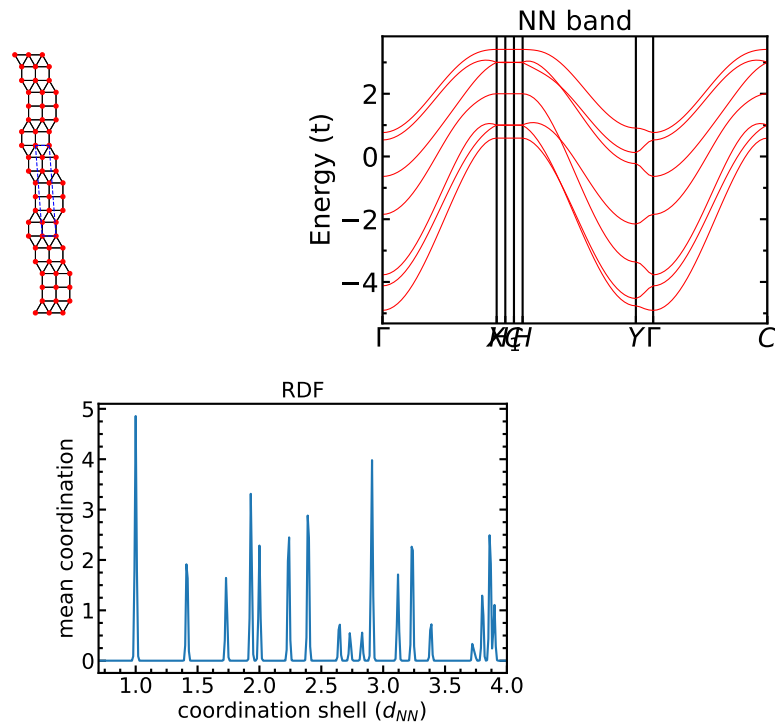| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	1	0	0	0	0	0	0	0	0	6	0	0	0	0

FIG. S72.   t4072 lattice framework, nearest neighbors band structure and radial distribution function.

t4073

Tiling reference number t4073 with space-group $'Pmmm'$ (47) and 7 sites in the unit cell, with vertex type indicated in Tab. S73. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S73.

TABLE S73. Tiling t4073 vertex types

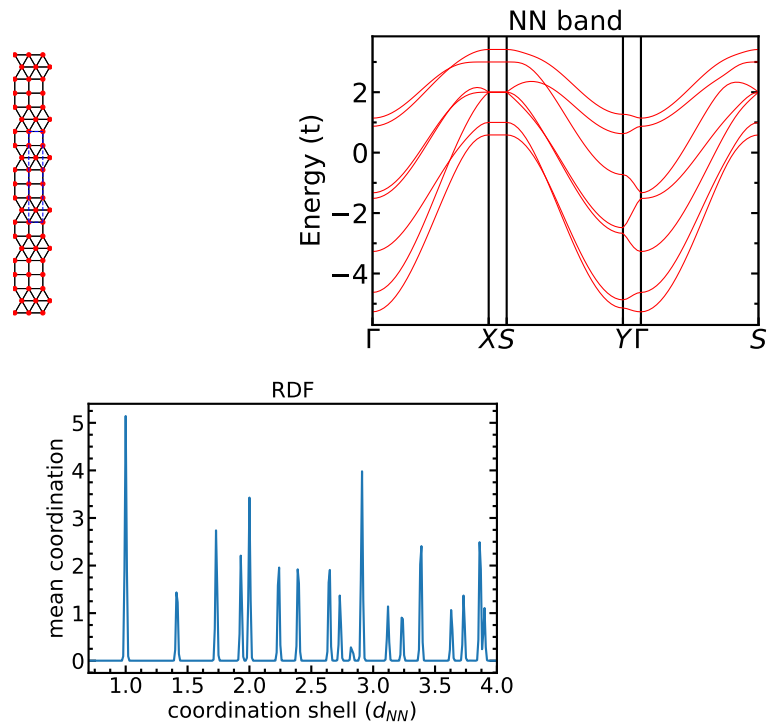| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	1	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S73.   t4073 lattice framework, nearest neighbors band structure and radial distribution function.

t4074

Tiling reference number t4074 with space-group $'Pmmm'$ (47) and 6 sites in the unit cell, with vertex type indicated in Tab. S74. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S74.

TABLE S74.   Tiling t4074 vertex types

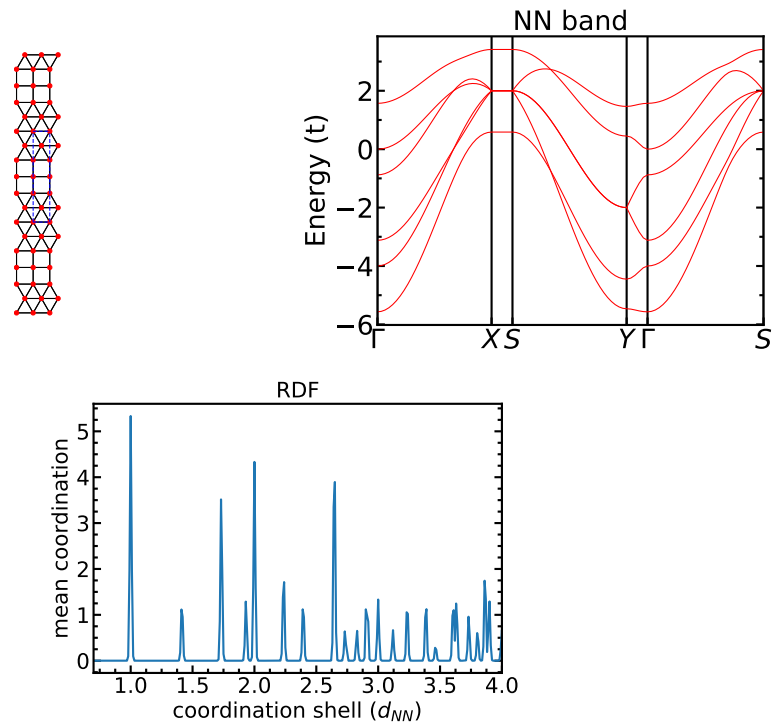| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	1	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S74.   t4074 lattice framework, nearest neighbors band structure and radial distribution function.

t4075

Tiling reference number t4075 with space-group $'Cmmm'$ (65) and 7 sites in the unit cell, with vertex type indicated in Tab. S75. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S75.

TABLE S75. Tiling t4075 vertex types

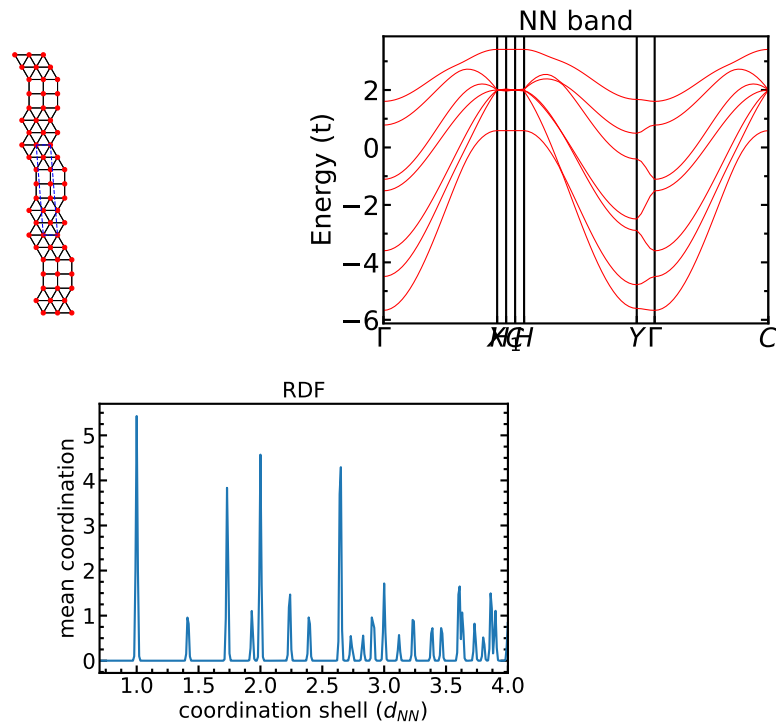| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
4	1	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S75. t4075 lattice framework, nearest neighbors band structure and radial distribution function.

t4076

Tiling reference number t4076 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S76. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S76.

TABLE S76.   Tiling t4076 vertex types

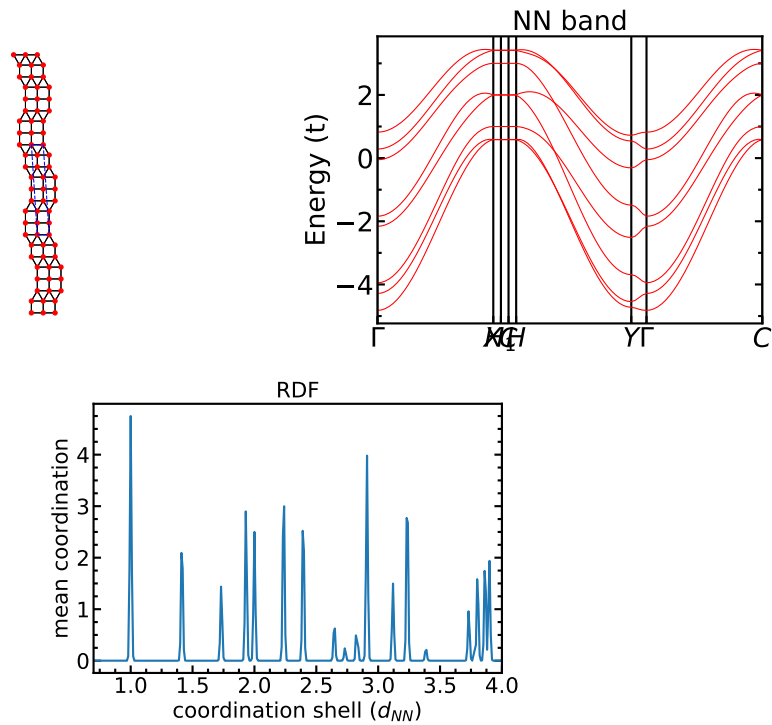| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	0	0	0	0	6	0	0	0	0

FIG. S76.   t4076 lattice framework, nearest neighbors band structure and radial distribution function.

t4077

Tiling reference number t4077 with space-group $'Amm2'$ (38) and 7 sites in the unit cell, with vertex type indicated in Tab. S77. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S77.

TABLE S77.   Tiling t4077 vertex types

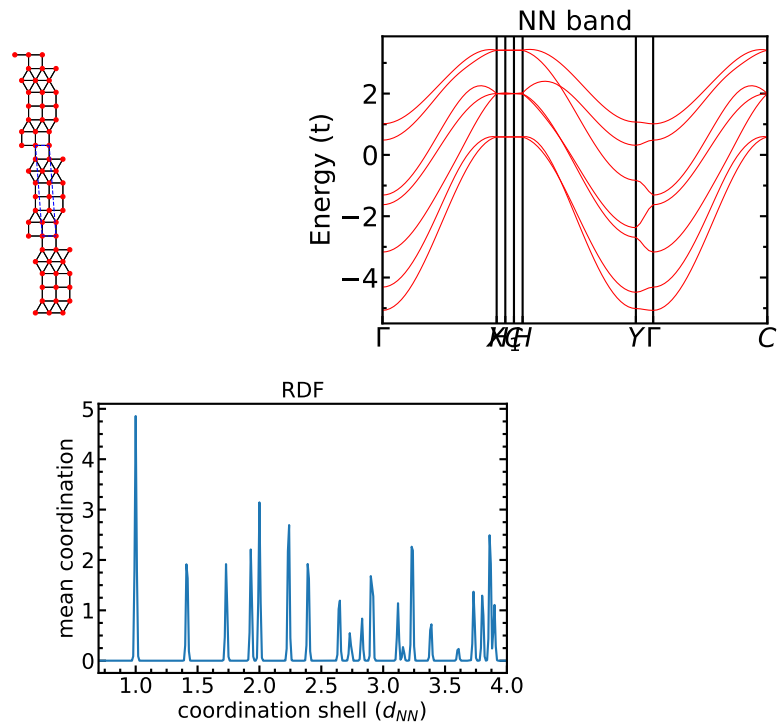| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	2	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S77.   t4077 lattice framework, nearest neighbors band structure and radial distribution function.

t4078

Tiling reference number t4078 with space-group $'Pmma'$ (51) and 8 sites in the unit cell, with vertex type indicated in Tab. S78. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S78.

TABLE S78. Tiling t4078 vertex types

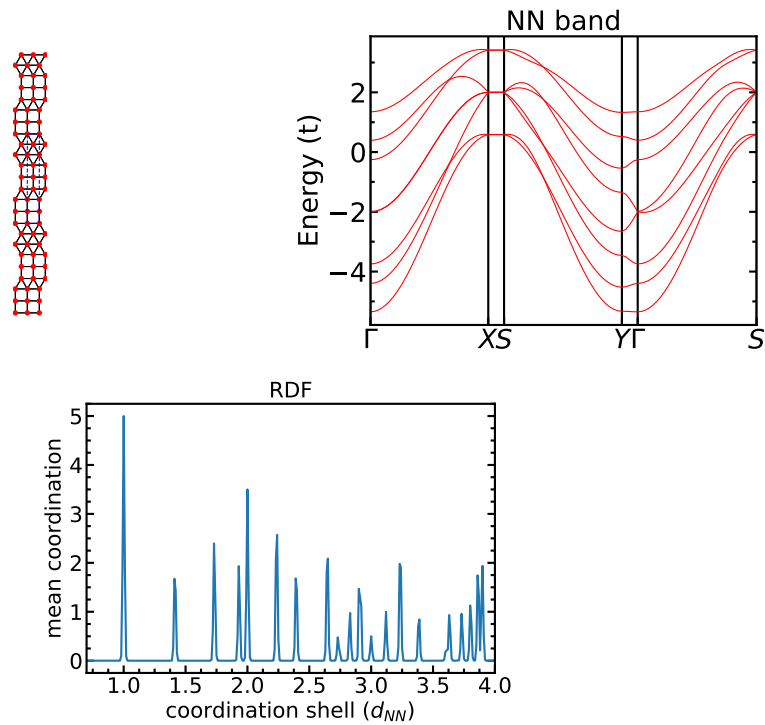| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	2	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S78.   t4078 lattice framework, nearest neighbors band structure and radial distribution function.

t4079

Tiling reference number t4079 with space-group $'P4/mbm'$ (127) and 24 sites in the unit cell, with vertex type indicated in Tab. S79. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S79.

TABLE S79.   Tiling t4079 vertex types

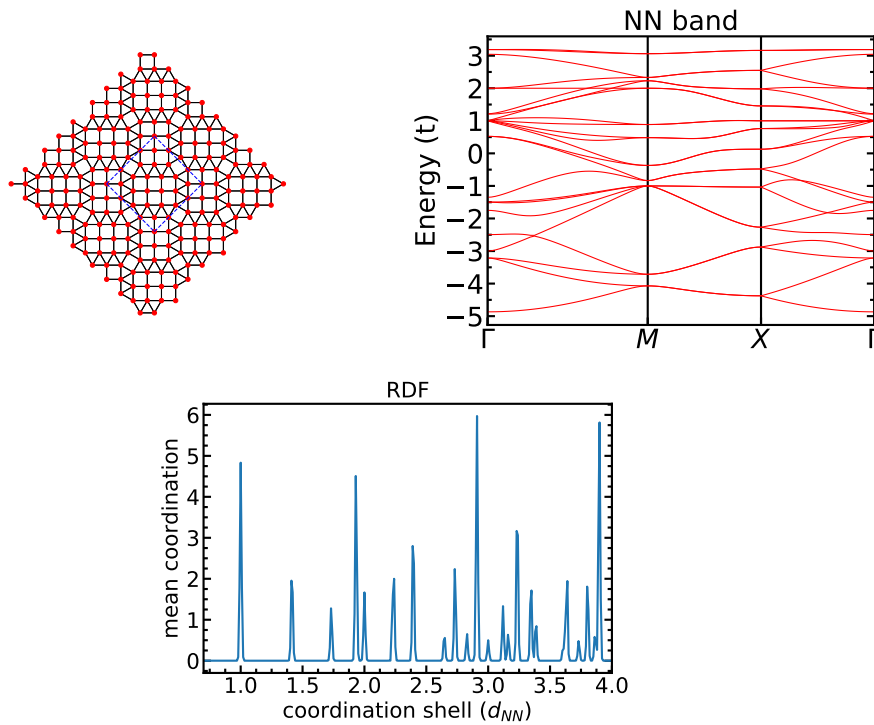| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	4	0	0	0	0	0	0	0	8	12	0	0	0	0

FIG. S79.   t4079 lattice framework, nearest neighbors band structure and radial distribution function.

t4080

Tiling reference number t4080 with space-group $'Pm'$ (6) and 26 sites in the unit cell, with vertex type indicated in Tab. S80. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S80.

TABLE S80. Tiling t4080 vertex types

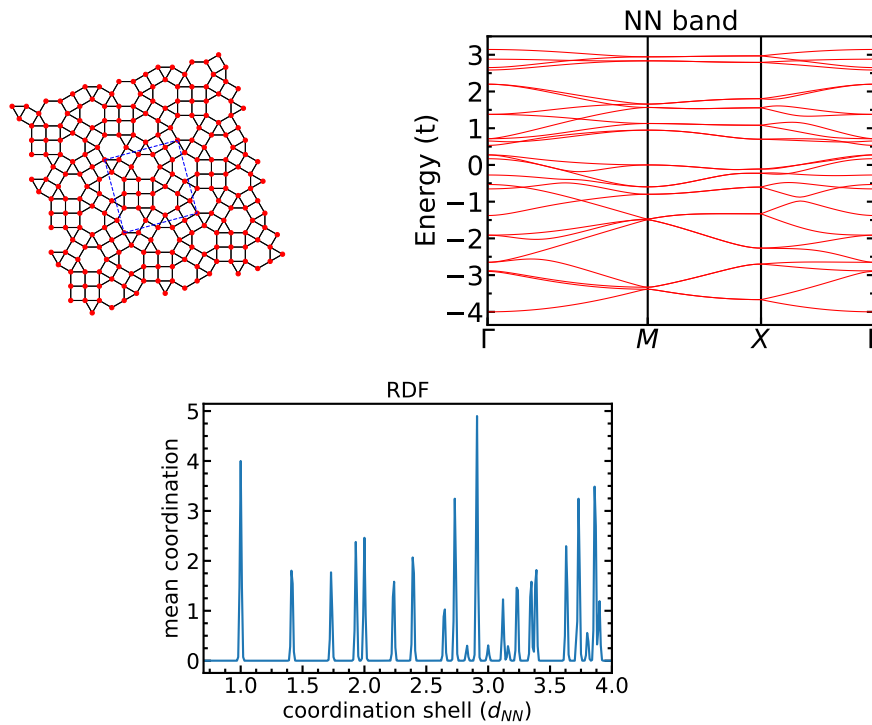| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	2	0	0	0	0	8	0	0	0	0	0	0	16	0

FIG. S80. t4080 lattice framework, nearest neighbors band structure and radial distribution function.

t4081

Tiling reference number t4081 with space-group $'Amm2'$ (38) and 17 sites in the unit cell, with vertex type indicated in Tab. S81. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S81.

TABLE S81. Tiling t4081 vertex types

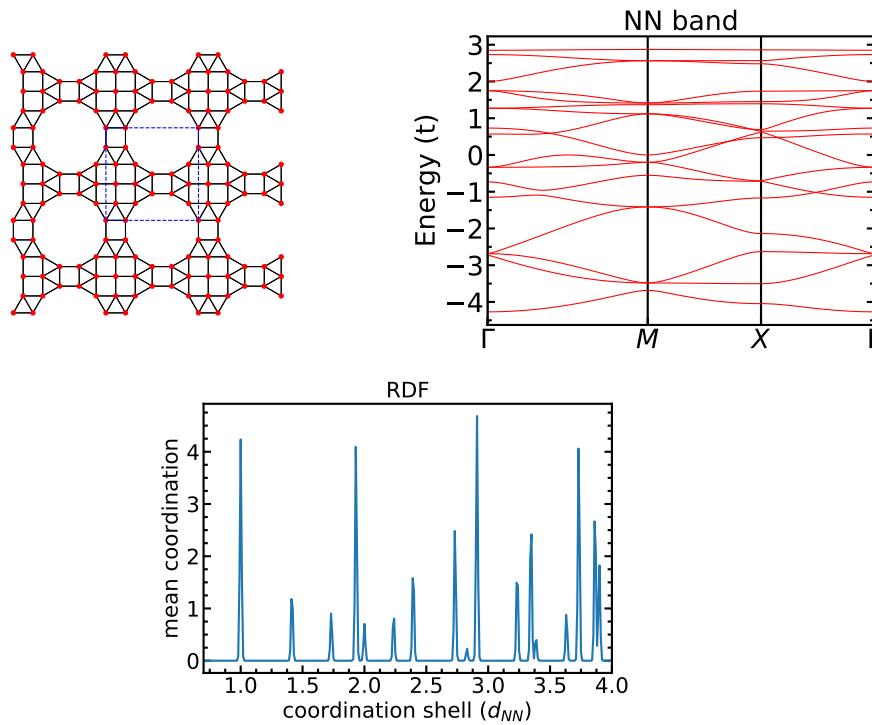| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	1	0	0	0	0	0	0	0	0	4	8	4	0	0

FIG. S81.   t4081 lattice framework, nearest neighbors band structure and radial distribution function.

t4082

Tiling reference number t4082 with space-group $'Amm2'$ (38) and 16 sites in the unit cell, with vertex type indicated in Tab. S82. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S82.

TABLE S82.   Tiling t4082 vertex types

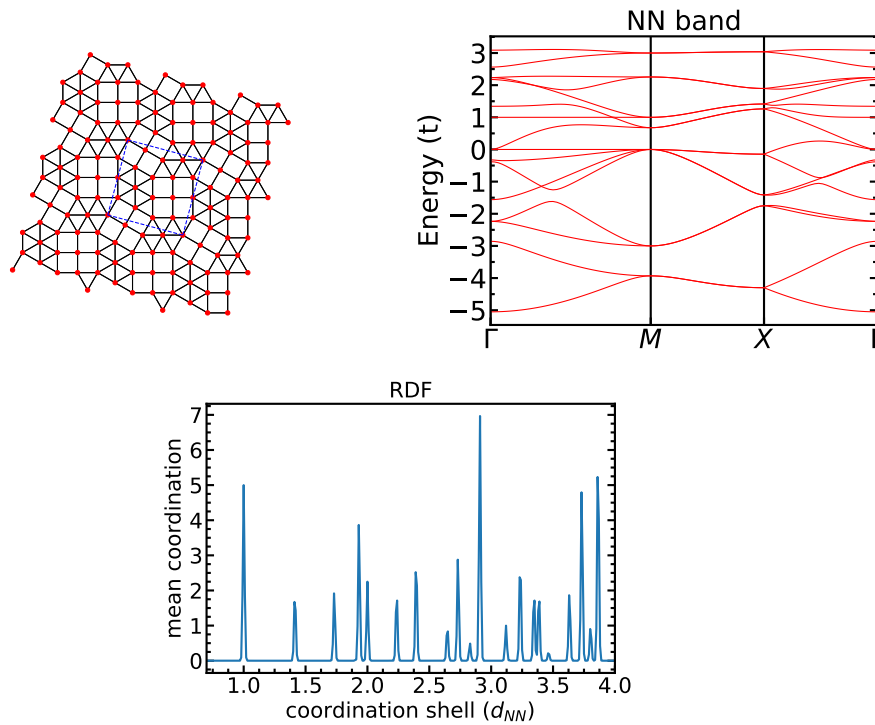| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	2	0	0	0	0	0	0	0	4	8	0	0	0	0

FIG. S82.   t4082 lattice framework, nearest neighbors band structure and radial distribution function.

t4083

Tiling reference number t4083 with space-group $'Amm2'$ (38) and 36 sites in the unit cell, with vertex type indicated in Tab. S83. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S83.

TABLE S83.   Tiling t4083 vertex types

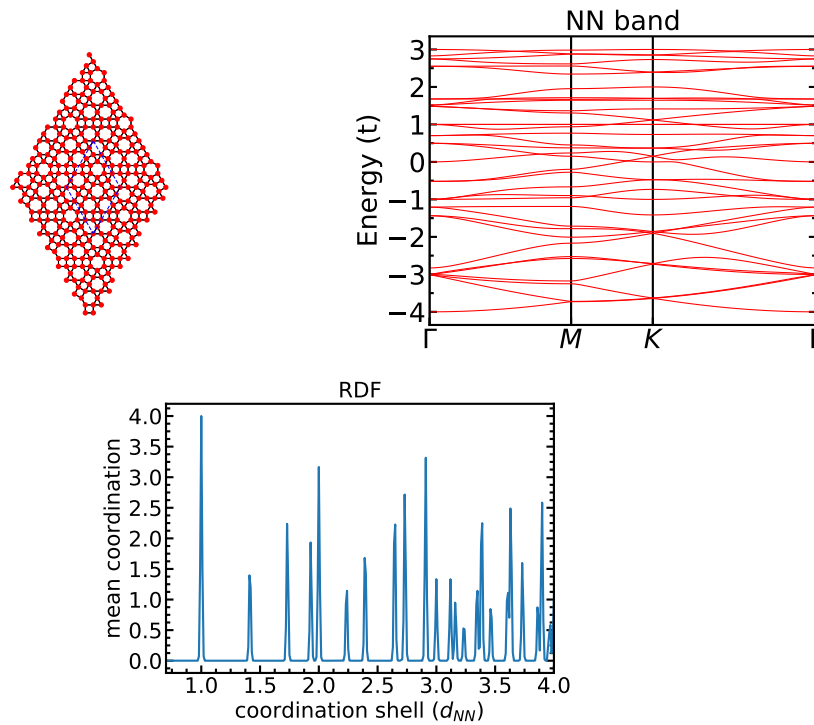| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	6	6	0	0	0	0	0	24	0

FIG. S83.   t4083 lattice framework, nearest neighbors band structure and radial distribution function.

84

t4084

Tiling reference number t4084 with space-group $'P-6m2'$ (187) and 25 sites in the unit cell, with vertex type indicated in Tab. S84. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S84.

TABLE S84.   Tiling t4084 vertex types

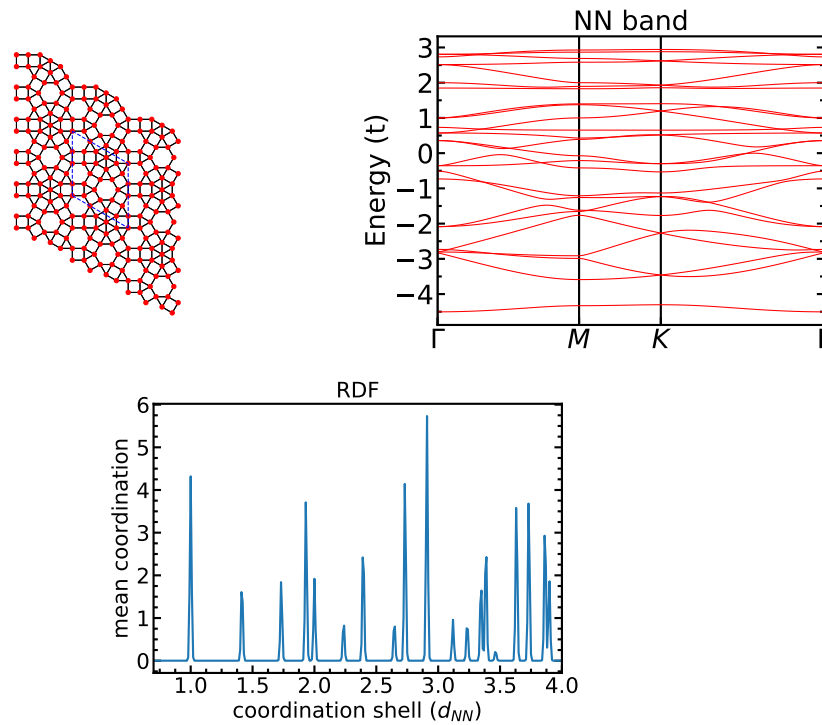| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	6	0	0	6	0	0	0	12	0

FIG. S84.   t4084 lattice framework, nearest neighbors band structure and radial distribution function.

t4085

Tiling reference number t4085 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S85. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S85.

TABLE S85.　Tiling t4085 vertex types

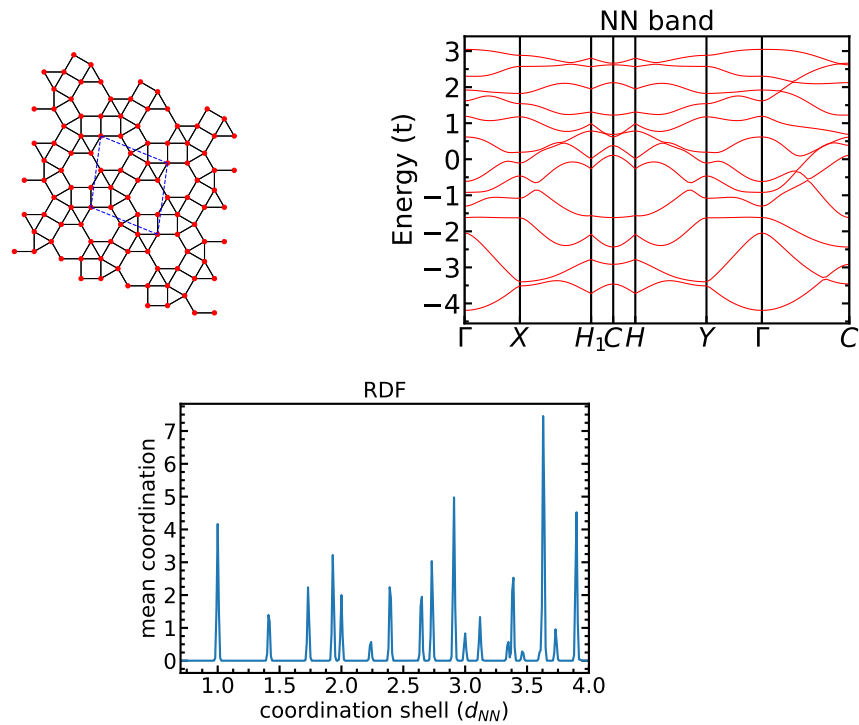| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	4	0	0	2	0	0	0	4	2

FIG. S85.　t4085 lattice framework, nearest neighbors band structure and radial distribution function.

t4086

Tiling reference number t4086 with space-group $'Cmmm'$ (65) and 11 sites in the unit cell, with vertex type indicated in Tab. S86. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S86.

TABLE S86. Tiling t4086 vertex types

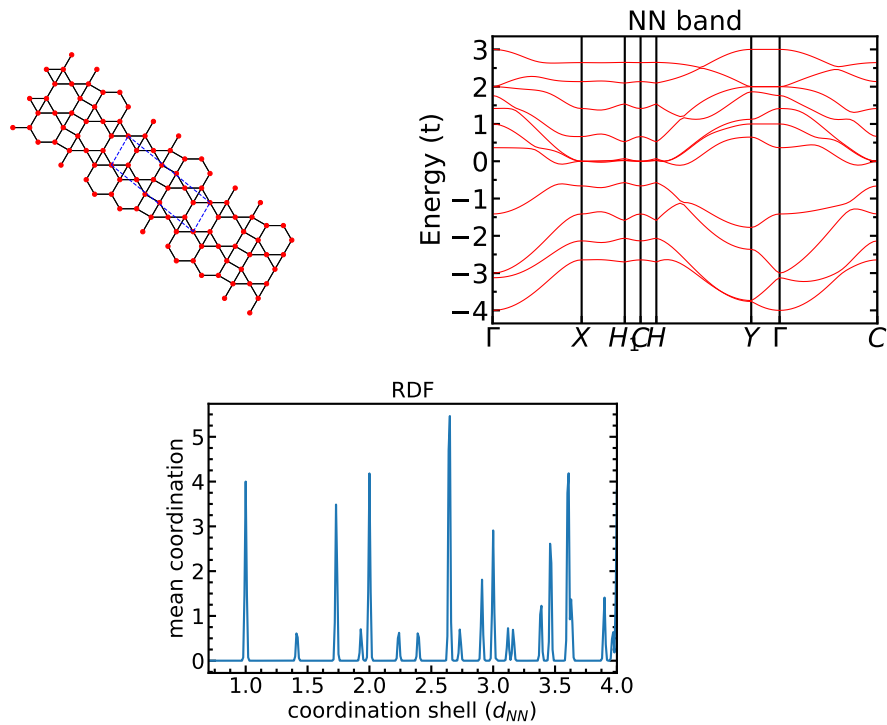| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	3	0	0	0	0	0	4	4

FIG. S86.   t4086 lattice framework, nearest neighbors band structure and radial distribution function.

t4087

Tiling reference number t4087 with space-group $'Cmmm'$ (65) and 11 sites in the unit cell, with vertex type indicated in Tab. S87. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S87.

TABLE S87.   Tiling t4087 vertex types

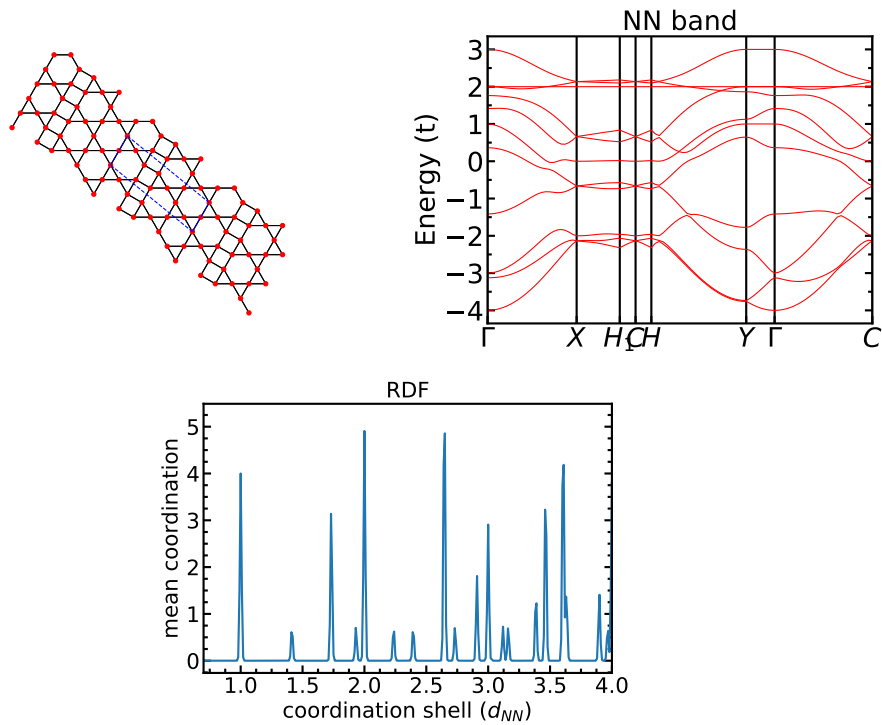| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	7	0	0	0	0	0	4	0

FIG. S87.   t4087 lattice framework, nearest neighbors band structure and radial distribution function.

t4088

Tiling reference number t4088 with space-group $'Pmma'$ (51) and 12 sites in the unit cell, with vertex type indicated in Tab. S88. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S88.

TABLE S88. Tiling t4088 vertex types

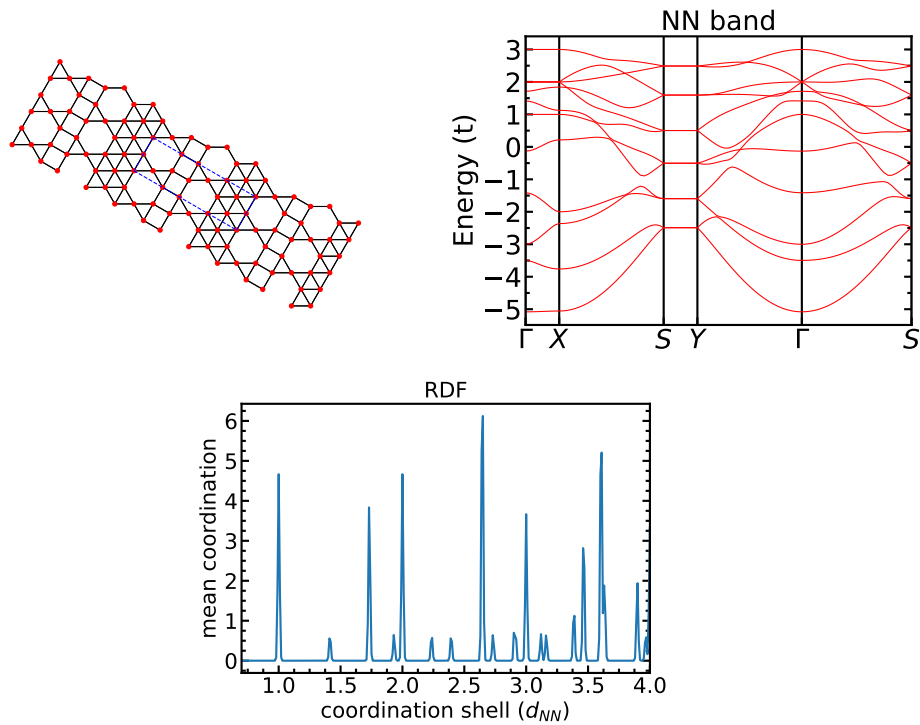| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	2	4	0	0	0	0	4	0

FIG. S88.   t4088 lattice framework, nearest neighbors band structure and radial distribution function.

t4089

Tiling reference number t4089 with space-group $'Pmmm'$ (47) and 11 sites in the unit cell, with vertex type indicated in Tab. S89. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S89.

TABLE S89.   Tiling t4089 vertex types

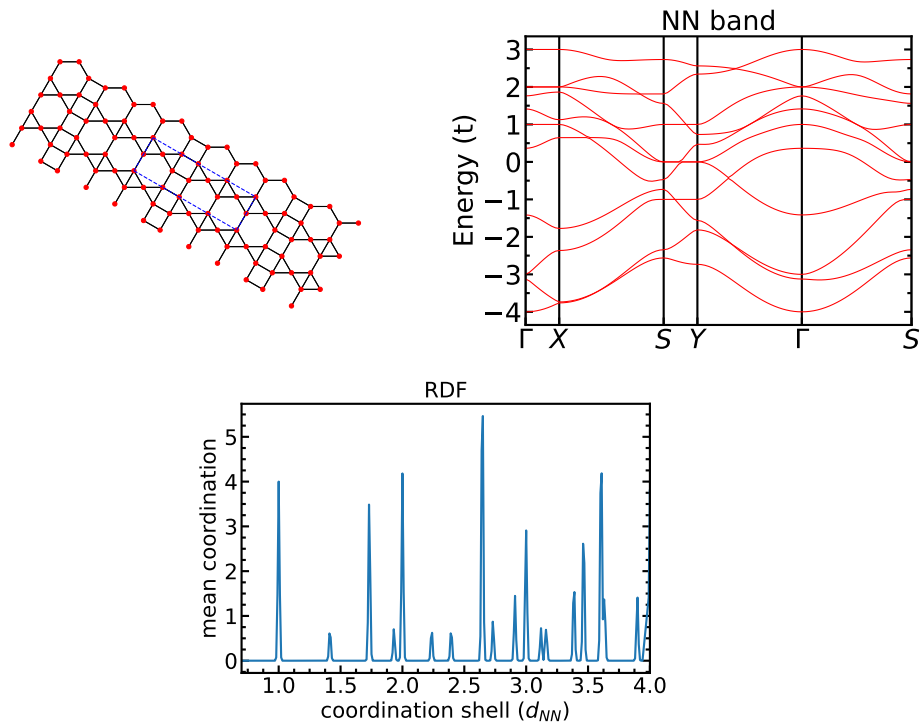| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	3	0	0	0	0	0	4	4

FIG. S89.   t4089 lattice framework, nearest neighbors band structure and radial distribution function.

t4090

Tiling reference number t4090 with space-group $'Pmmm'$ (47) and 11 sites in the unit cell, with vertex type indicated in Tab. S90. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S90.

TABLE S90. Tiling t4090 vertex types

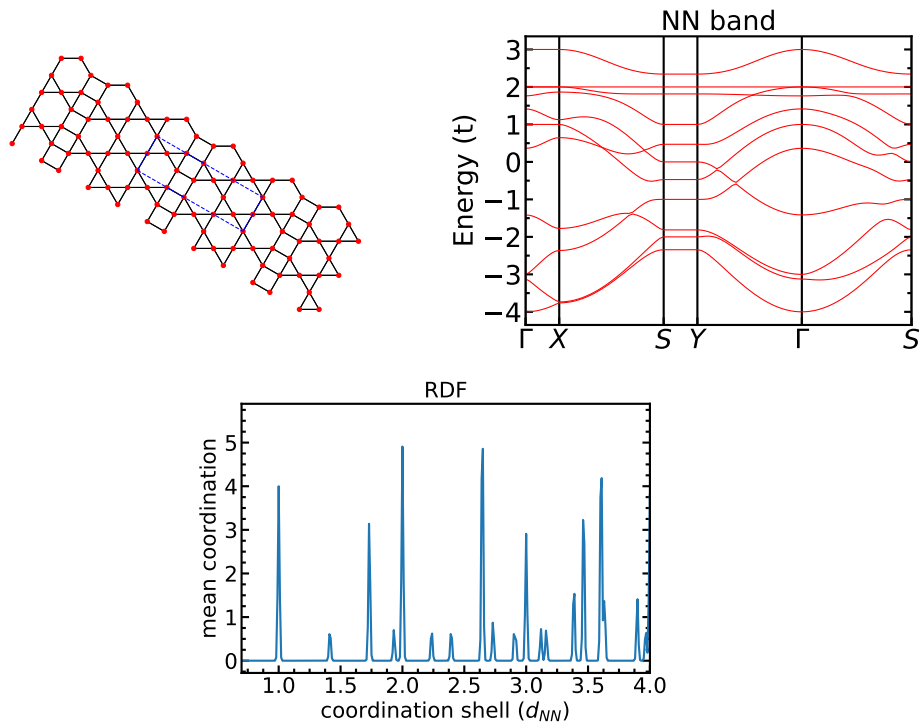| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	7	0	0	0	0	0	4	0

FIG. S90.   t4090 lattice framework, nearest neighbors band structure and radial distribution function.

t4091

Tiling reference number t4091 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S91. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S91.

TABLE S91. Tiling t4091 vertex types

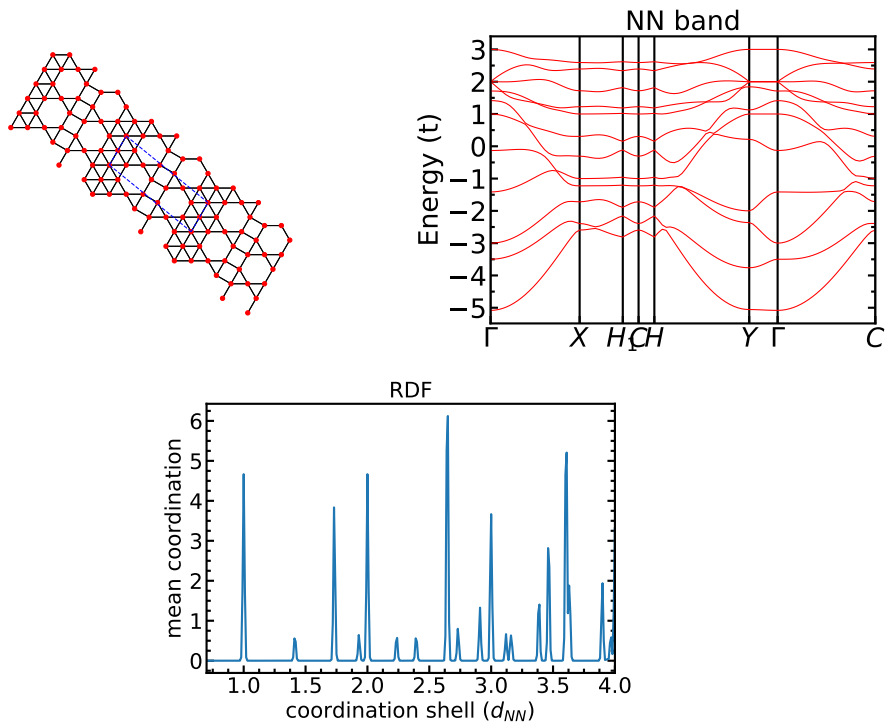| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	2	4	0	0	0	0	4	0

FIG. S91. t4091 lattice framework, nearest neighbors band structure and radial distribution function.

t4092

Tiling reference number t4092 with space-group $'Amm2'$ (38) and 11 sites in the unit cell, with vertex type indicated in Tab. S92. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S92.

TABLE S92.   Tiling t4092 vertex types

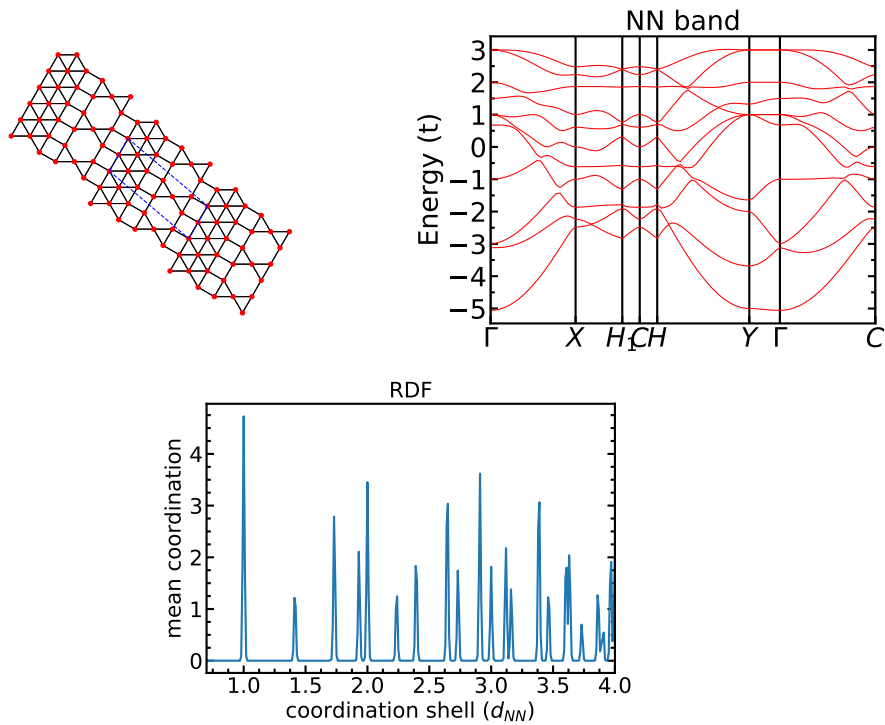| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	1	0	0	4	0	0	4	0

FIG. S92.   t4092 lattice framework, nearest neighbors band structure and radial distribution function.

t4093

Tiling reference number t4093 with space-group $'Amm2'$ (38) and 11 sites in the unit cell, with vertex type indicated in Tab. S93. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S93.

TABLE S93.   Tiling t4093 vertex types

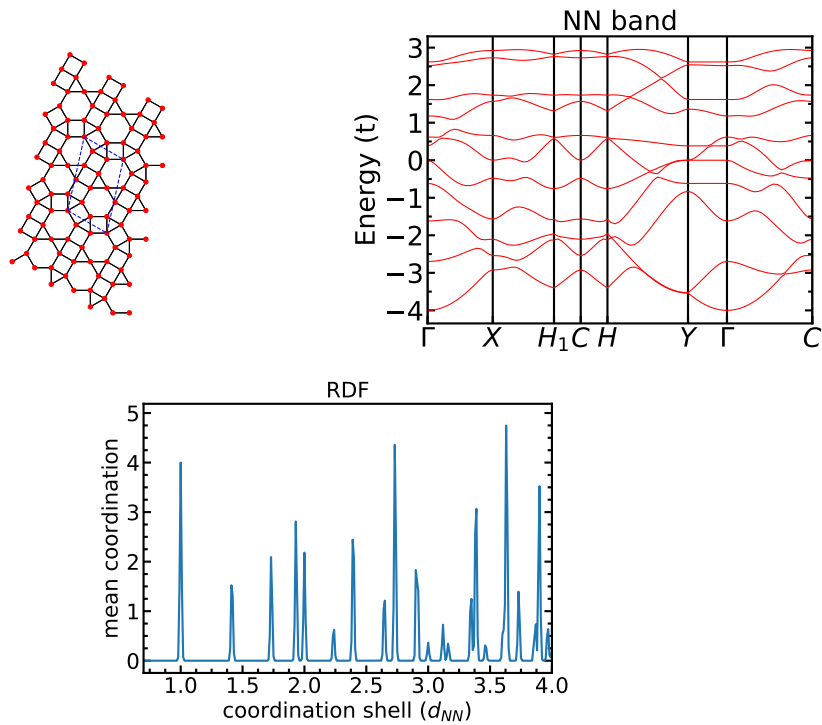| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	6	1	0	0	0	0	0	4	0

FIG. S93.   t4093 lattice framework, nearest neighbors band structure and radial distribution function.

t4094

Tiling reference number t4094 with space-group $'P6/mmm'$ (191) and 36 sites in the unit cell, with vertex type indicated in Tab. S94. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S94.

TABLE S94.   Tiling t4094 vertex types

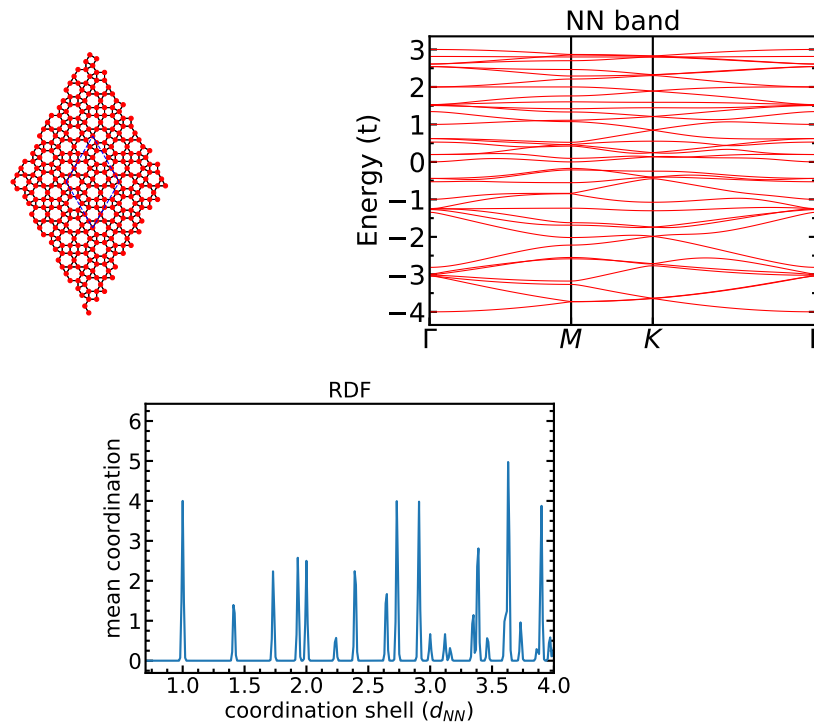| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	18	6	0	0	0	0	0	12	0

FIG. S94.   t4094 lattice framework, nearest neighbors band structure and radial distribution function.

t4095

Tiling reference number t4095 with space-group $'Amm2'$ (38) and 30 sites in the unit cell, with vertex type indicated in Tab. S95. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S95.

TABLE S95.   Tiling t4095 vertex types

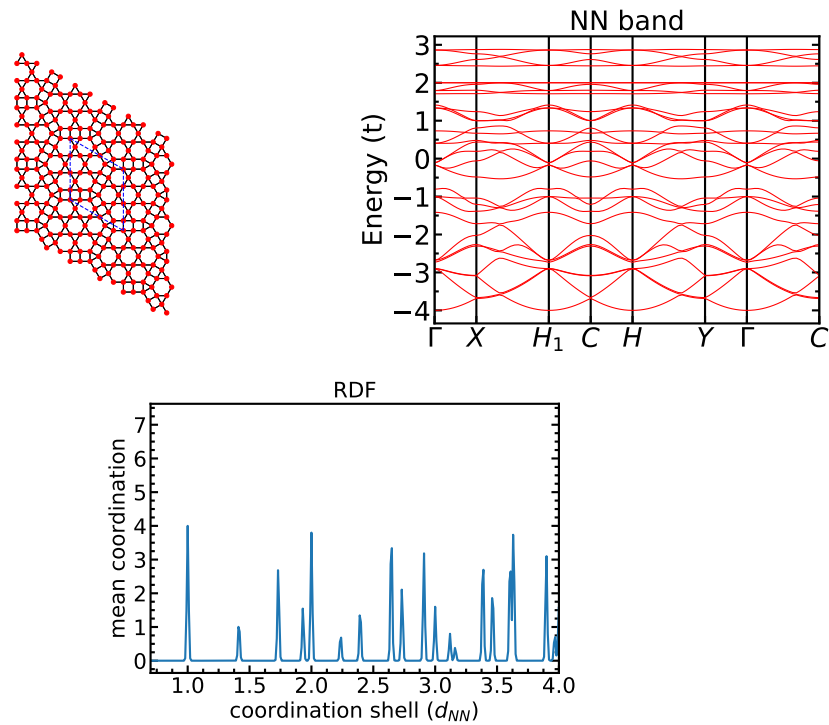| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	6	12	0	0	0	0	0	12	0

FIG. S95.   t4095 lattice framework, nearest neighbors band structure and radial distribution function.

t4096

Tiling reference number t4096 with space-group $'Pmm2'$ (25) and 11 sites in the unit cell, with vertex type indicated in Tab. S96. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S96.

TABLE S96.   Tiling t4096 vertex types

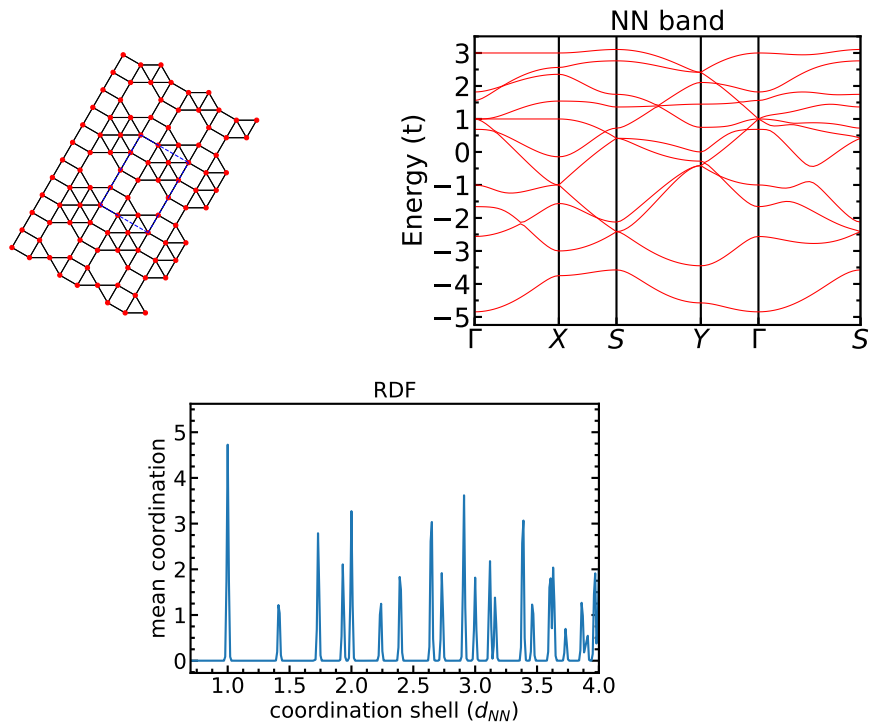| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	0	0	2	0	4	0	0	4	0

FIG. S96.   t4096 lattice framework, nearest neighbors band structure and radial distribution function.

t4097

Tiling reference number t4097 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S97. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S97.

TABLE S97. Tiling t4097 vertex types

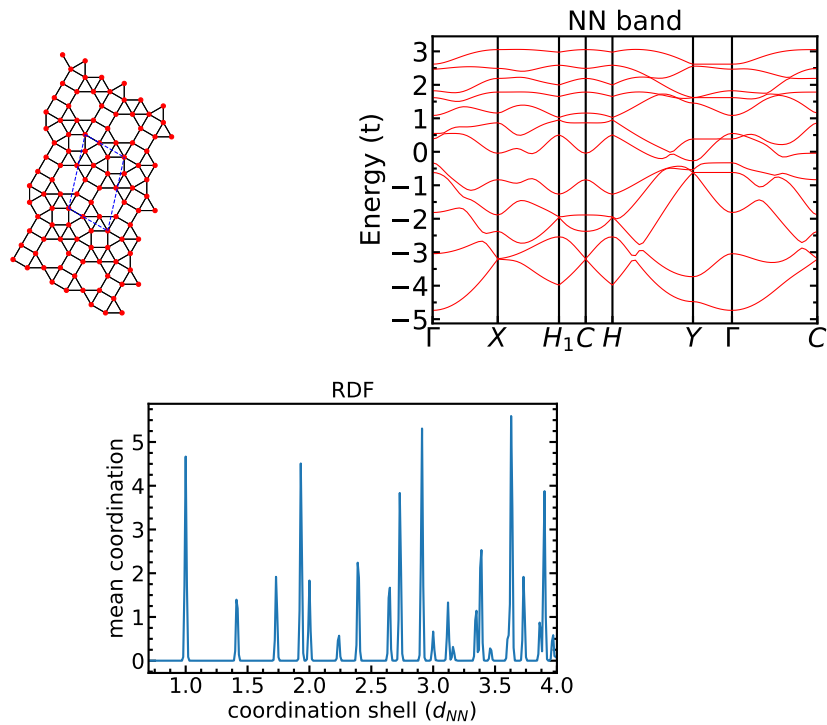| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	0	2	6	0	0	0	4	0

FIG. S97. t4097 lattice framework, nearest neighbors band structure and radial distribution function.

t4098

Tiling reference number t4098 with space-group $'Cmmm'$ (65) and 11 sites in the unit cell, with vertex type indicated in Tab. S98. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S98.

TABLE S98. Tiling t4098 vertex types

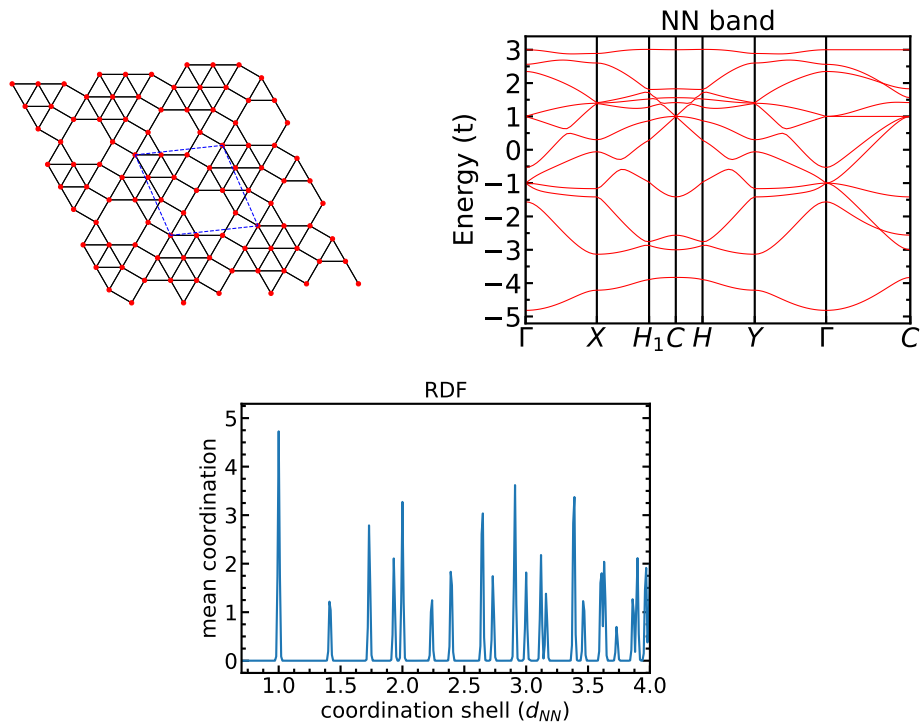| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	0	0	2	0	4	0	0	4	0

FIG. S98.   t4098 lattice framework, nearest neighbors band structure and radial distribution function.

t4099

Tiling reference number t4099 with space-group $'P2/m'$ (10) and 8 sites in the unit cell, with vertex type indicated in Tab. S99. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S99.

TABLE S99.   Tiling t4099 vertex types

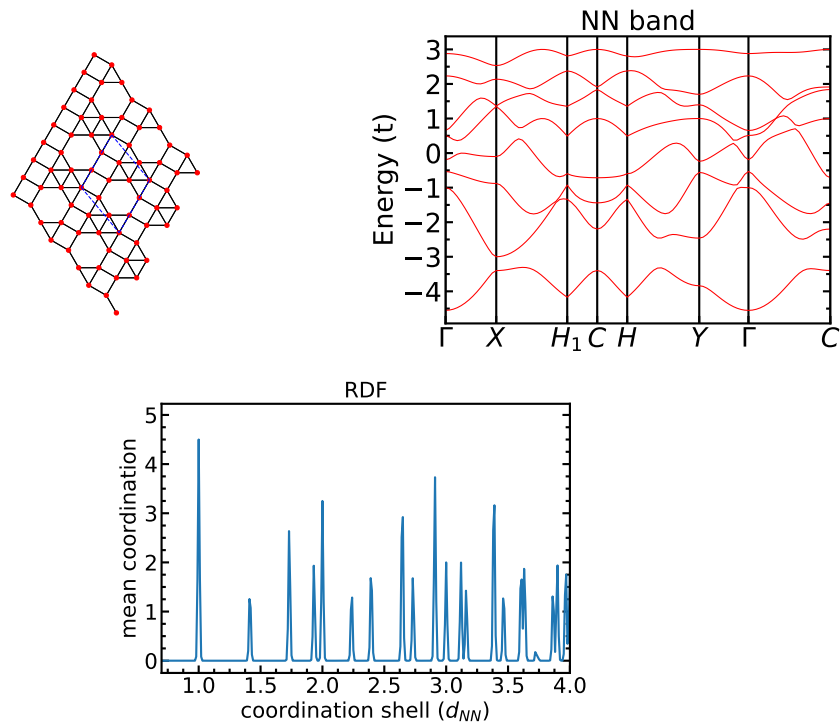| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	0	2	0	2	0	0	4	0

FIG. S99.   t4099 lattice framework, nearest neighbors band structure and radial distribution function.

t4100

Tiling reference number t4100 with space-group $'Amm2'$ (38) and 30 sites in the unit cell, with vertex type indicated in Tab. S100. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S100.

TABLE S100.   Tiling t4100 vertex types

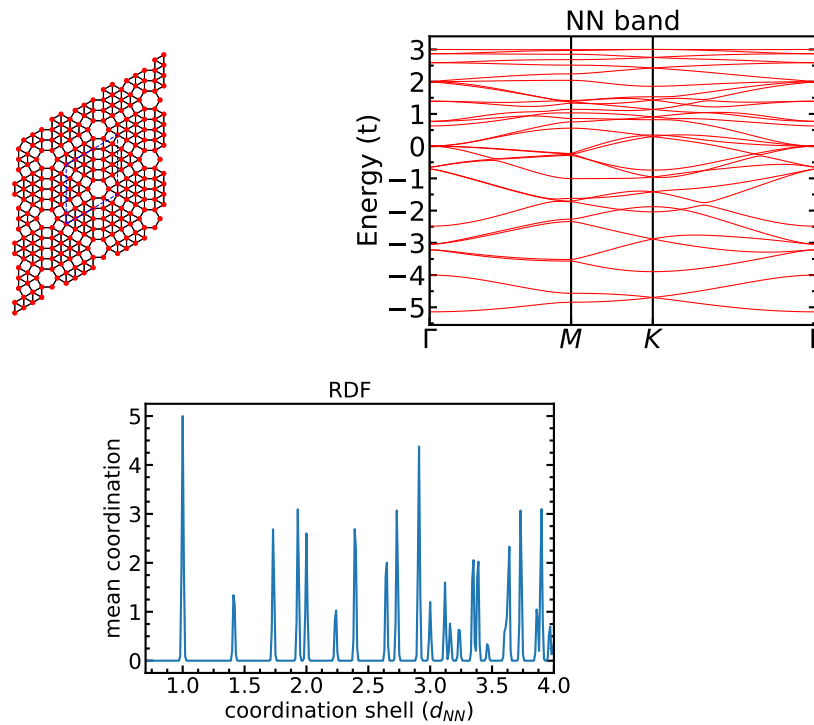| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
6	0	0	0	0	0	6	0	0	0	18	0	0	0	0

FIG. S100.   t4100 lattice framework, nearest neighbors band structure and radial distribution function.

t4101

Tiling reference number t4101 with space-group $'Pm'$ (6) and 27 sites in the unit cell, with vertex type indicated in Tab. S101. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S101.

TABLE S101. Tiling t4101 vertex types

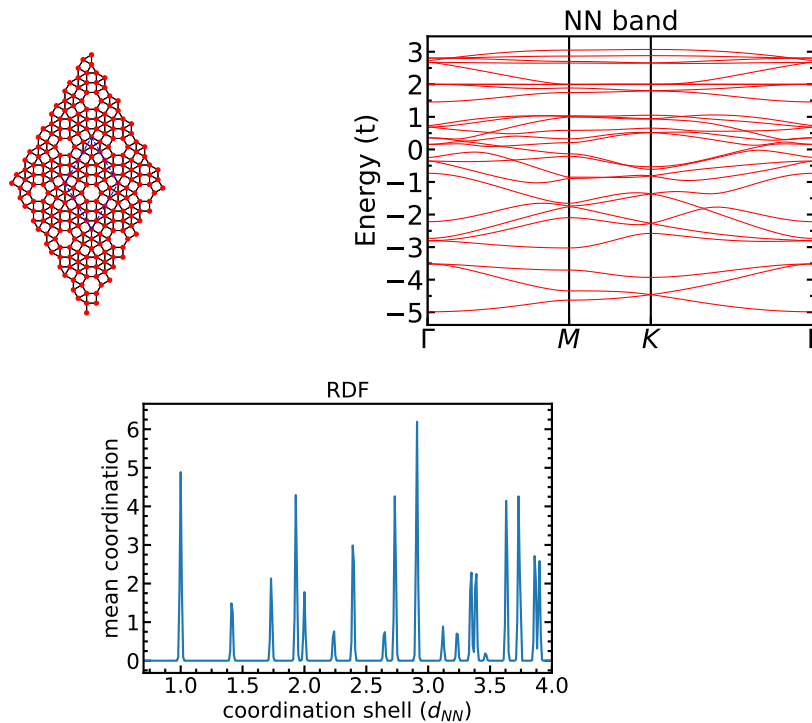| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	0	0	0	0	0	6	0	0	6	12	0	0	0	0

FIG. S101.   t4101 lattice framework, nearest neighbors band structure and radial distribution function.

t4102

Tiling reference number t4102 with space-group $'Amm2'$ (38) and 36 sites in the unit cell, with vertex type indicated in Tab. S102. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S102.

TABLE S102. Tiling t4102 vertex types

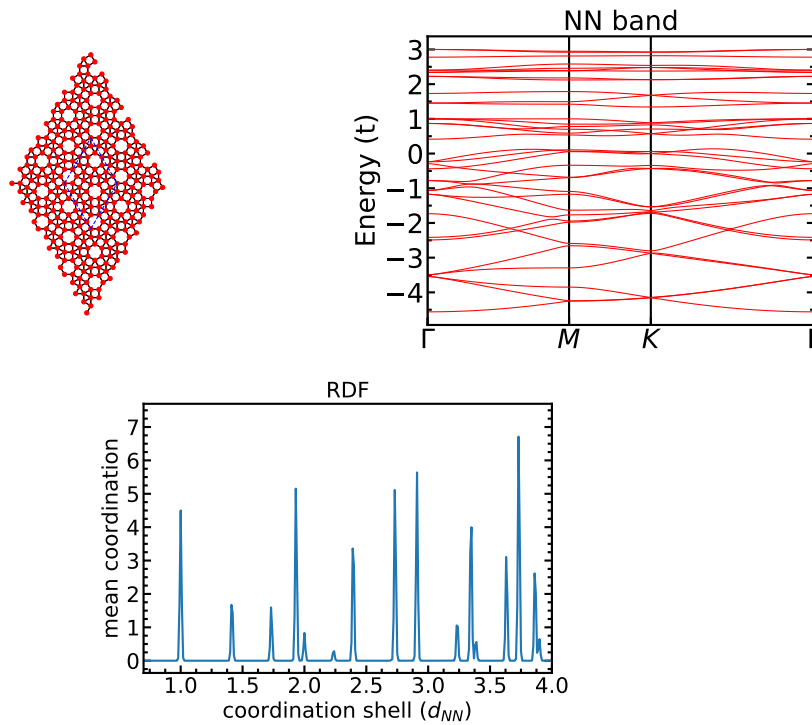| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	18	0	0	12	6	0	0	0	0

FIG. S102.   t4102 lattice framework, nearest neighbors band structure and radial distribution function.

t4103

Tiling reference number t4103 with space-group $'Pm'$ (6) and 30 sites in the unit cell, with vertex type indicated in Tab. S103. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S103.

TABLE S103. Tiling t4103 vertex types

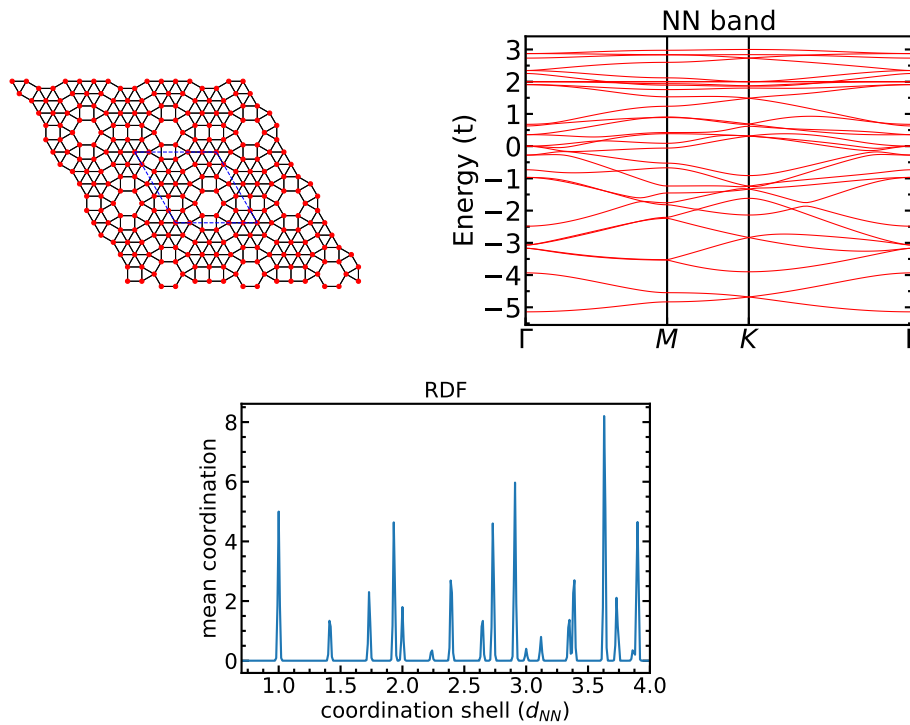| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
6	0	0	0	0	0	6	0	0	12	6	0	0	0	0

FIG. S103.   t4103 lattice framework, nearest neighbors band structure and radial distribution function.

t4104

Tiling reference number t4104 with space-group $'Amm2'$ (38) and 27 sites in the unit cell, with vertex type indicated in Tab. S104. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S104.

TABLE S104.   Tiling t4104 vertex types

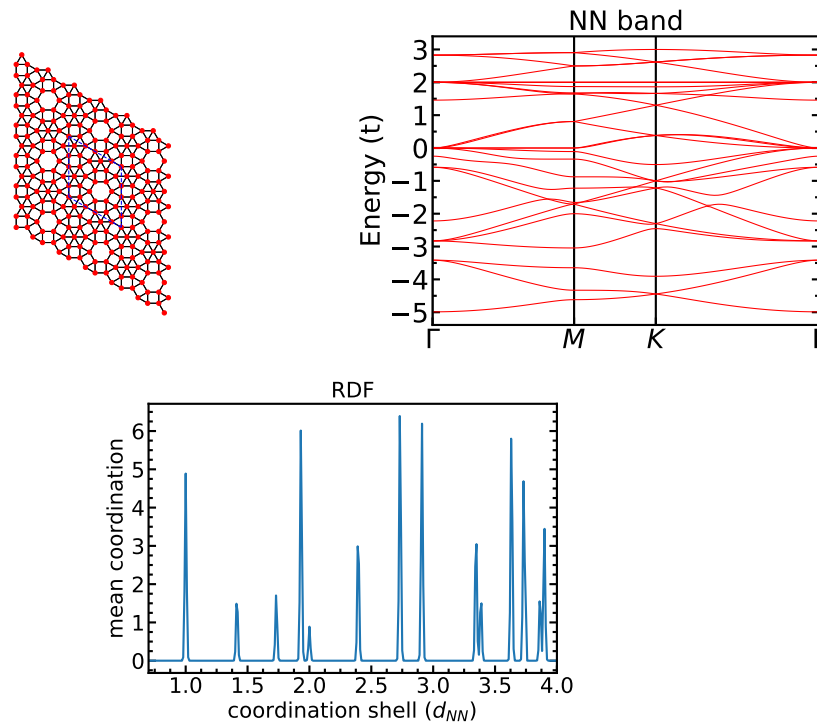| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	0	0	0	0	0	6	0	0	18	0	0	0	0	0

FIG. S104.   t4104 lattice framework, nearest neighbors band structure and radial distribution function.

t4105

Tiling reference number t4105 with space-group $'Amm2'$ (38) and 25 sites in the unit cell, with vertex type indicated in Tab. S105. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S105.

TABLE S105.   Tiling t4105 vertex types

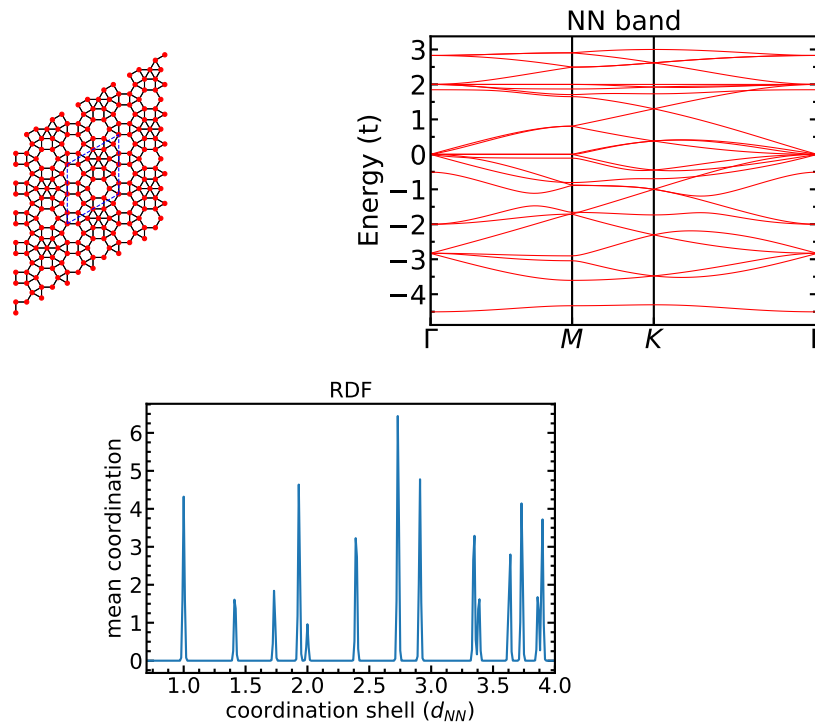| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	18	0	0	6	0	0	0	0	0

FIG. S105.   t4105 lattice framework, nearest neighbors band structure and radial distribution function.

106

t4106

Tiling reference number t4106 with space-group $'Pmm2'$ (25) and 10 sites in the unit cell, with vertex type indicated in Tab. S106. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S106.

TABLE S106.   Tiling t4106 vertex types

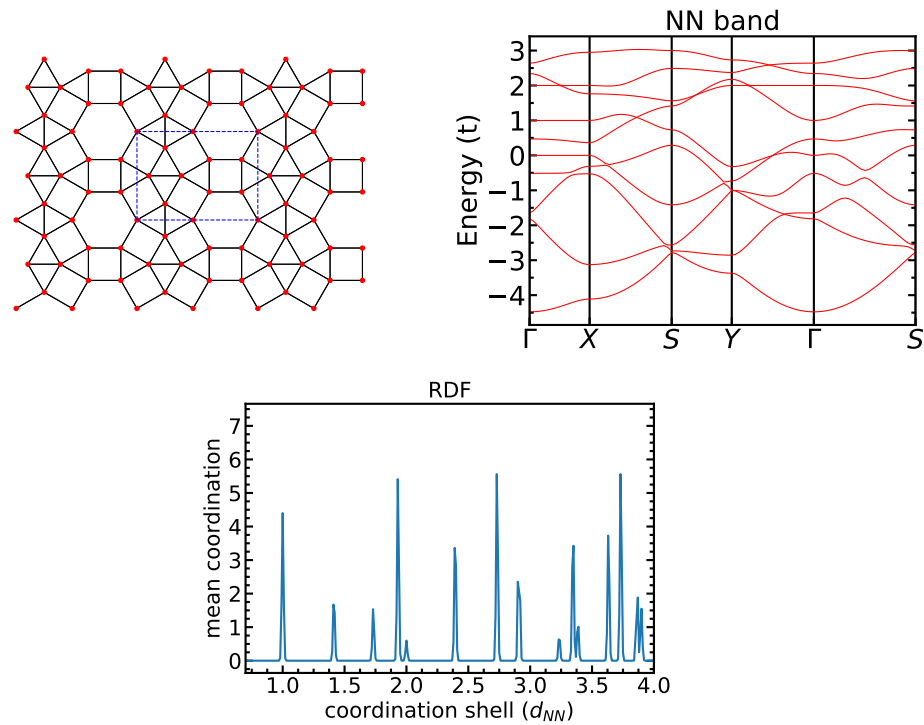| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	6	0	0	4	0	0	0	0	0

FIG. S106.   t4106 lattice framework, nearest neighbors band structure and radial distribution function.

t4107

Tiling reference number t4107 with space-group $'Amm2'$ (38) and 28 sites in the unit cell, with vertex type indicated in Tab. S107. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S107.

TABLE S107.   Tiling t4107 vertex types

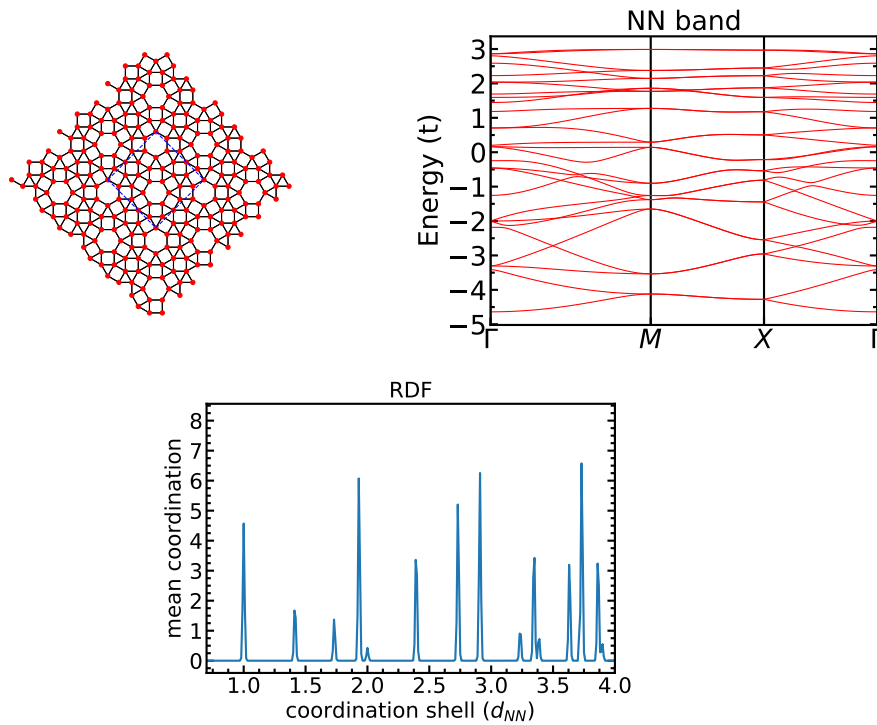| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	12	0	0	16	0	0	0	0	0

FIG. S107.   t4107 lattice framework, nearest neighbors band structure and radial distribution function.

t4108

Tiling reference number t4108 with space-group $'Amm2'$ (38) and 30 sites in the unit cell, with vertex type indicated in Tab. S108. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S108.

TABLE S108.   Tiling t4108 vertex types

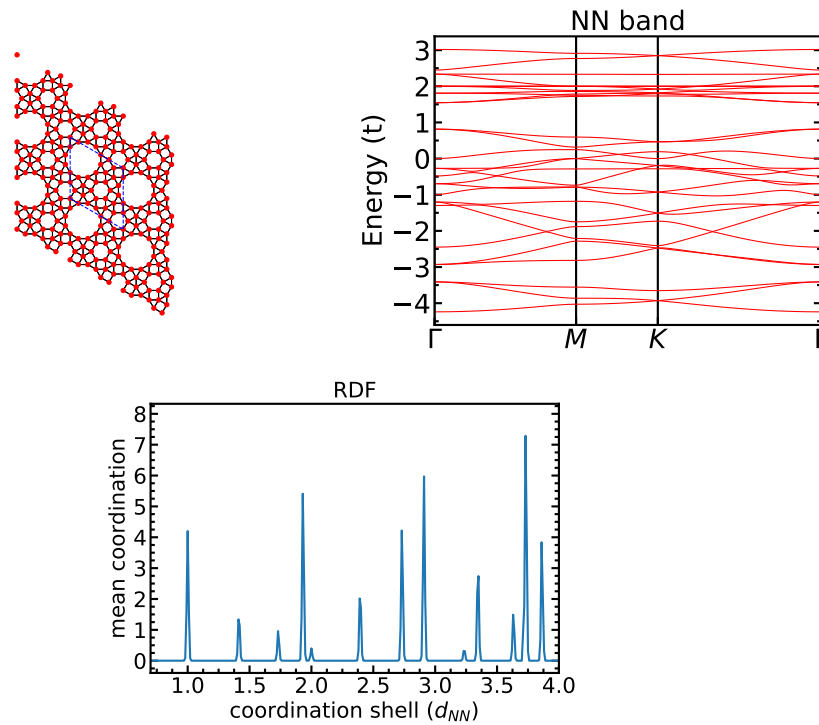| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	12	0	0	6	0	0	12	0	0

FIG. S108.   t4108 lattice framework, nearest neighbors band structure and radial distribution function.

t4109

Tiling reference number t4109 with space-group $'Cmmm'$ (65) and 12 sites in the unit cell, with vertex type indicated in Tab. S109. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S109.

TABLE S109. Tiling t4109 vertex types

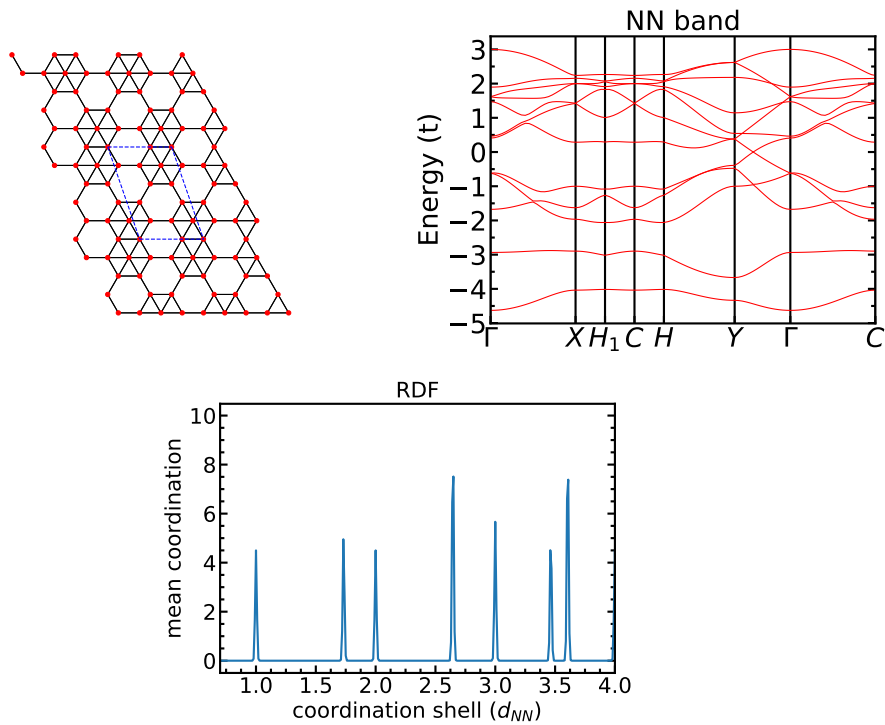| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	0	2	0	0	0	0	0	8

FIG. S109. t4109 lattice framework, nearest neighbors band structure and radial distribution function.

110

t4110

Tiling reference number t4110 with space-group $'Amm2'$ (38) and 30 sites in the unit cell, with vertex type indicated in Tab. S110. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S110.

TABLE S110.   Tiling t4110 vertex types

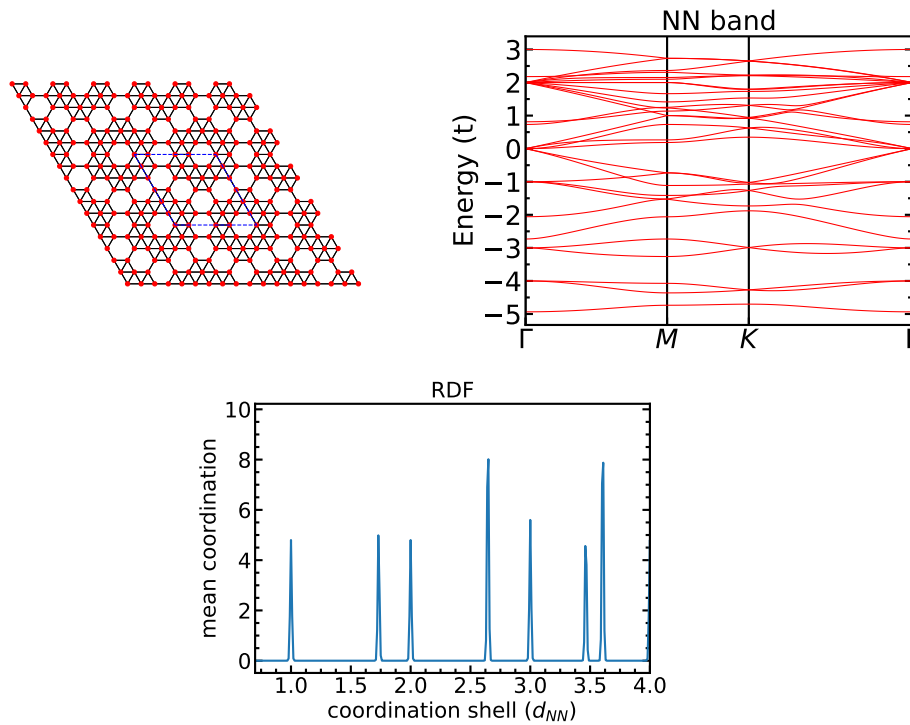| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
6	0	0	0	0	0	0	0	12	0	0	0	0	0	12

FIG. S110.   t4110 lattice framework, nearest neighbors band structure and radial distribution function.

t4111

Tiling reference number t4111 with space-group $'P6/mmm'$ (191) and 19 sites in the unit cell, with vertex type indicated in Tab. S111. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S111.

TABLE S111.   Tiling t4111 vertex types

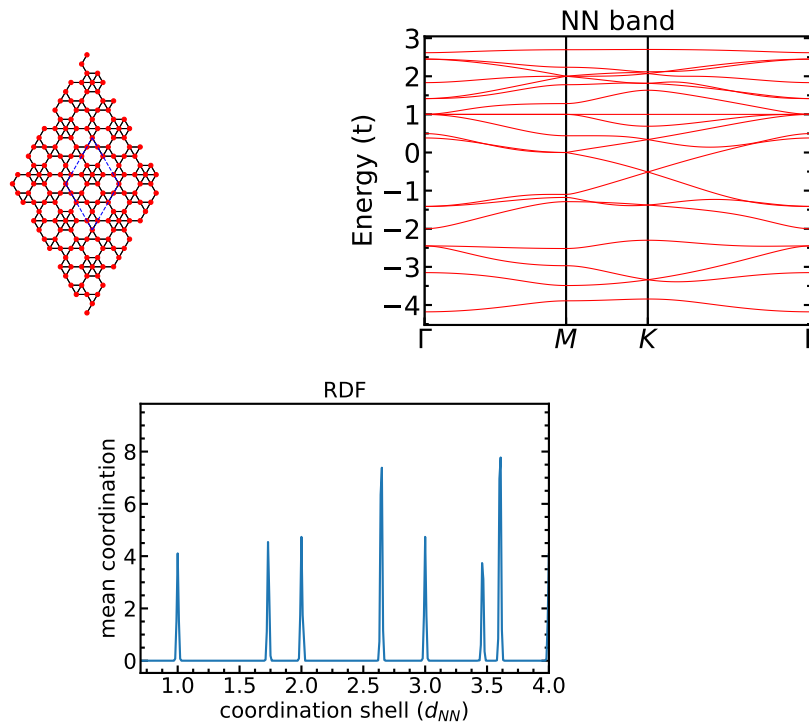| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	0	6	0	0	0	0	0	0	12

FIG. S111.   t4111 lattice framework, nearest neighbors band structure and radial distribution function.

t4112

Tiling reference number t4112 with space-group $'P2/m'$ (10) and 7 sites in the unit cell, with vertex type indicated in Tab. S112. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S112.

TABLE S112.   Tiling t4112 vertex types

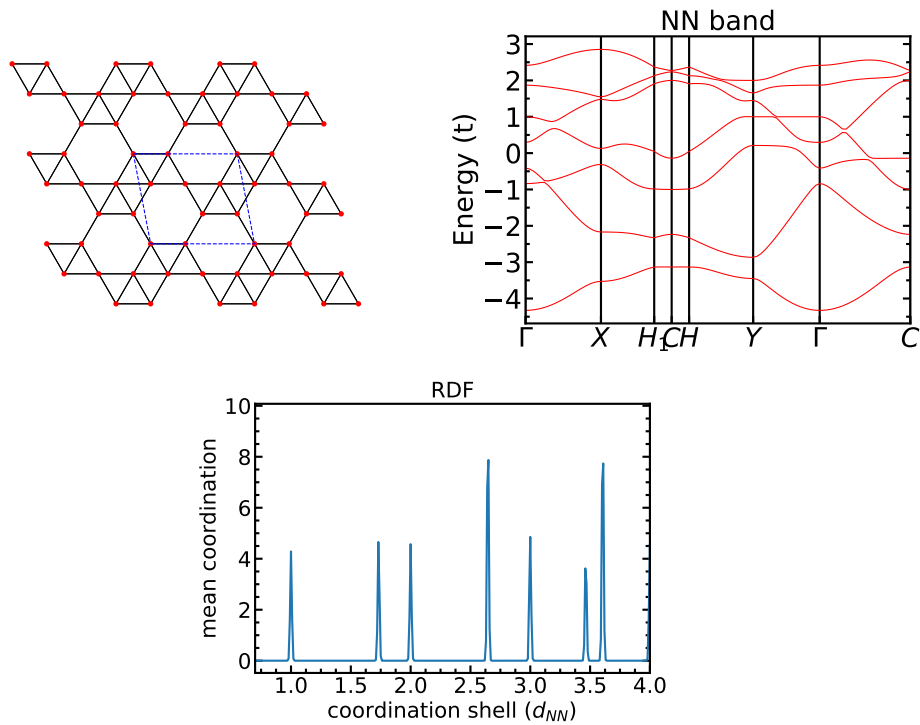| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	1	2	0	0	0	0	0	4

FIG. S112.   t4112 lattice framework, nearest neighbors band structure and radial distribution function.

t4113

Tiling reference number t4113 with space-group $'Pbam'$ (55) and 14 sites in the unit cell, with vertex type indicated in Tab. S113. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S113.

TABLE S113. Tiling t4113 vertex types

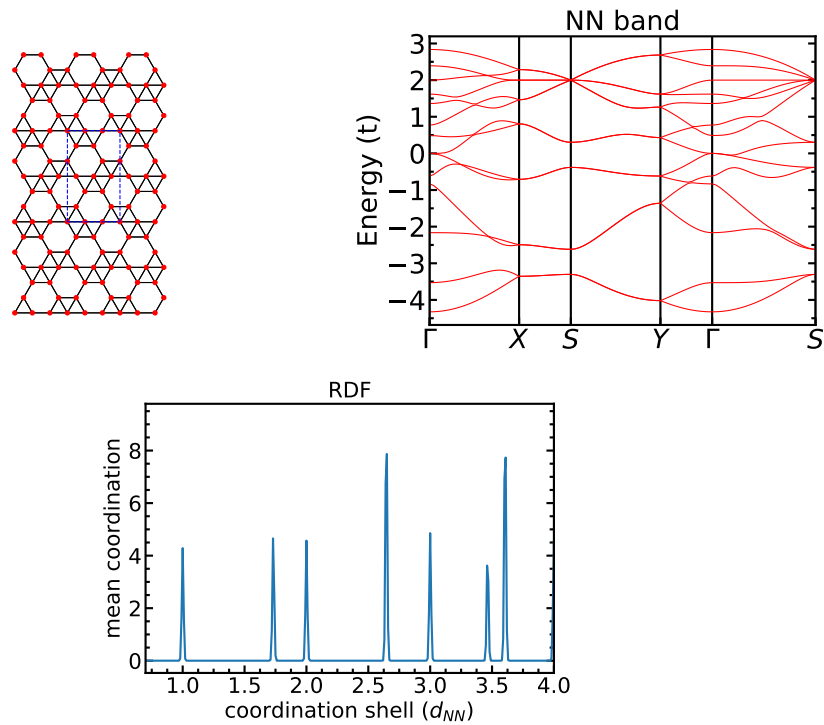| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	2	4	0	0	0	0	0	8

FIG. S113. t4113 lattice framework, nearest neighbors band structure and radial distribution function.

t4114

Tiling reference number t4114 with space-group $'Pmmm'$ (47) and 9 sites in the unit cell, with vertex type indicated in Tab. S114. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S114.

TABLE S114.   Tiling t4114 vertex types

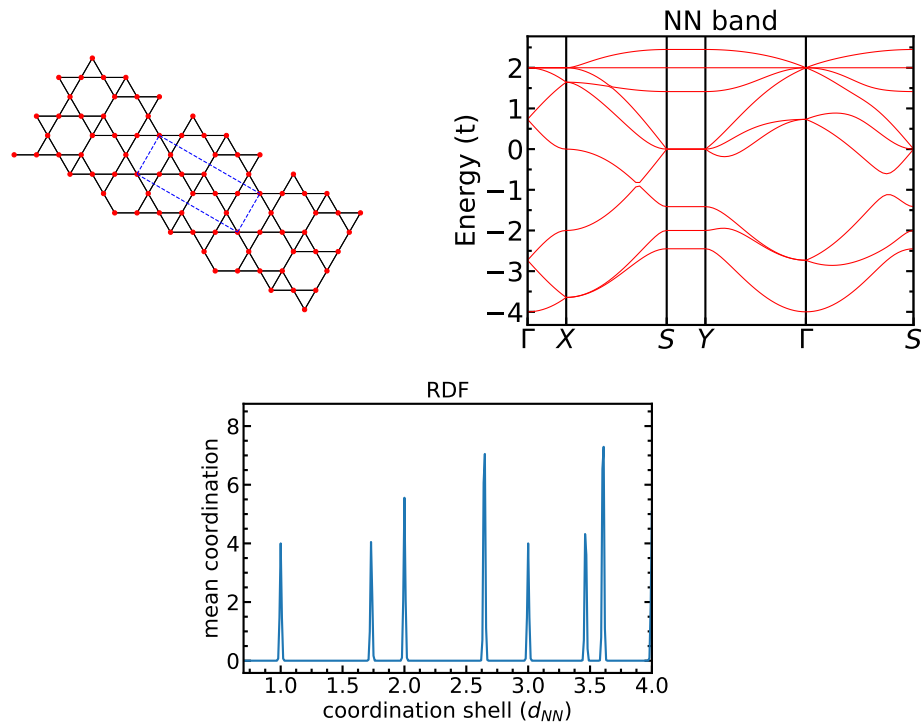| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	7	0	0	0	0	0	0	2

FIG. S114.   t4114 lattice framework, nearest neighbors band structure and radial distribution function.

t4115

Tiling reference number t4115 with space-group $'Cmmm'$ (65) and 10 sites in the unit cell, with vertex type indicated in Tab. S115. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S115.

TABLE S115. Tiling t4115 vertex types

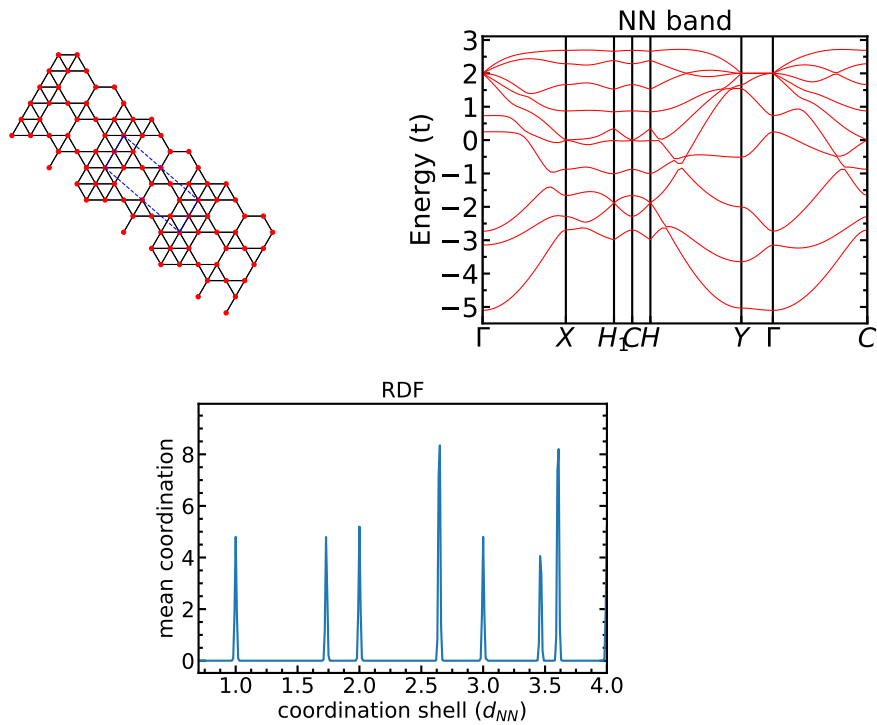| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	2	4	0	0	0	0	0	2

FIG. S115. t4115 lattice framework, nearest neighbors band structure and radial distribution function.

t4116

Tiling reference number t4116 with space-group $'P2/m'$ (10) and 8 sites in the unit cell, with vertex type indicated in Tab. S116. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S116.

TABLE S116.　Tiling t4116 vertex types

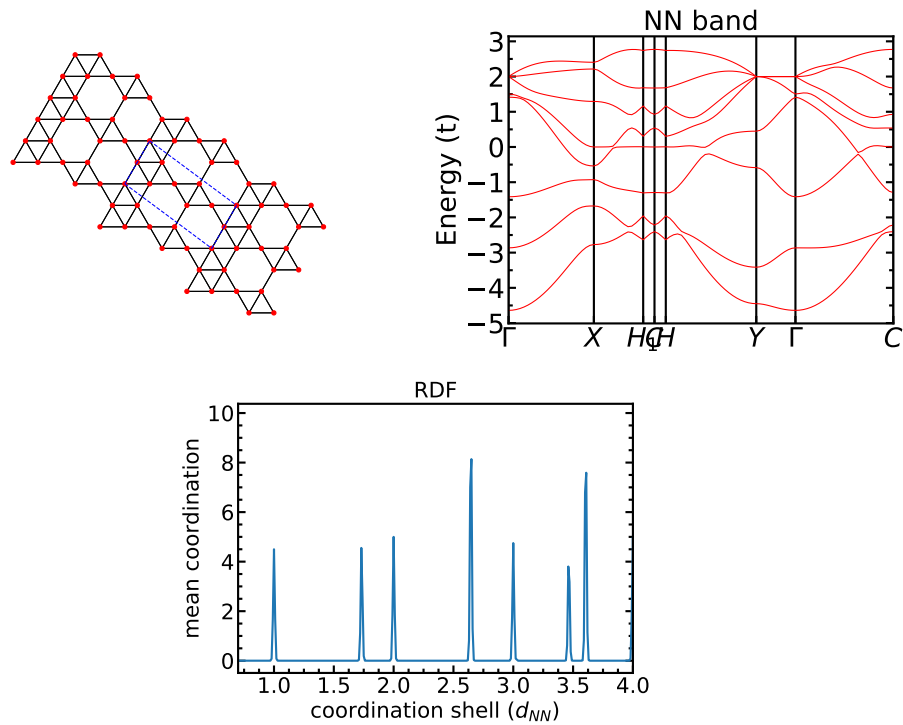| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	2	4	0	0	0	0	0	2

FIG. S116.　t4116 lattice framework, nearest neighbors band structure and radial distribution function.

t4117

Tiling reference number t4117 with space-group $'Cmmm'$ (65) and 9 sites in the unit cell, with vertex type indicated in Tab. S117. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S117.

TABLE S117.   Tiling t4117 vertex types

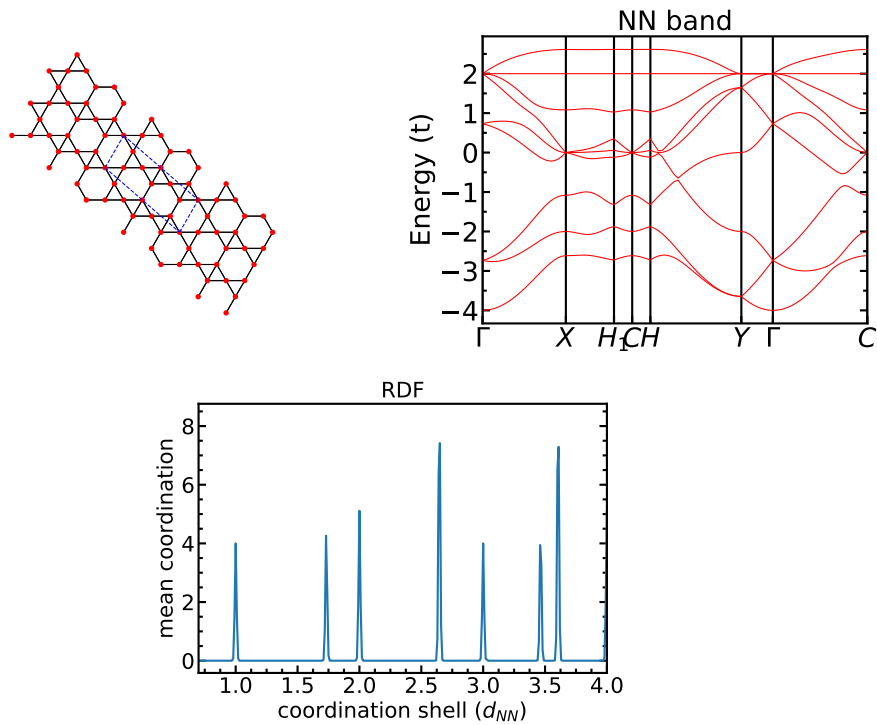| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	5	0	0	0	0	0	0	4

FIG. S117.   t4117 lattice framework, nearest neighbors band structure and radial distribution function.

t4118

Tiling reference number t4118 with space-group $'P - 62m'$ (189) and 21 sites in the unit cell, with vertex type indicated in Tab. S118. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S118.

TABLE S118.   Tiling t4118 vertex types

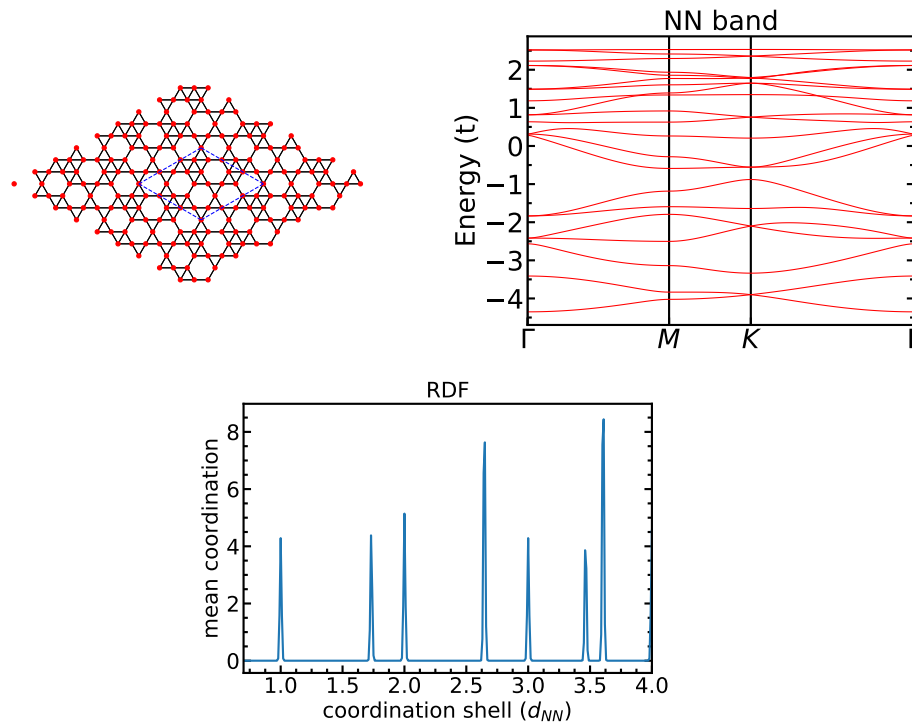| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	9	6	0	0	0	0	0	6

FIG. S118.   t4118 lattice framework, nearest neighbors band structure and radial distribution function.

t4119

Tiling reference number t4119 with space-group $'P6/m'$ (175) and 24 sites in the unit cell, with vertex type indicated in Tab. S119. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S119.

TABLE S119.   Tiling t4119 vertex types

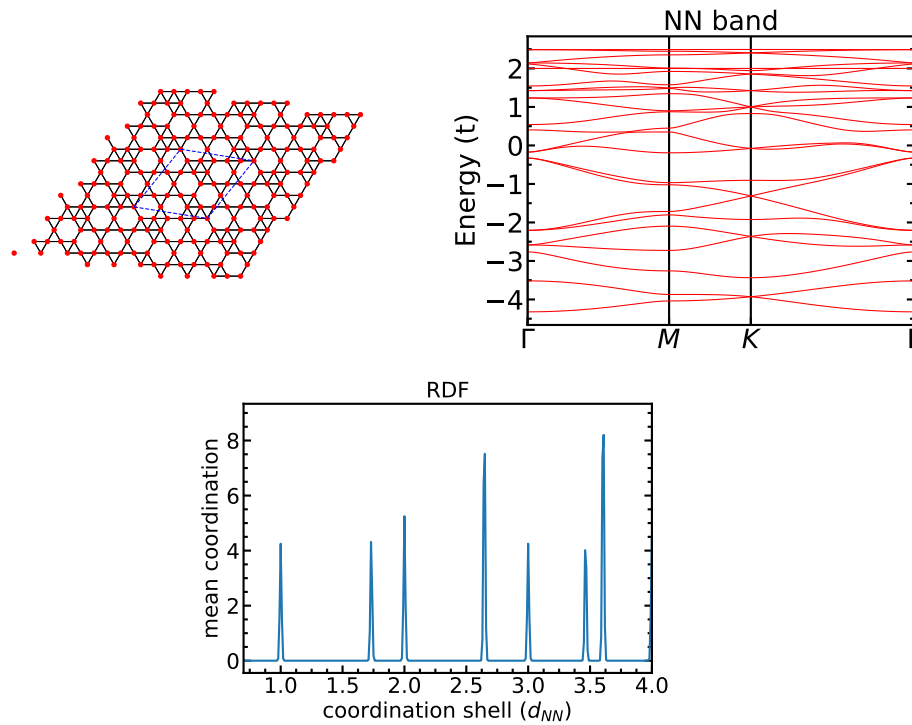| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	12	6	0	0	0	0	0	6

FIG. S119.   t4119 lattice framework, nearest neighbors band structure and radial distribution function.

t4120

Tiling reference number t4120 with space-group $'Pbam'$ (55) and 16 sites in the unit cell, with vertex type indicated in Tab. S120. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S120.

TABLE S120.   Tiling t4120 vertex types

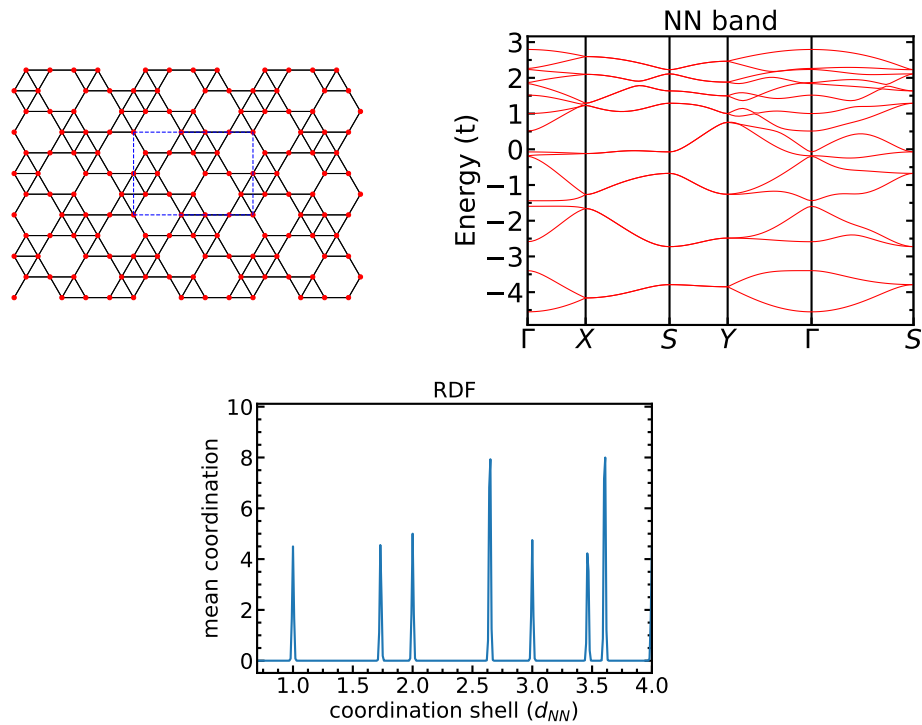| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	4	8	0	0	0	0	0	4

FIG. S120.   t4120 lattice framework, nearest neighbors band structure and radial distribution function.

t4121

Tiling reference number t4121 with space-group $'Cmmm'$ (65) and 7 sites in the unit cell, with vertex type indicated in Tab. S121. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S121.

TABLE S121. Tiling t4121 vertex types

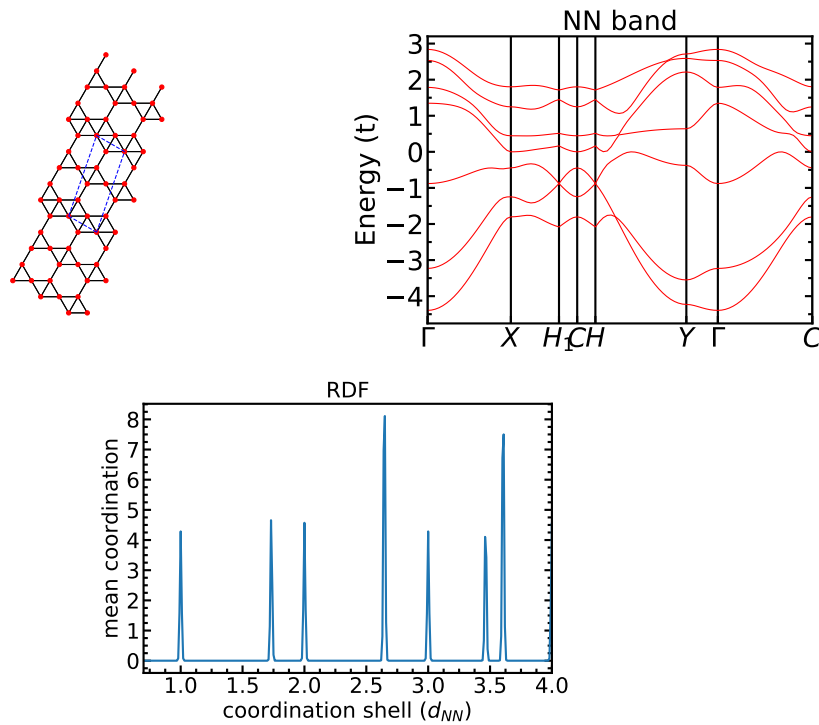| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	1	2	0	0	0	0	0	4

FIG. S121.   t4121 lattice framework, nearest neighbors band structure and radial distribution function.

t4122

Tiling reference number t4122 with space-group $'Pmm2'$ (25) and 7 sites in the unit cell, with vertex type indicated in Tab. S122. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S122.

TABLE S122. Tiling t4122 vertex types

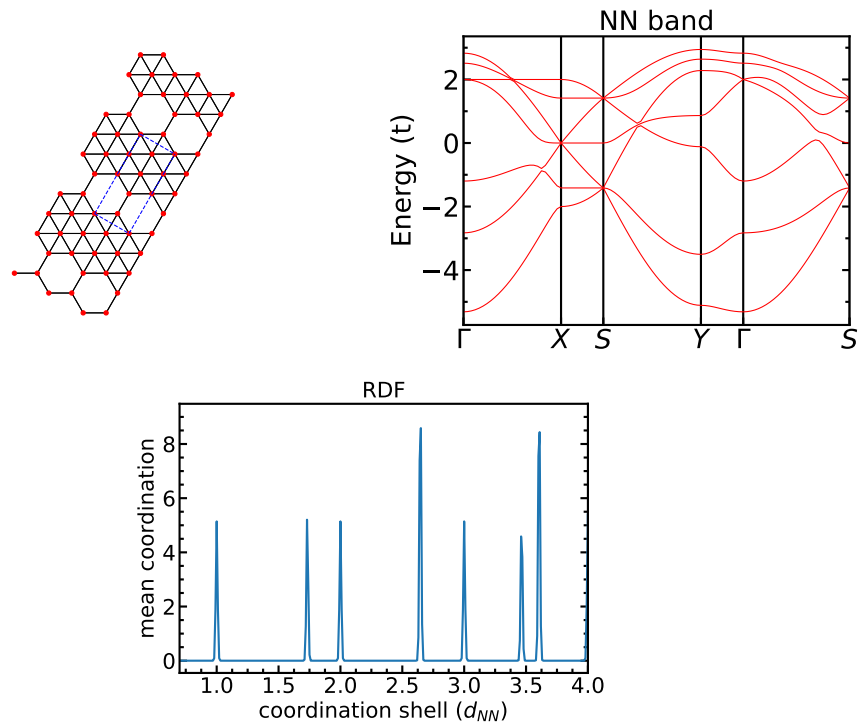| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	0	0	0	0	0	0	0	2	0	0	0	0	0	2

FIG. S122.   t4122 lattice framework, nearest neighbors band structure and radial distribution function.

t4123

Tiling reference number t4123 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S123. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S123.

TABLE S123.   Tiling t4123 vertex types

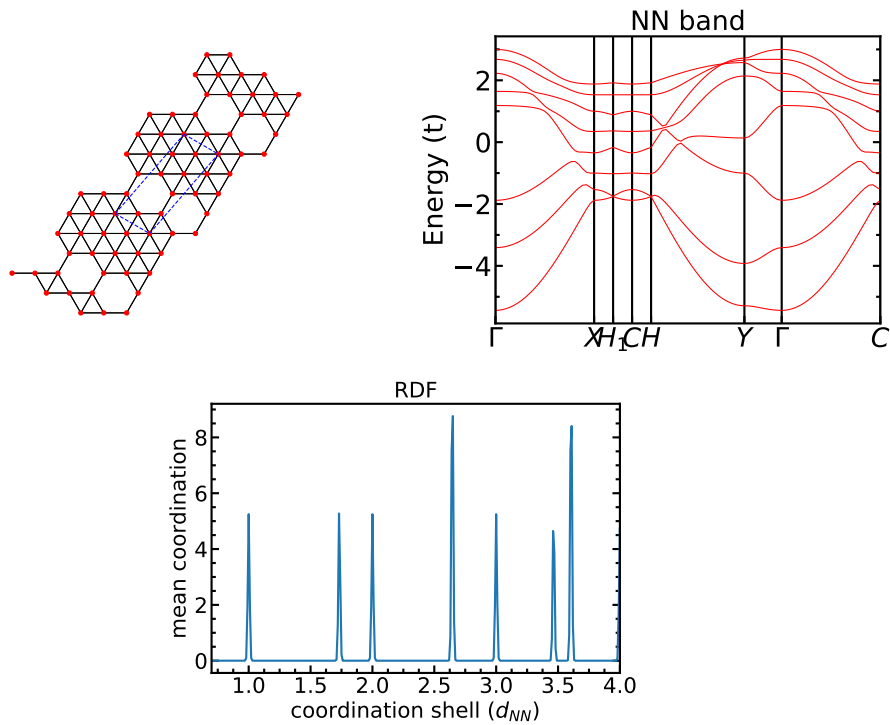| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
4	0	0	0	0	0	0	0	2	0	0	0	0	0	2

FIG. S123.   t4123 lattice framework, nearest neighbors band structure and radial distribution function.

t4124

Tiling reference number t4124 with space-group $'Pmma'$ (51) and 10 sites in the unit cell, with vertex type indicated in Tab. S124. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S124.

TABLE S124.   Tiling t4124 vertex types

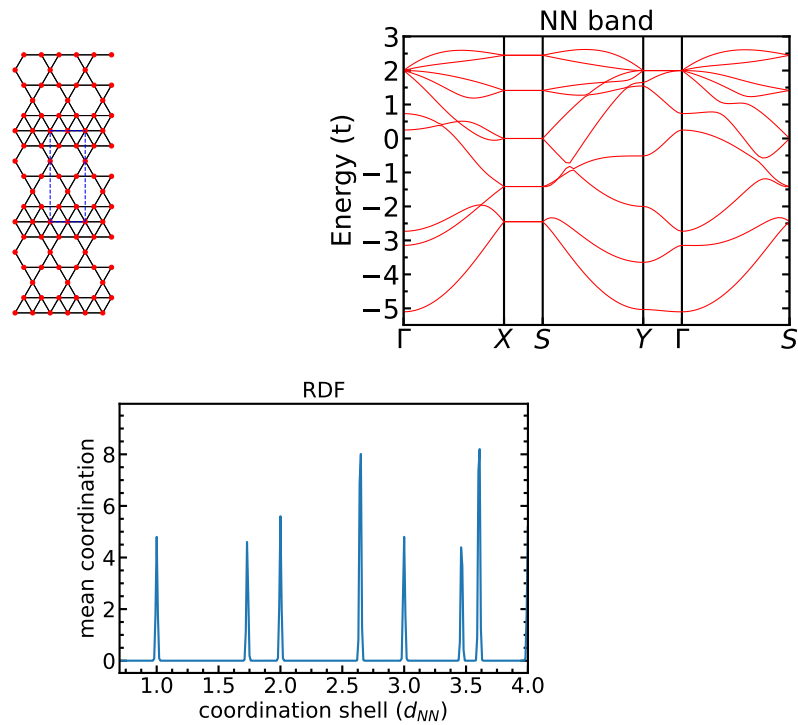| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	4	4	0	0	0	0	0	0

FIG. S124.   t4124 lattice framework, nearest neighbors band structure and radial distribution function.

t4125

Tiling reference number t4125 with space-group $'P2/m'$ (10) and 16 sites in the unit cell, with vertex type indicated in Tab. S125. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S125.

TABLE S125.   Tiling t4125 vertex types

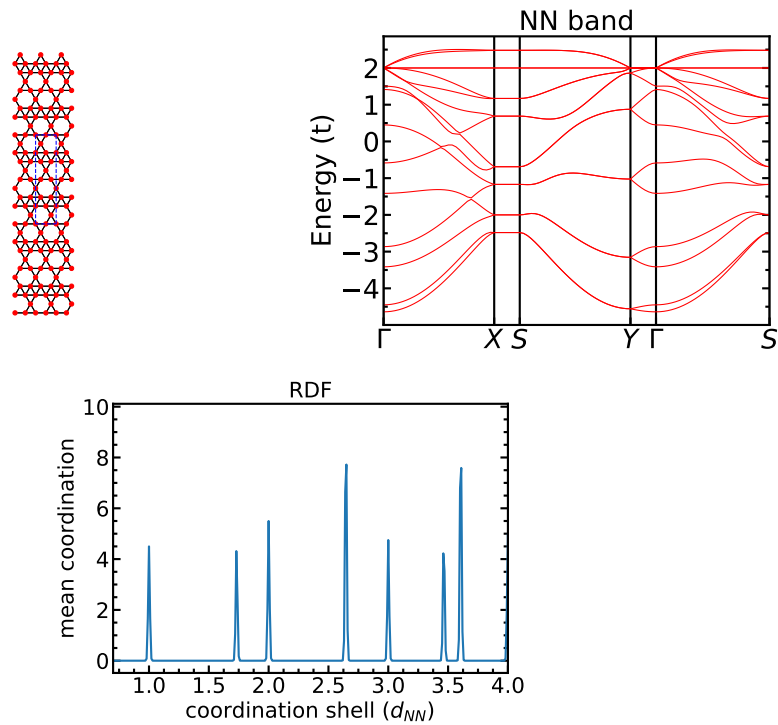| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	8	8	0	0	0	0	0	0

FIG. S125.   t4125 lattice framework, nearest neighbors band structure and radial distribution function.

t4126

Tiling reference number t4126 with space-group $'Pmmm'$ (47) and 9 sites in the unit cell, with vertex type indicated in Tab. S126. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S126.

TABLE S126.   Tiling t4126 vertex types

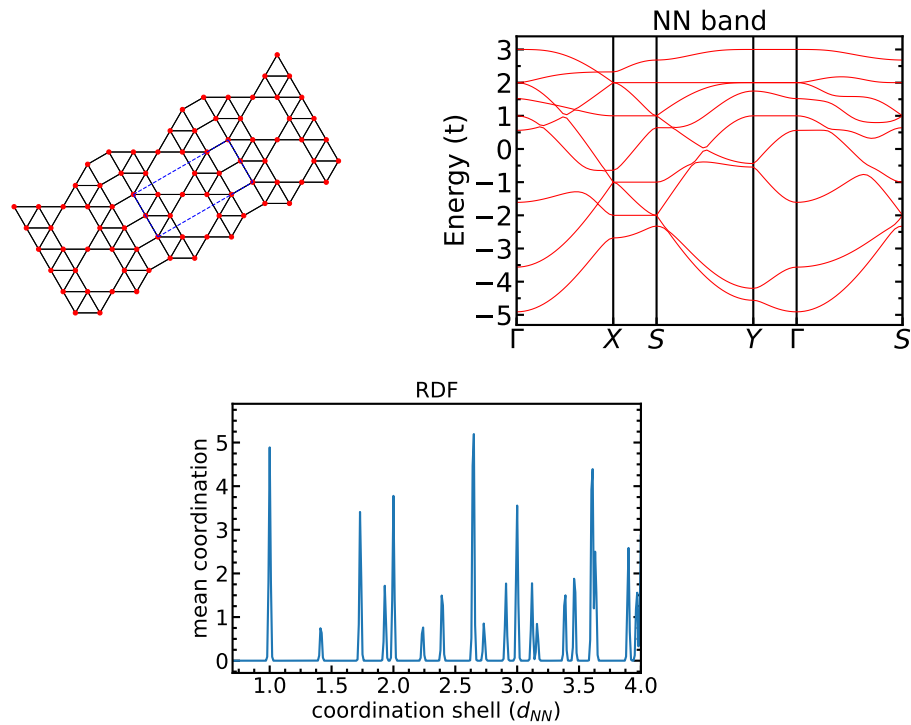| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	1	4	0	4	0	0	0	0

FIG. S126.   t4126 lattice framework, nearest neighbors band structure and radial distribution function.

t4127

Tiling reference number t4127 with space-group $'P2/m'$ (10) and 9 sites in the unit cell, with vertex type indicated in Tab. S127. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S127.

TABLE S127. Tiling t4127 vertex types

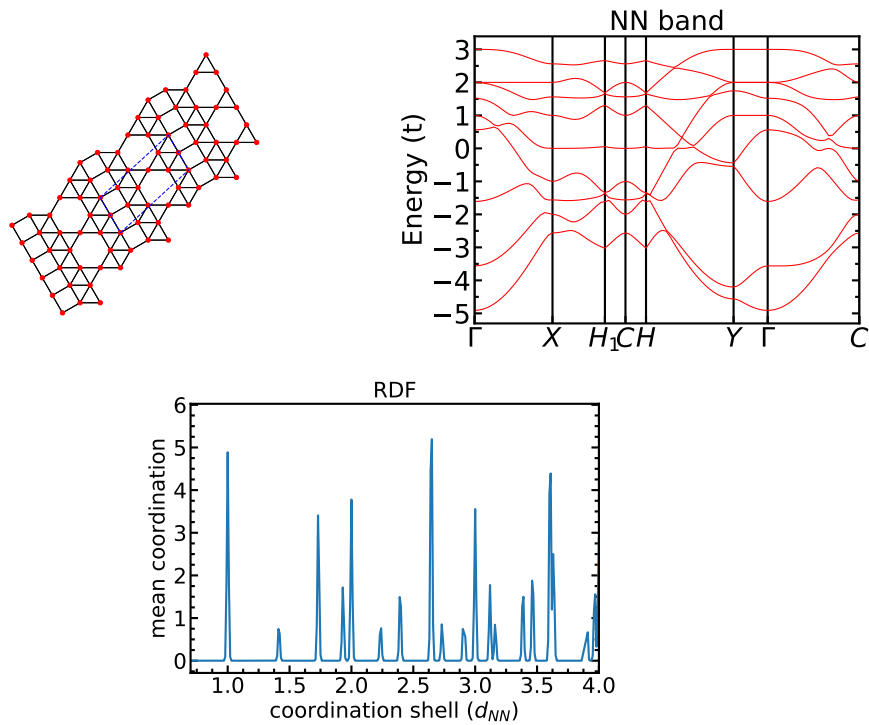| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	1	4	0	4	0	0	0	0

FIG. S127. t4127 lattice framework, nearest neighbors band structure and radial distribution function.

t4128

Tiling reference number t4128 with space-group $'Pmmm'$ (47) and 7 sites in the unit cell, with vertex type indicated in Tab. S128. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S128.

TABLE S128.   Tiling t4128 vertex types

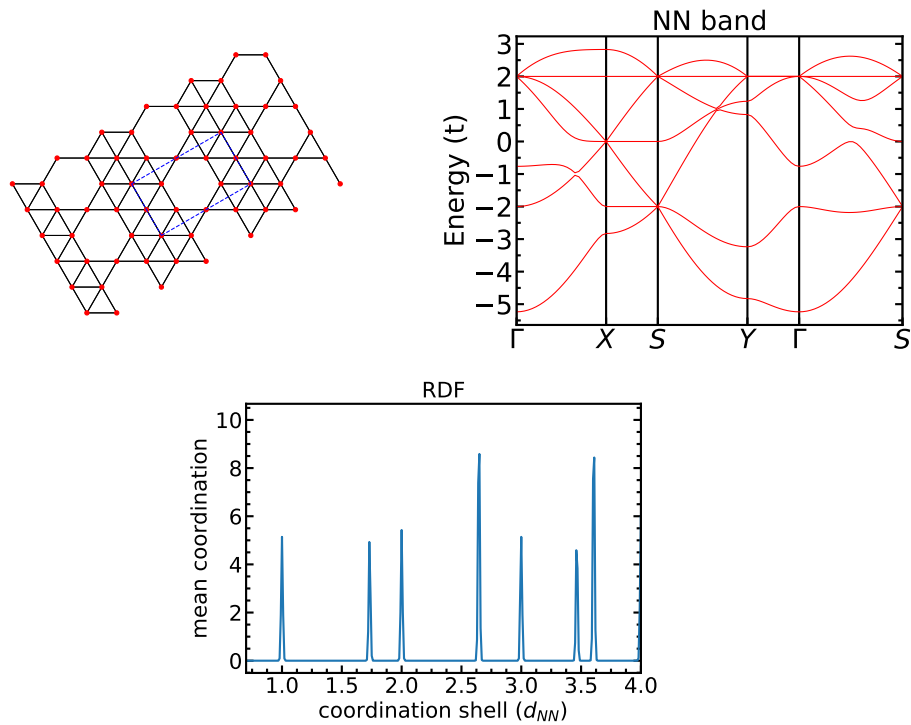| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	1	4	0	0	0	0	0	0

FIG. S128.   t4128 lattice framework, nearest neighbors band structure and radial distribution function.

t4129

Tiling reference number t4129 with space-group $'Pmma'$ (51) and 10 sites in the unit cell, with vertex type indicated in Tab. S129. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S129.

TABLE S129. Tiling t4129 vertex types

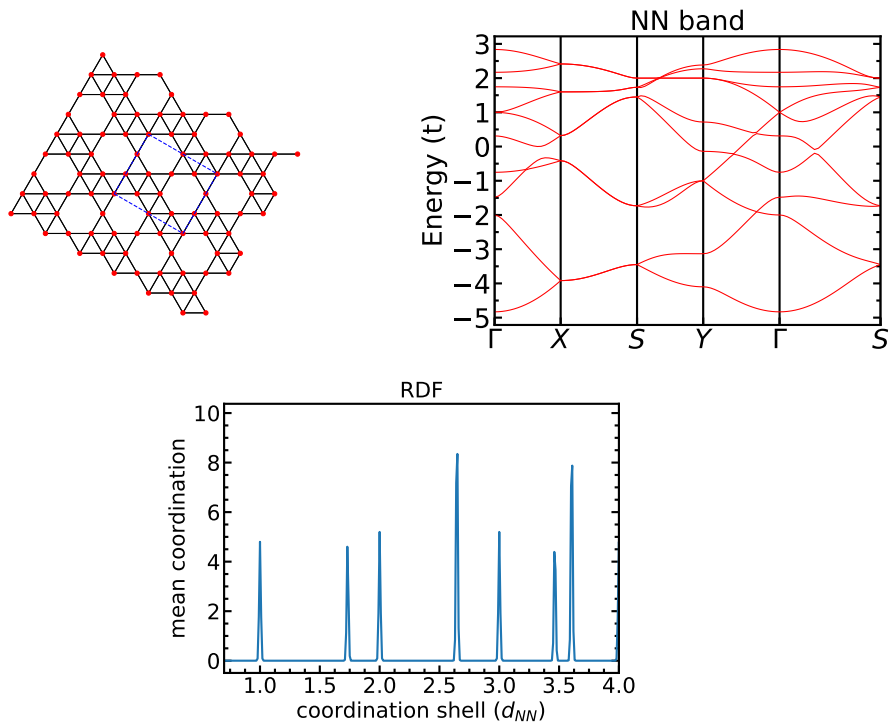| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	2	8	0	0	0	0	0	0

FIG. S129. t4129 lattice framework, nearest neighbors band structure and radial distribution function.

t4130

Tiling reference number t4130 with space-group $'Amm2'$ (38) and 36 sites in the unit cell, with vertex type indicated in Tab. S130. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S130.

TABLE S130.   Tiling t4130 vertex types

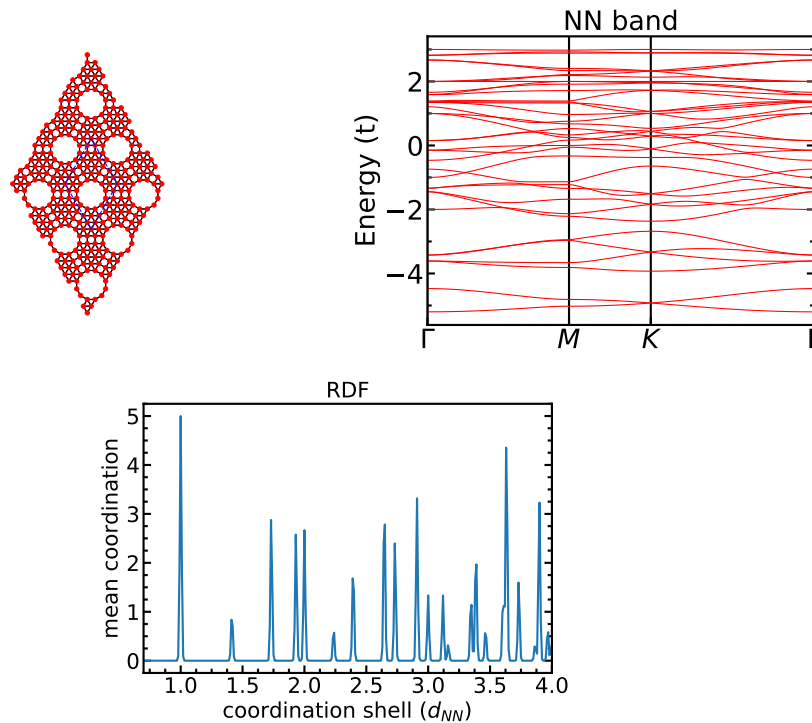| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
12	0	0	0	0	0	0	0	0	0	12	12	0	0	0

FIG. S130.   t4130 lattice framework, nearest neighbors band structure and radial distribution function.

t4131

Tiling reference number t4131 with space-group $'P-6m2'$ (187) and 32 sites in the unit cell, with vertex type indicated in Tab. S131. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S131.

TABLE S131. Tiling t4131 vertex types

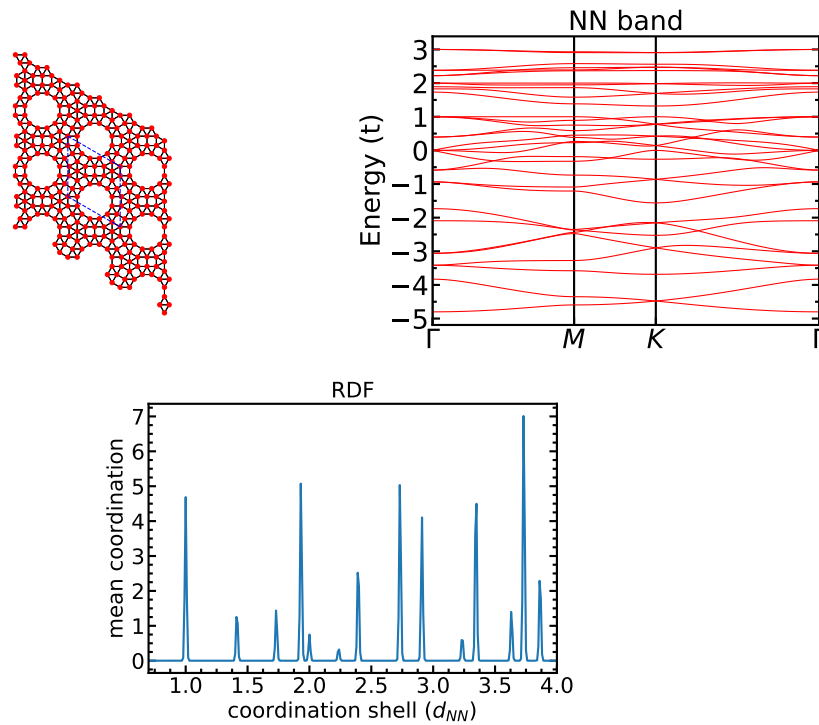| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	0	0	12	6	12	0	0	0

FIG. S131. t4131 lattice framework, nearest neighbors band structure and radial distribution function.

t4132

Tiling reference number t4132 with space-group $'P2/m'$ (10) and 16 sites in the unit cell, with vertex type indicated in Tab. S132. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S132.

TABLE S132.   Tiling t4132 vertex types

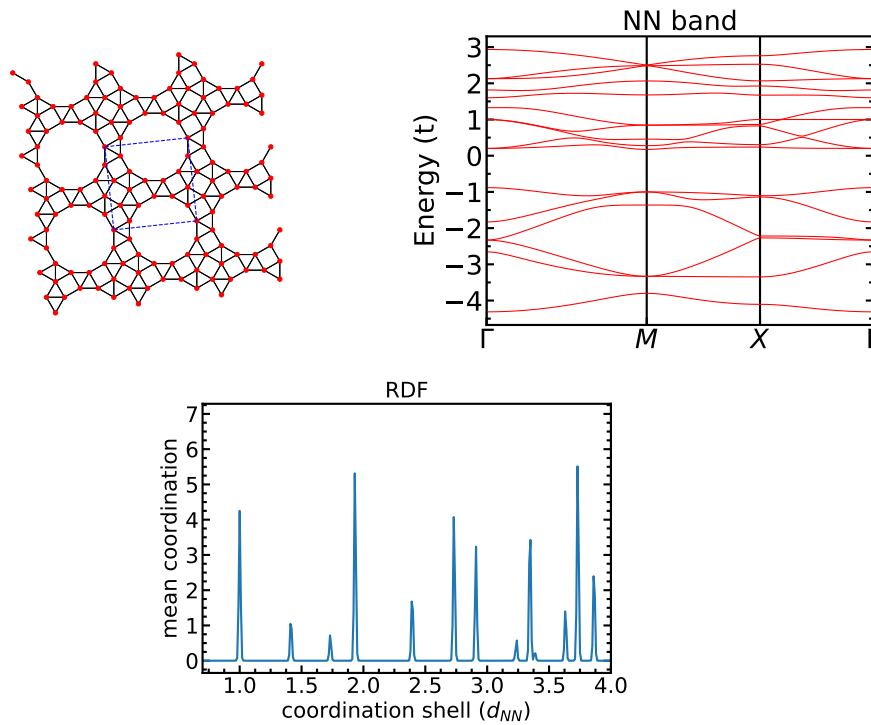| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	0	0	4	0	8	4	0	0

FIG. S132.   t4132 lattice framework, nearest neighbors band structure and radial distribution function.

t4133

Tiling reference number t4133 with space-group $'Pmm2'$ (25) and 7 sites in the unit cell, with vertex type indicated in Tab. S133. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S133.

TABLE S133. Tiling t4133 vertex types

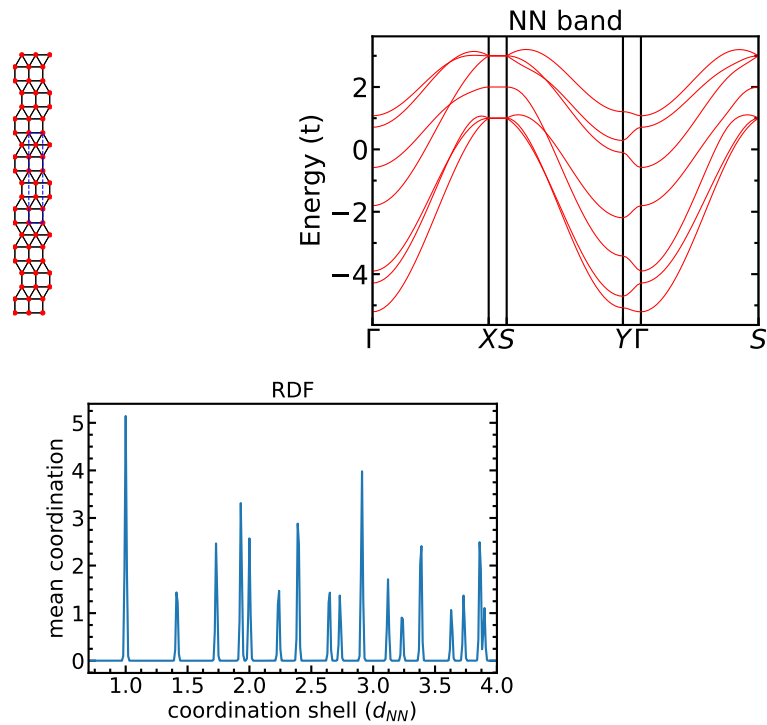| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	0	0	0	0	6	0	0	0	0

FIG. S133. t4133 lattice framework, nearest neighbors band structure and radial distribution function.

t4134

Tiling reference number t4134 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S134. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S134.

TABLE S134.   Tiling t4134 vertex types

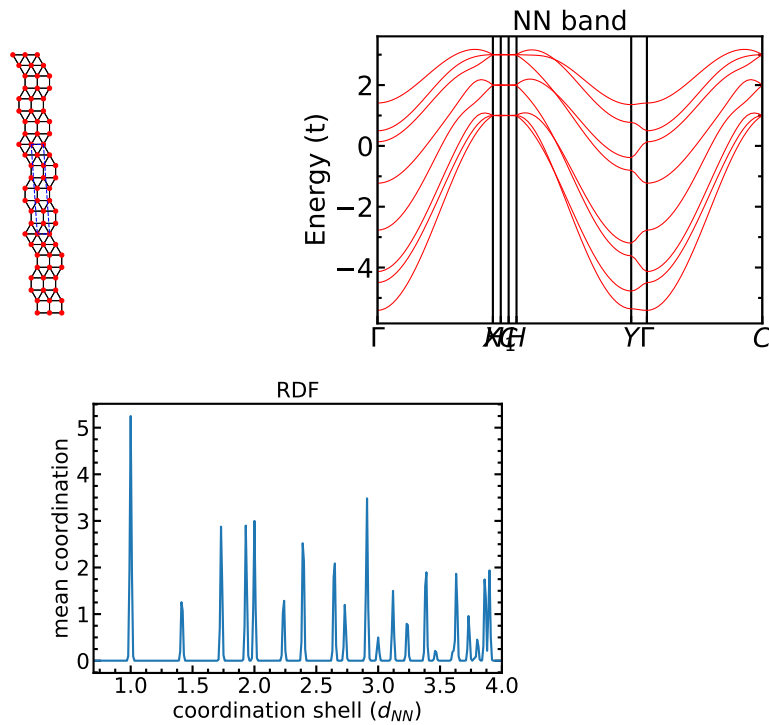| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	0	0	0	6	0	0	0	0

FIG. S134.   t4134 lattice framework, nearest neighbors band structure and radial distribution function.

t4135

Tiling reference number t4135 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S135. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S135.

TABLE S135.   Tiling t4135 vertex types

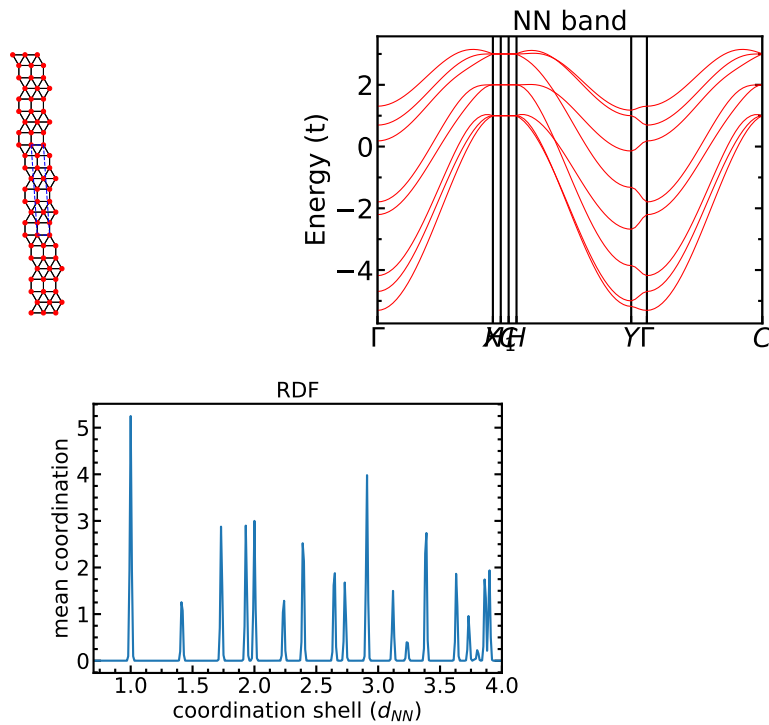| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	0	0	0	6	0	0	0	0

FIG. S135.   t4135 lattice framework, nearest neighbors band structure and radial distribution function.

t4136

Tiling reference number t4136 with space-group $'Pmmm'$ (47) and 7 sites in the unit cell, with vertex type indicated in Tab. S136. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S136.

TABLE S136.   Tiling t4136 vertex types

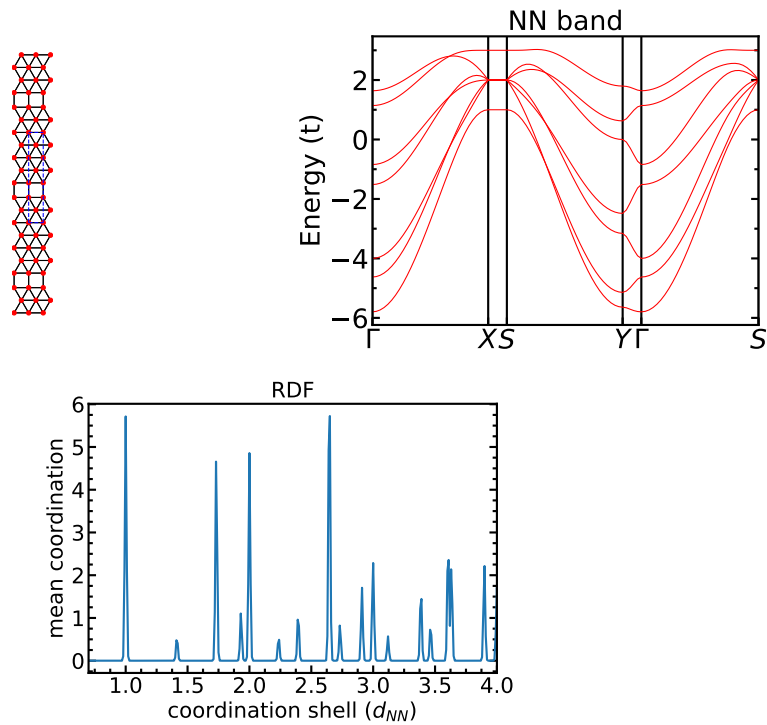| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	0	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S136.   t4136 lattice framework, nearest neighbors band structure and radial distribution function.

t4137

Tiling reference number t4137 with space-group $'Cmmm'$ (65) and 8 sites in the unit cell, with vertex type indicated in Tab. S137. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S137.

TABLE S137.   Tiling t4137 vertex types

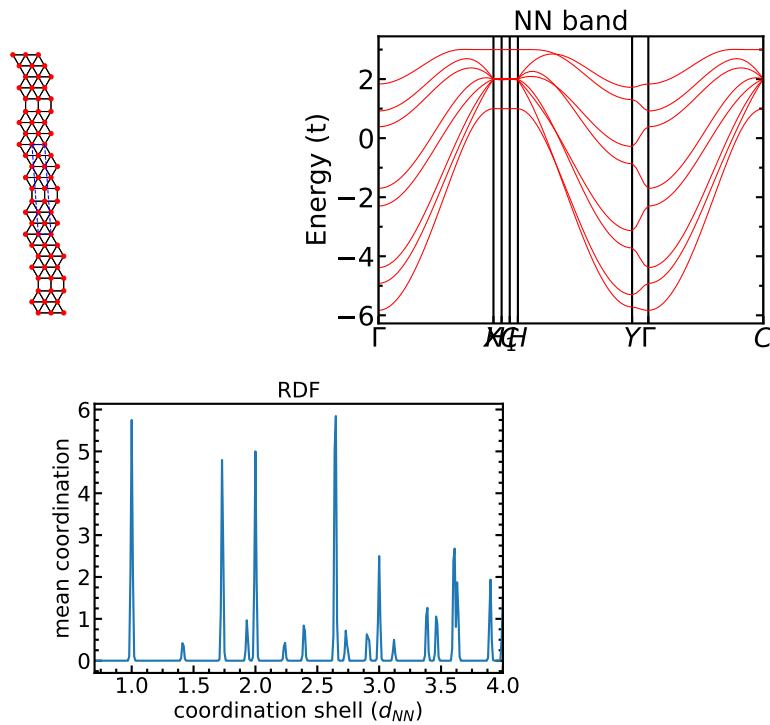| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
6	0	0	0	0	0	0	0	0	0	2	0	0	0	0

FIG. S137.   t4137 lattice framework, nearest neighbors band structure and radial distribution function.

t4138

Tiling reference number t4138 with space-group $'Amm2'$ (38) and 21 sites in the unit cell, with vertex type indicated in Tab. S138. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S138.

TABLE S138.   Tiling t4138 vertex types

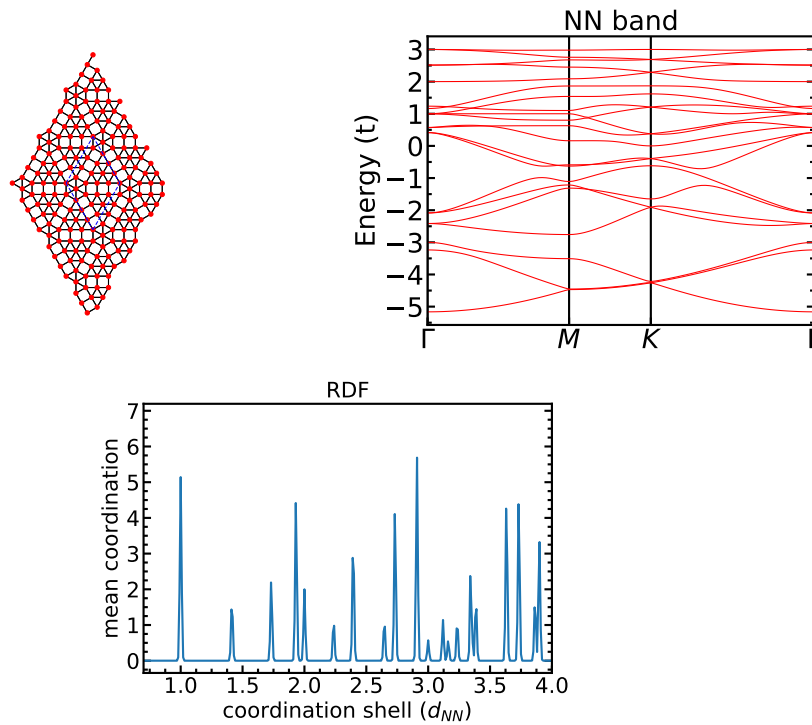| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	0	0	0	0	0	0	0	0	6	12	0	0	0	0

FIG. S138.   t4138 lattice framework, nearest neighbors band structure and radial distribution function.

t4139

Tiling reference number t4139 with space-group $'Cmmm'$ (65) and 7 sites in the unit cell, with vertex type indicated in Tab. S139. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S139.

TABLE S139. Tiling t4139 vertex types

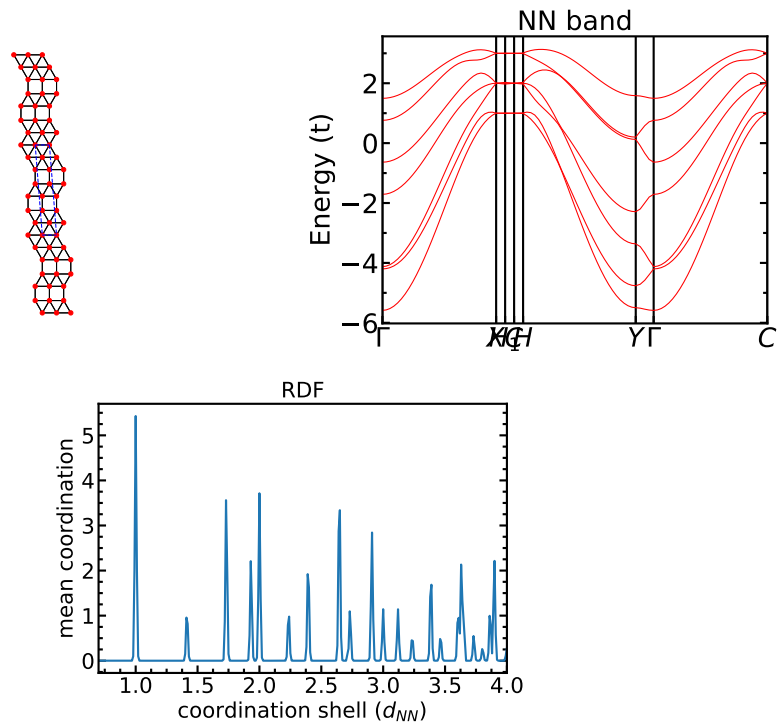| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	0	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S139. t4139 lattice framework, nearest neighbors band structure and radial distribution function.

t4140

Tiling reference number t4140 with space-group $'Pmma'$ (51) and 8 sites in the unit cell, with vertex type indicated in Tab. S140. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S140.

TABLE S140. Tiling t4140 vertex types

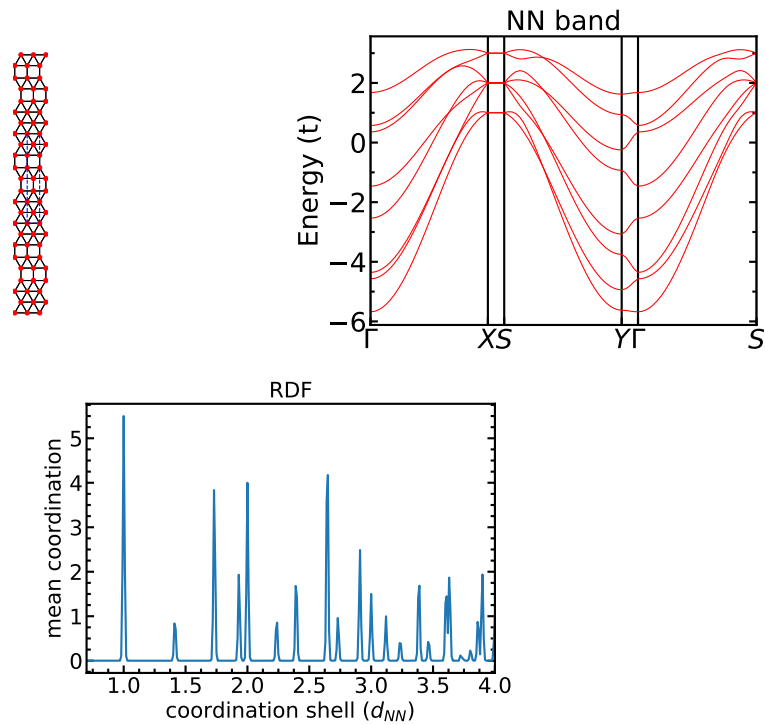| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
4	0	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S140.   t4140 lattice framework, nearest neighbors band structure and radial distribution function.

t4141

Tiling reference number t4141 with space-group $'Amm2'$ (38) and 7 sites in the unit cell, with vertex type indicated in Tab. S141. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S141.

TABLE S141.　Tiling t4141 vertex types

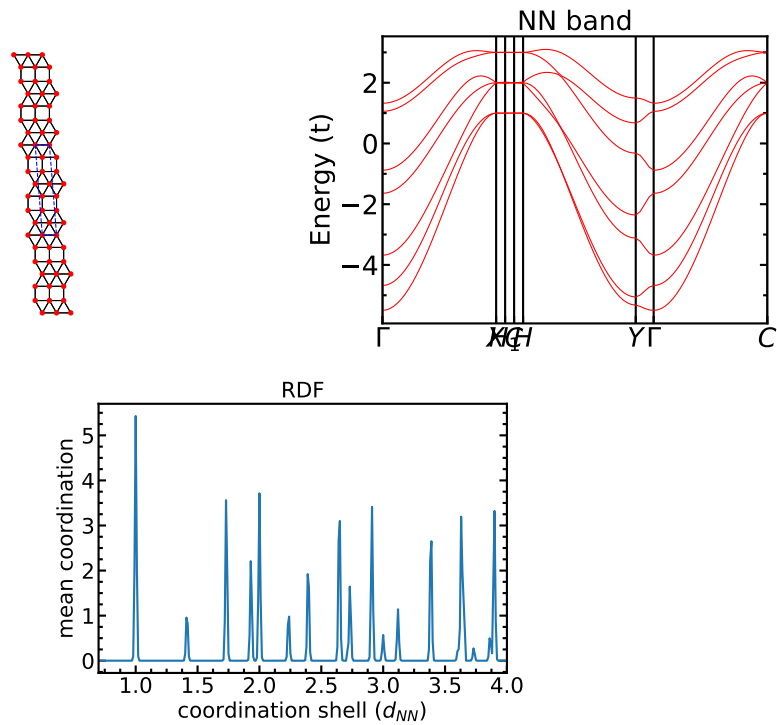| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
3	0	0	0	0	0	0	0	0	0	4	0	0	0	0

FIG. S141.　t4141 lattice framework, nearest neighbors band structure and radial distribution function.

t4142

Tiling reference number t4142 with space-group $'Pmc2'_1$ (26) and 16 sites in the unit cell, with vertex type indicated in Tab. S142. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S142.

TABLE S142.   Tiling t4142 vertex types

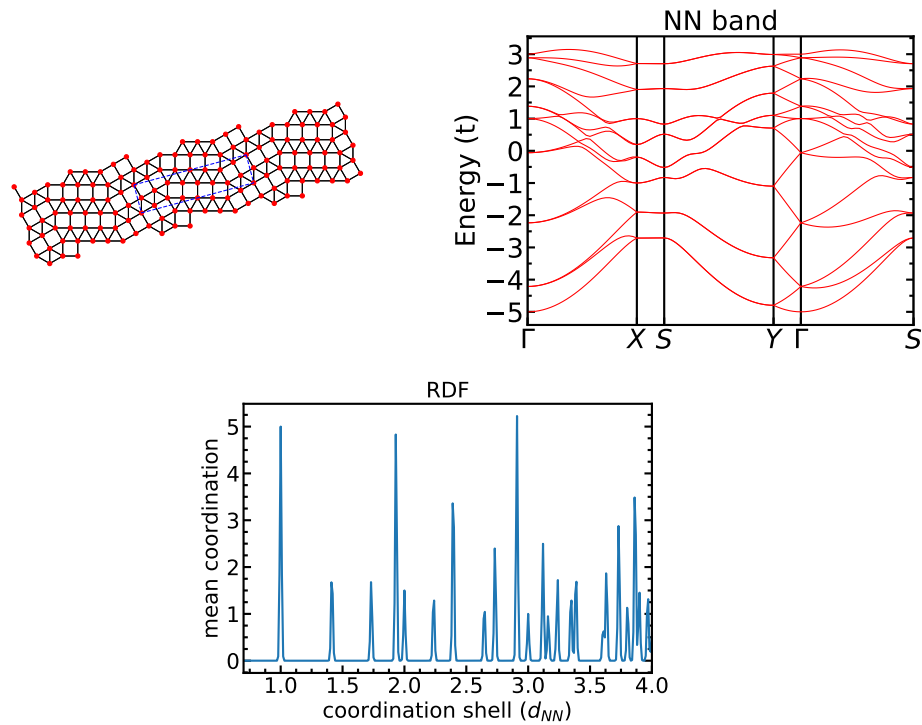| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	0	0	4	12	0	0	0	0

FIG. S142.   t4142 lattice framework, nearest neighbors band structure and radial distribution function.

143

t4143

Tiling reference number t4143 with space-group $'P2/m'$ (10) and 8 sites in the unit cell, with vertex type indicated in Tab. S143. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S143.

TABLE S143.   Tiling t4143 vertex types

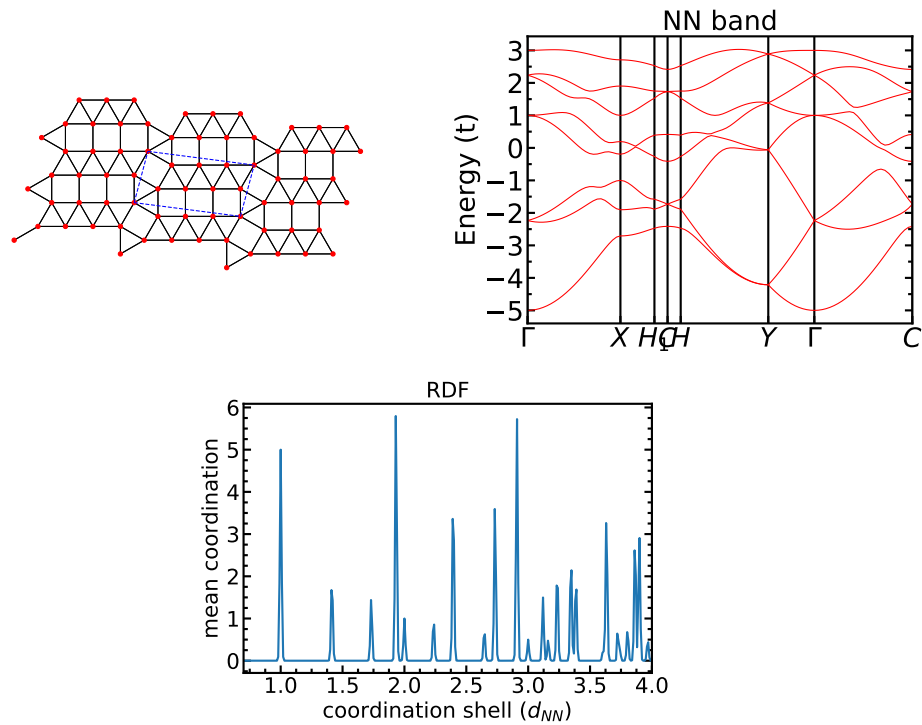| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	0	0	4	4	0	0	0	0

FIG. S143.   t4143 lattice framework, nearest neighbors band structure and radial distribution function.

144

t4144

Tiling reference number t4144 with space-group $'Pmc2'_1$ (26) and 16 sites in the unit cell, with vertex type indicated in Tab. S144. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S144.

TABLE S144.   Tiling t4144 vertex types

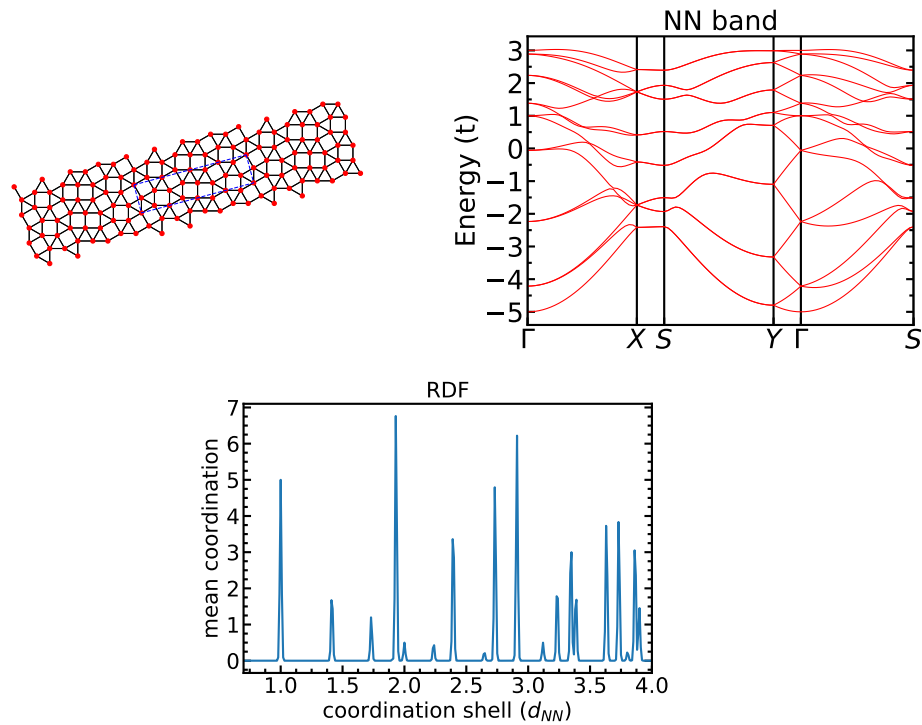| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
0	0	0	0	0	0	0	0	0	12	4	0	0	0	0

FIG. S144.   t4144 lattice framework, nearest neighbors band structure and radial distribution function.

145

t4145

Tiling reference number t4145 with space-group $'Cmmm'$ (65) and 9 sites in the unit cell, with vertex type indicated in Tab. S145. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S145.

TABLE S145. Tiling t4145 vertex types

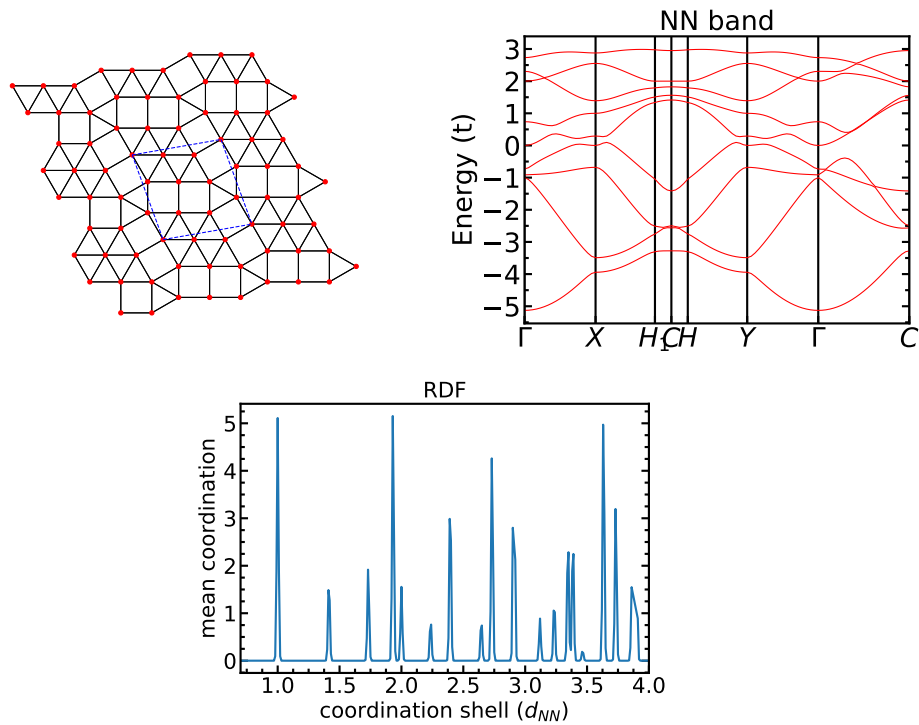| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	0	0	0	4	4	0	0	0	0

FIG. S145. t4145 lattice framework, nearest neighbors band structure and radial distribution function.

146

t4146

Tiling reference number t4146 with space-group $'Pm'$ (6) and 19 sites in the unit cell, with vertex type indicated in Tab. S146. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S146.

TABLE S146. Tiling t4146 vertex types

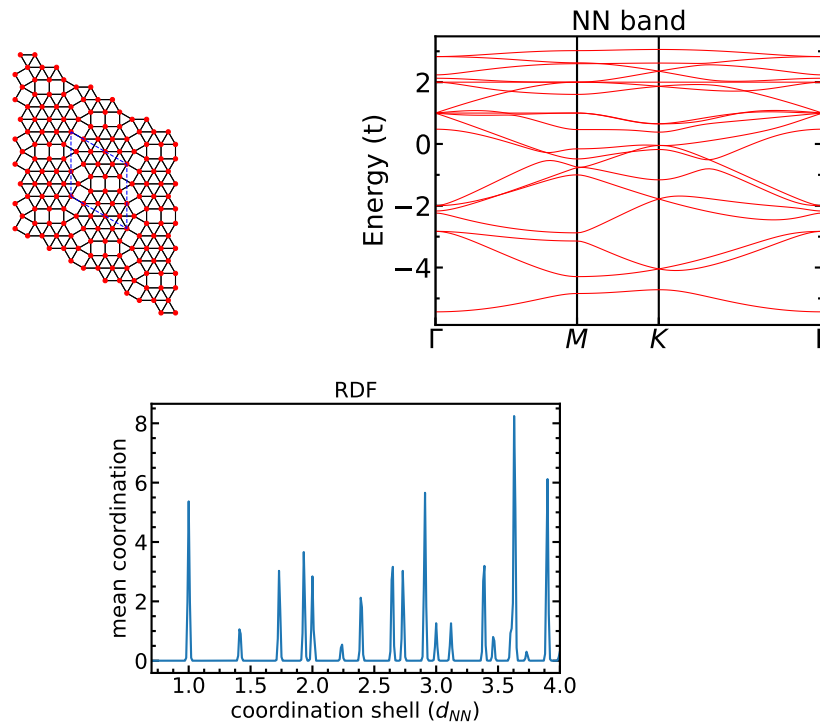| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
7	0	0	0	0	0	0	0	0	6	6	0	0	0	0

FIG. S146. t4146 lattice framework, nearest neighbors band structure and radial distribution function.

t4147

Tiling reference number t4147 with space-group $'Pm'$ (6) and 10 sites in the unit cell, with vertex type indicated in Tab. S147. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S147.

TABLE S147. Tiling t4147 vertex types

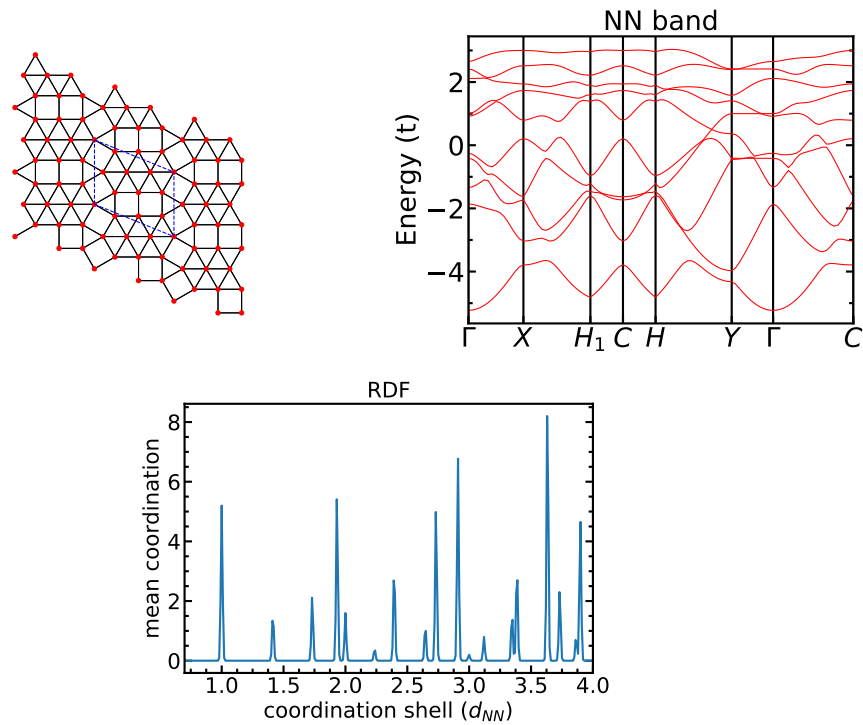| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	0	0	6	2	0	0	0	0

FIG. S147. t4147 lattice framework, nearest neighbors band structure and radial distribution function.

t4148

Tiling reference number t4148 with space-group $'P6/m'$ (175) and 20 sites in the unit cell, with vertex type indicated in Tab. S148. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S148.

TABLE S148.   Tiling t4148 vertex types

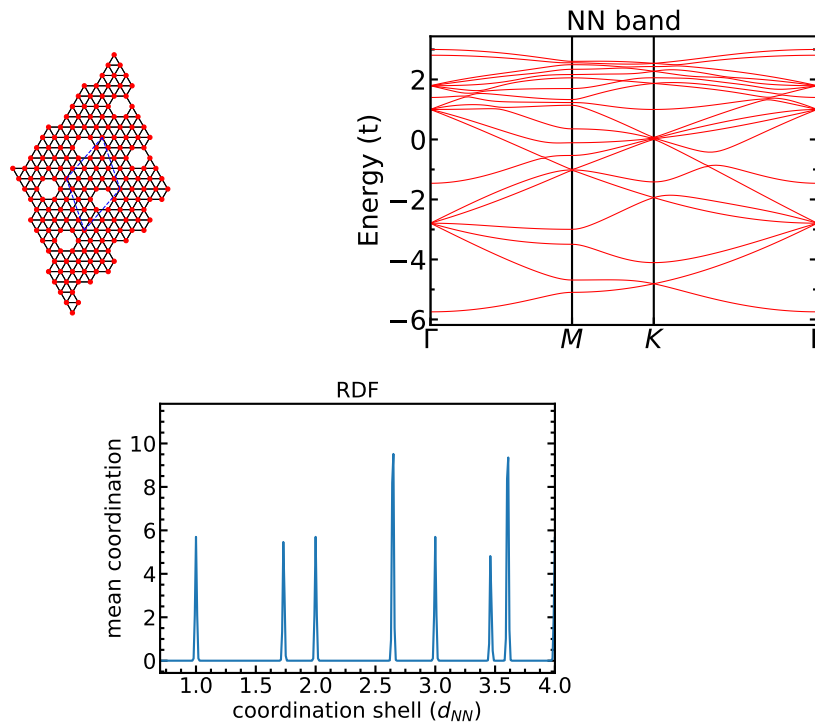| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
14	0	0	0	0	0	0	0	6	0	0	0	0	0	0

FIG. S148.   t4148 lattice framework, nearest neighbors band structure and radial distribution function.

t4149

Tiling reference number t4149 with space-group $'P6/mmm'$ (191) and 24 sites in the unit cell, with vertex type indicated in Tab. S149. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S149.

TABLE S149.   Tiling t4149 vertex types

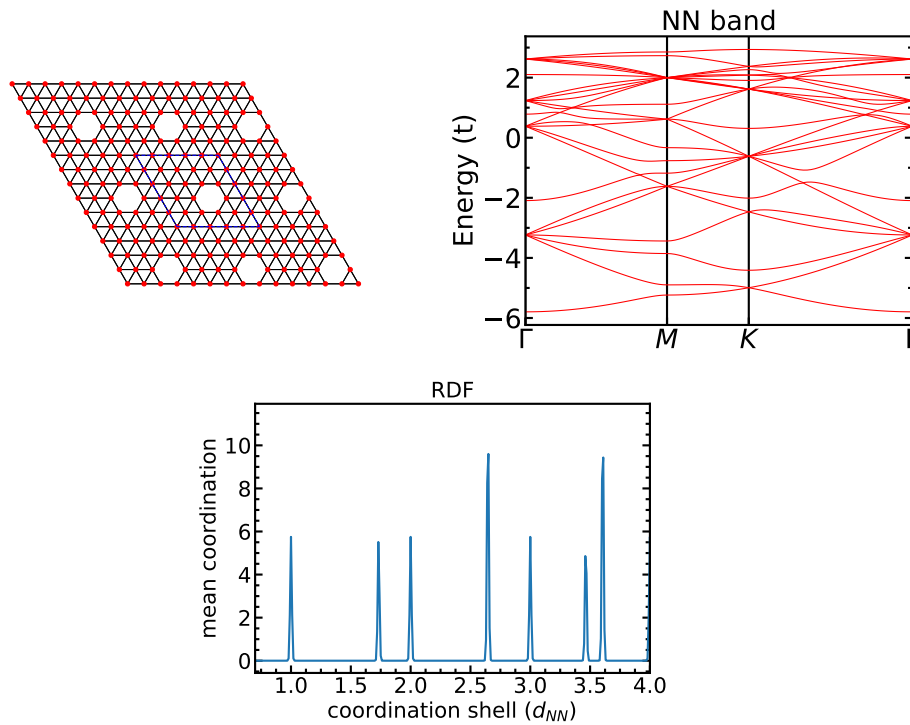| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
18	0	0	0	0	0	0	0	6	0	0	0	0	0	0

FIG. S149.   t4149 lattice framework, nearest neighbors band structure and radial distribution function.

t4150

Tiling reference number t4150 with space-group $'P6/m'$ (175) and 19 sites in the unit cell, with vertex type indicated in Tab. S150. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S150.

TABLE S150. Tiling t4150 vertex types

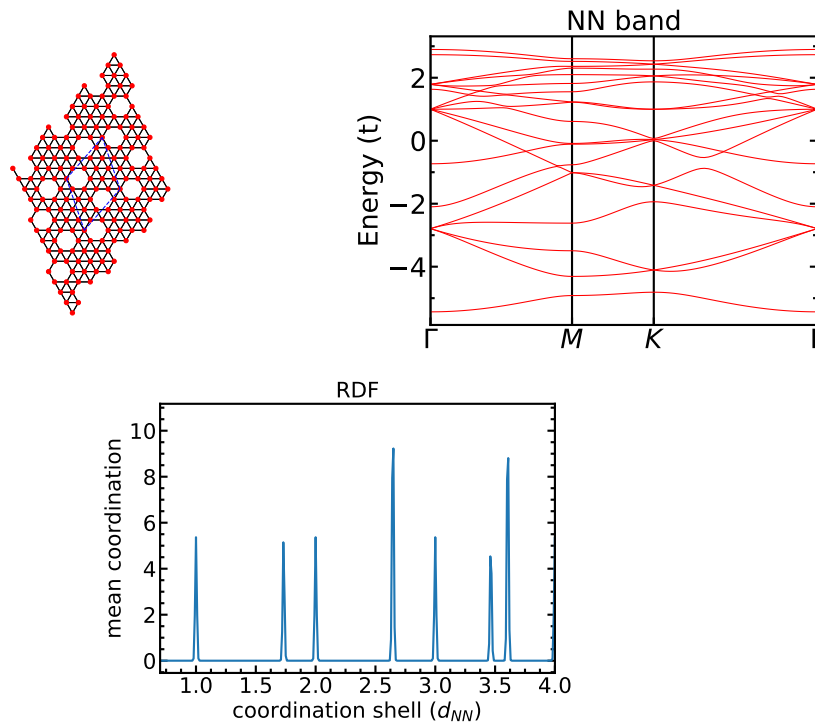| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
7	0	0	0	0	0	0	0	12	0	0	0	0	0	0

FIG. S150.   t4150 lattice framework, nearest neighbors band structure and radial distribution function.

t4151

Tiling reference number t4151 with space-group $'P2/m'$ (10) and 8 sites in the unit cell, with vertex type indicated in Tab. S151. The respective lattice structure, nearest neighbors band structure, and radial distribution function is shown in Fig S151.

TABLE S151. Tiling t4151 vertex types

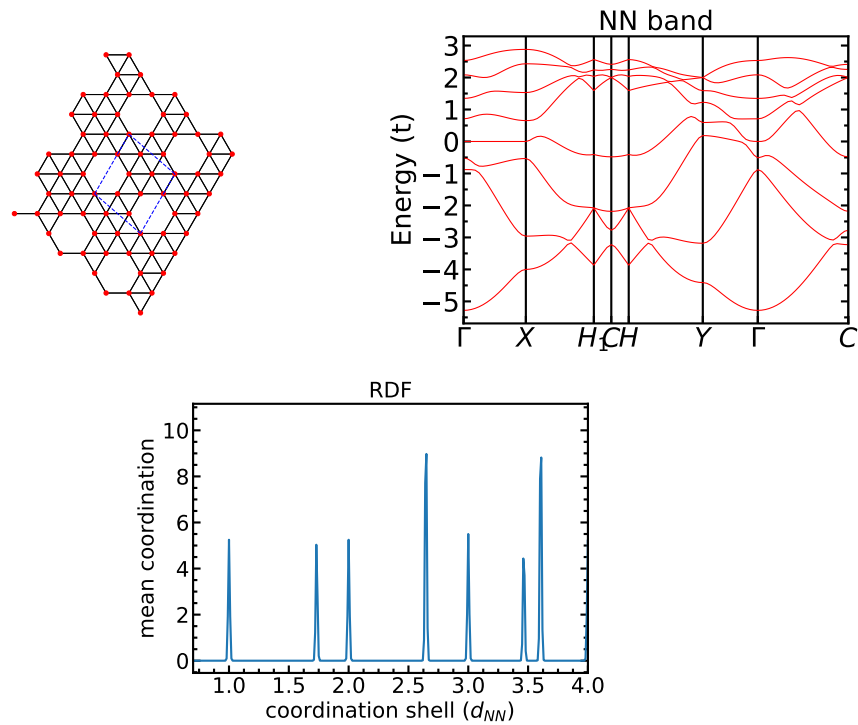| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	0	0	0	0	0	0	0	6	0	0	0	0	0	0

FIG. S151.   t4151 lattice framework, nearest neighbors band structure and radial distribution function.

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