

Emergent quasiparticles in Euclidean tiling

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(Dated: February 9, 2021)

Abstract

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$k = 3$ LATTICES

t3001

Tiling reference number t3001 with space-group ' $P6/mmm'$ ' (191) and 18 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 t3001 vertex types

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

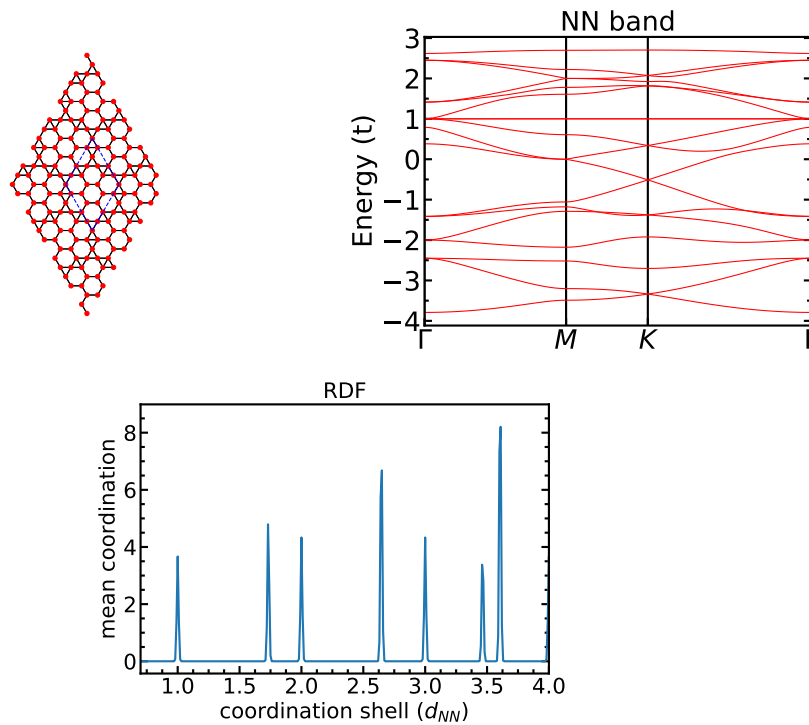


FIG. S1. t3001 lattice framework, nearest neighbors band structure and radial distribution function.

t3002

Tiling reference number t3002 with space-group ' $Cmmm$ ' (65) and 5 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 t3002 vertex types

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

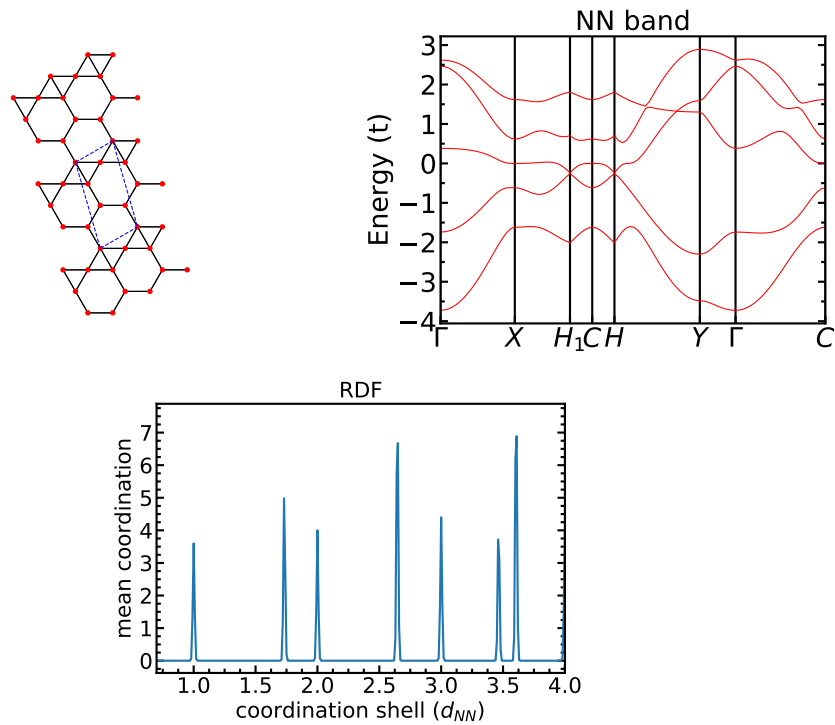


FIG. S2. t3002 lattice framework, nearest neighbors band structure and radial distribution function.

t3003

Tiling reference number t3003 with space-group ' $Pmma'$ ' (51) and 6 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 t3003 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	2	0	0	0	0	0	2

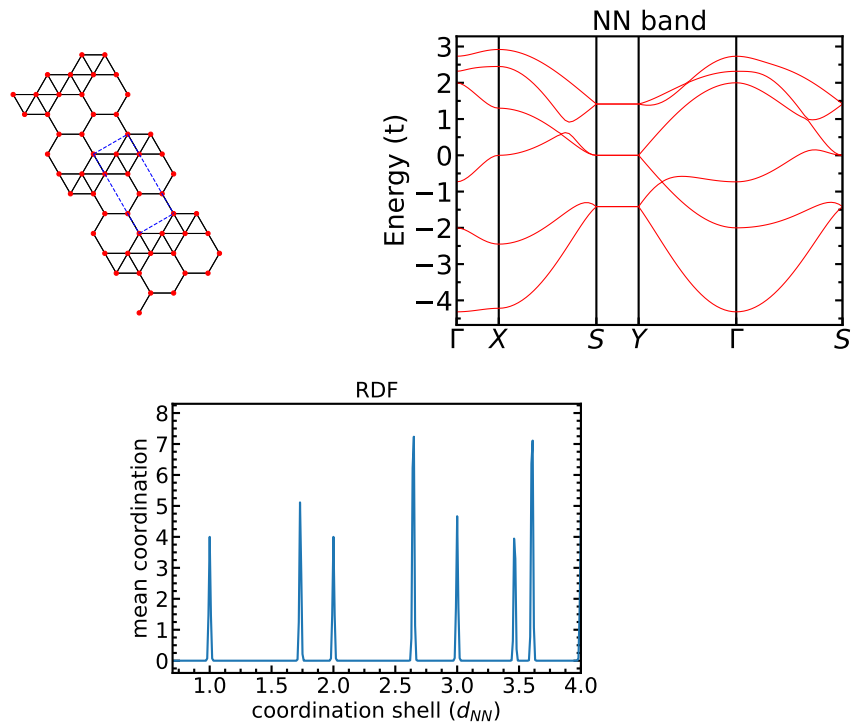


FIG. S3. t3003 lattice framework, nearest neighbors band structure and radial distribution function.

t3004

Tiling reference number t3004 with space-group ' $P6/mmm'$ ' (191) and 9 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 t3004 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

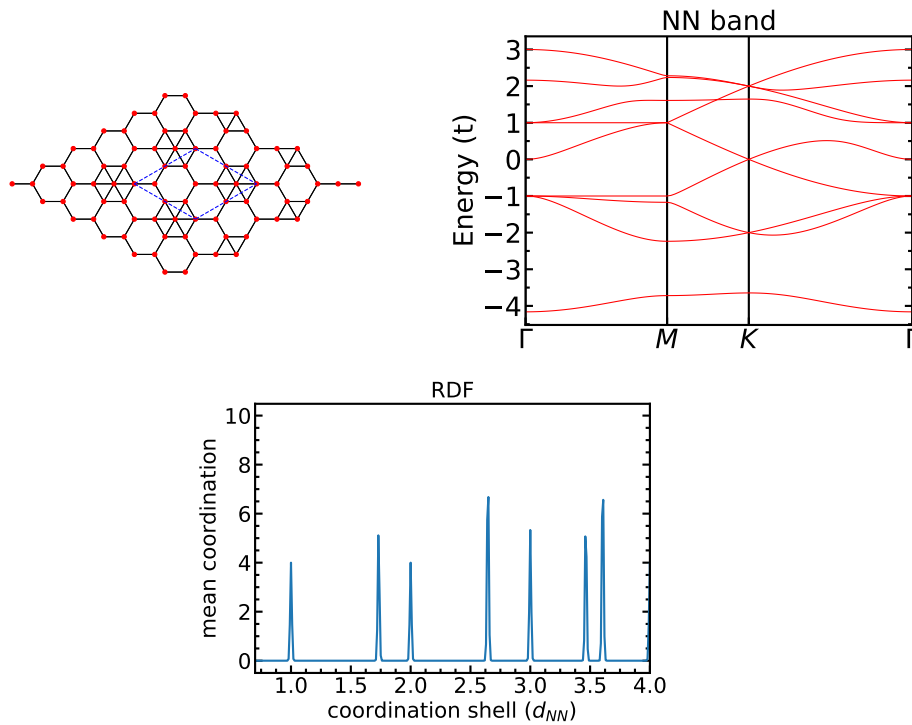


FIG. S4. t3004 lattice framework, nearest neighbors band structure and radial distribution function.

t3005

Tiling reference number t3005 with space-group ' $Amm2'$ ' (38) and 30 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 t3005 vertex types

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

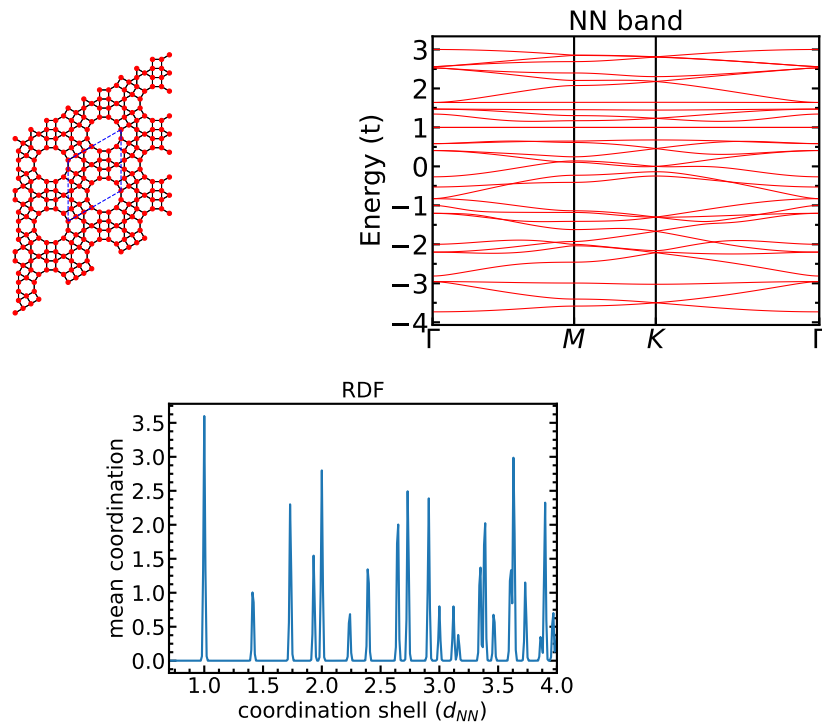


FIG. S5. t3005 lattice framework, nearest neighbors band structure and radial distribution function.

t3006

Tiling reference number t3006 with space-group ' $Amm2'$ ' (38) and 13 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 t3006 vertex types

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

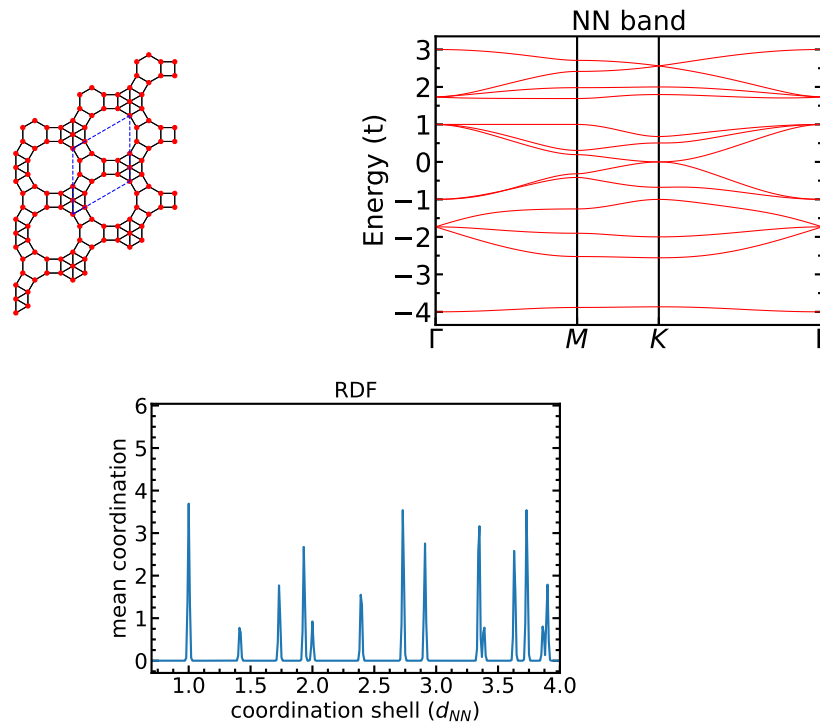


FIG. S6. t3006 lattice framework, nearest neighbors band structure and radial distribution function.

t3007

Tiling reference number t3007 with space-group ' $P2/m'$ ' (10) and 24 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 t3007 vertex types

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

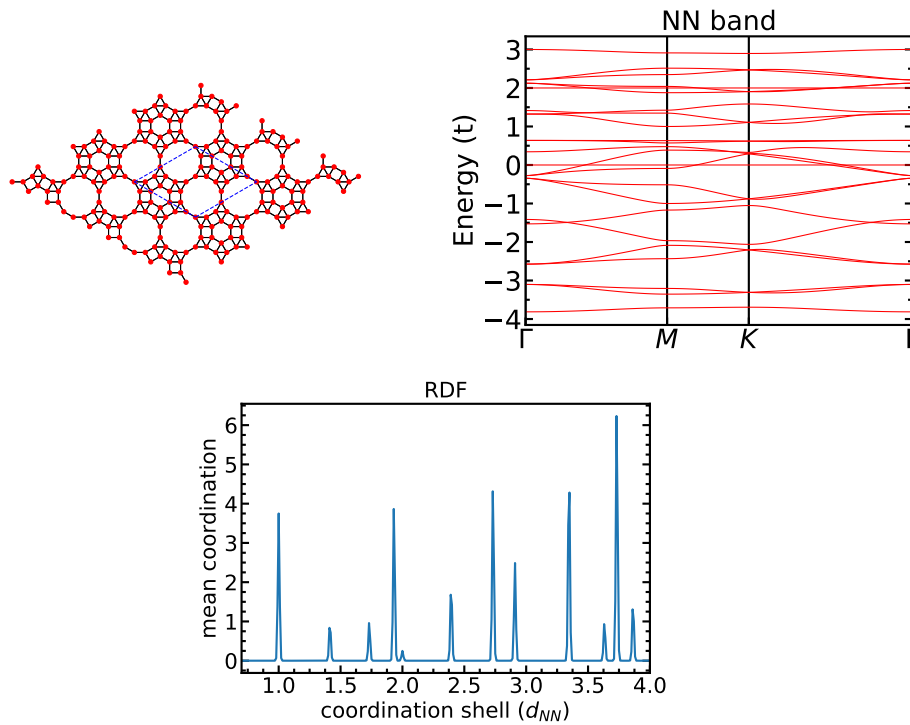


FIG. S7. t3007 lattice framework, nearest neighbors band structure and radial distribution function.

t3008

Tiling reference number t3008 with space-group ' $P - 62m'$ ' (189) and 24 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 t3008 vertex types

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

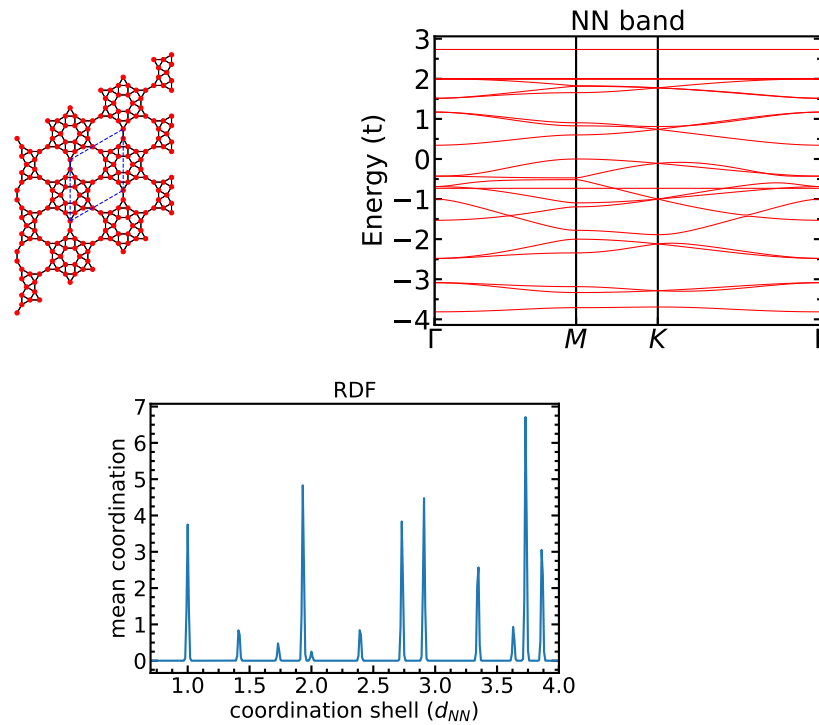


FIG. S8. t3008 lattice framework, nearest neighbors band structure and radial distribution function.

t3009

Tiling reference number t3009 with space-group ' $P2/m'$ ' (10) and 10 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 t3009 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	0	4	4	0	0

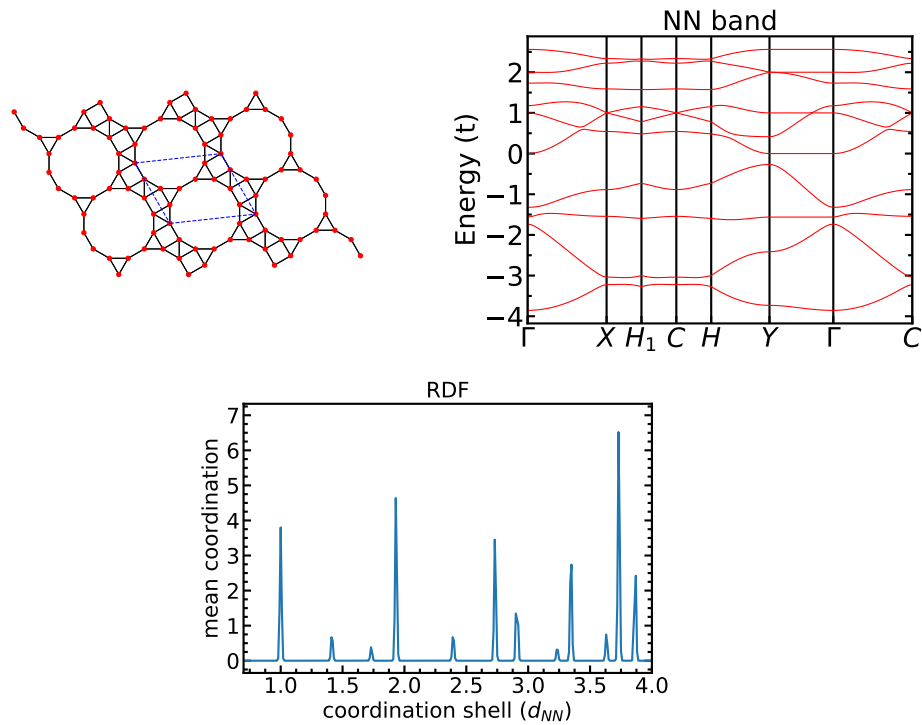


FIG. S9. t3009 lattice framework, nearest neighbors band structure and radial distribution function.

t3010

Tiling reference number t3010 with space-group ' $Cmmm$ ' (65) and 6 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 t3010 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	2	0	0	0	0

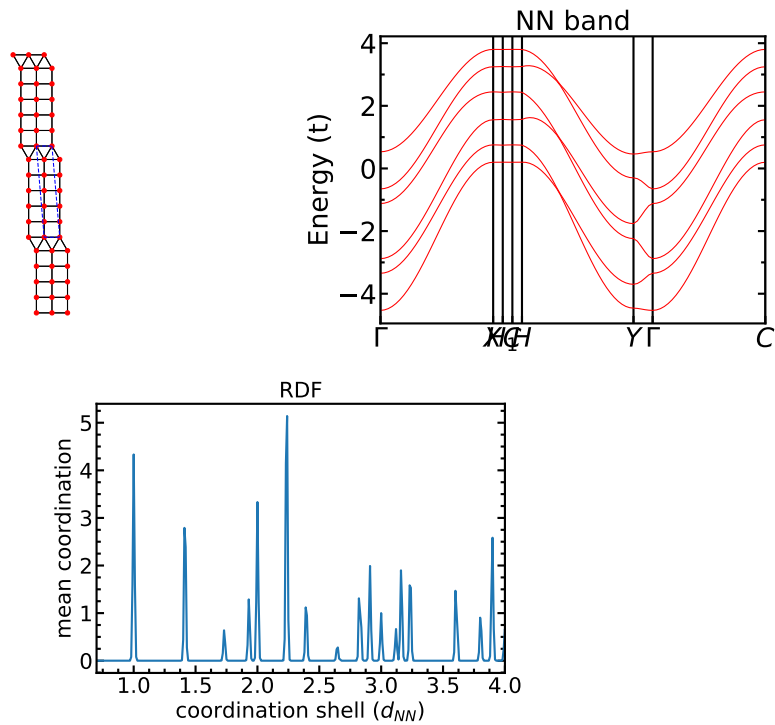


FIG. S10. t3010 lattice framework, nearest neighbors band structure and radial distribution function.

t3011

Tiling reference number t3011 with space-group ' $Cmmm$ ' (65) and 9 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 t3011 vertex types

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

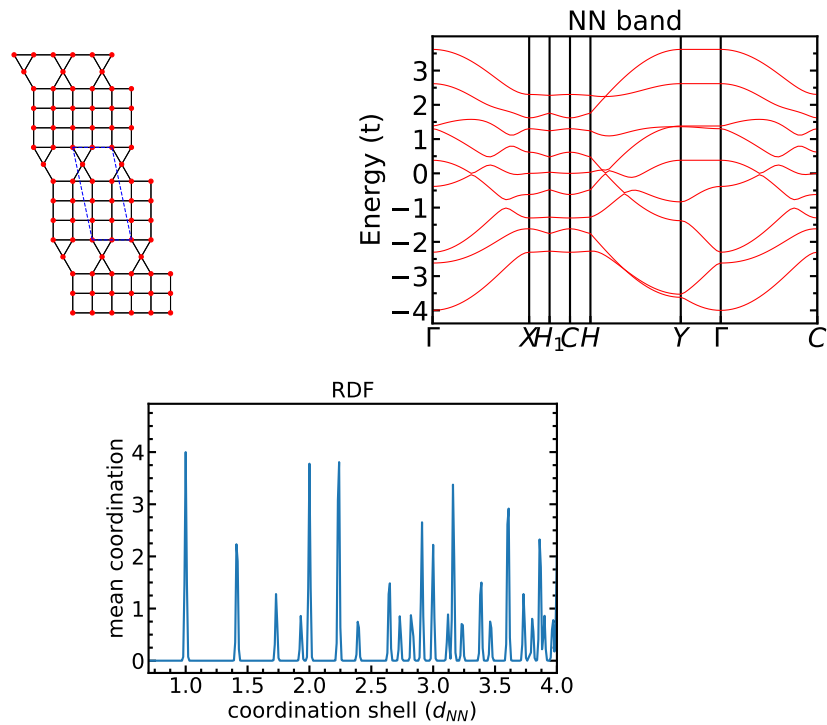


FIG. S11. t3011 lattice framework, nearest neighbors band structure and radial distribution function.

t3012

Tiling reference number t3012 with space-group ' $Pmmm'$ ' (47) and 9 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 t3012 vertex types

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

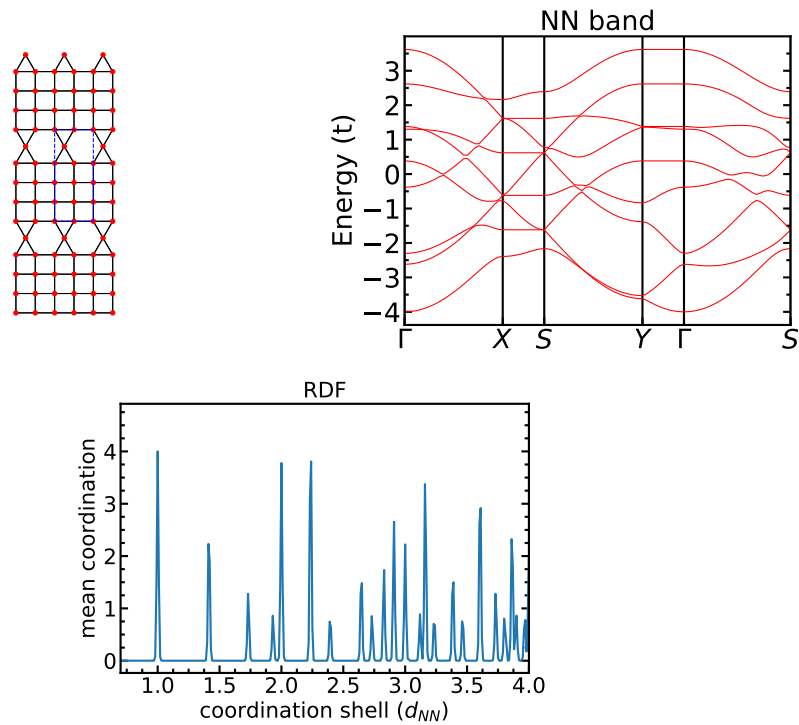


FIG. S12. t3012 lattice framework, nearest neighbors band structure and radial distribution function.

t3013

Tiling reference number t3013 with space-group ' $Pmmm'$ ' (47) and 6 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 t3013 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	4	0	0	0	0

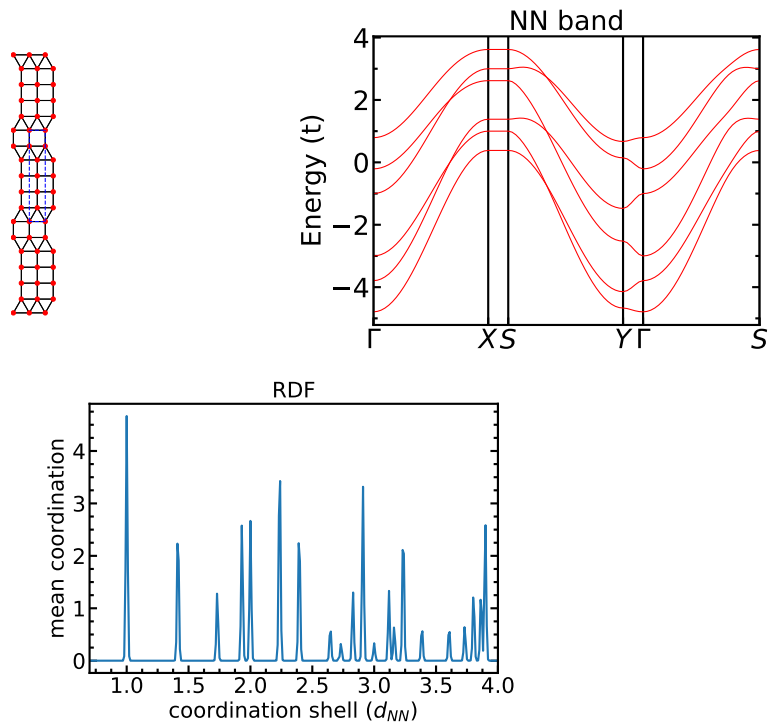


FIG. S13. t3013 lattice framework, nearest neighbors band structure and radial distribution function.

t3014

Tiling reference number t3014 with space-group ' $Pmmm'$ ' (47) and 5 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 t3014 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	2	0	0	0	0

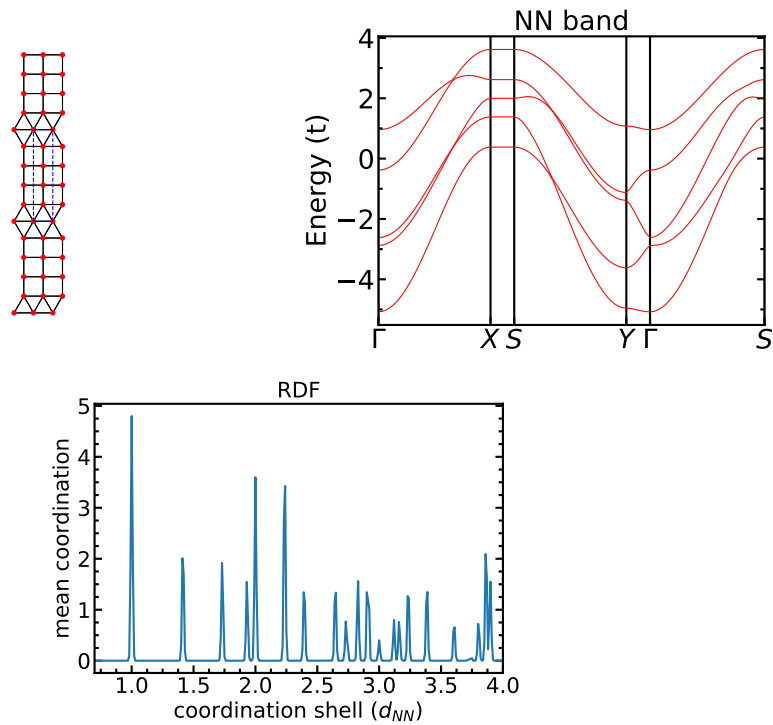


FIG. S14. t3014 lattice framework, nearest neighbors band structure and radial distribution function.

t3015

Tiling reference number t3015 with space-group ' $Cmmm'$ ' (65) and 6 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 t3015 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	2	0	0	0	0

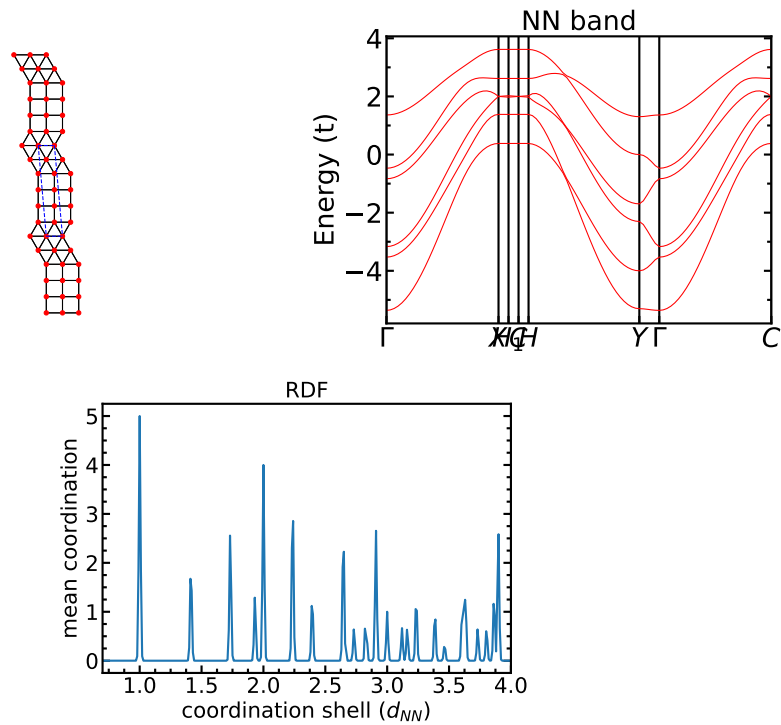


FIG. S15. t3015 lattice framework, nearest neighbors band structure and radial distribution function.

t3016

Tiling reference number t3016 with space-group ' $Cmmm$ ' (65) and 5 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 t3016 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	2	0	0	0	0

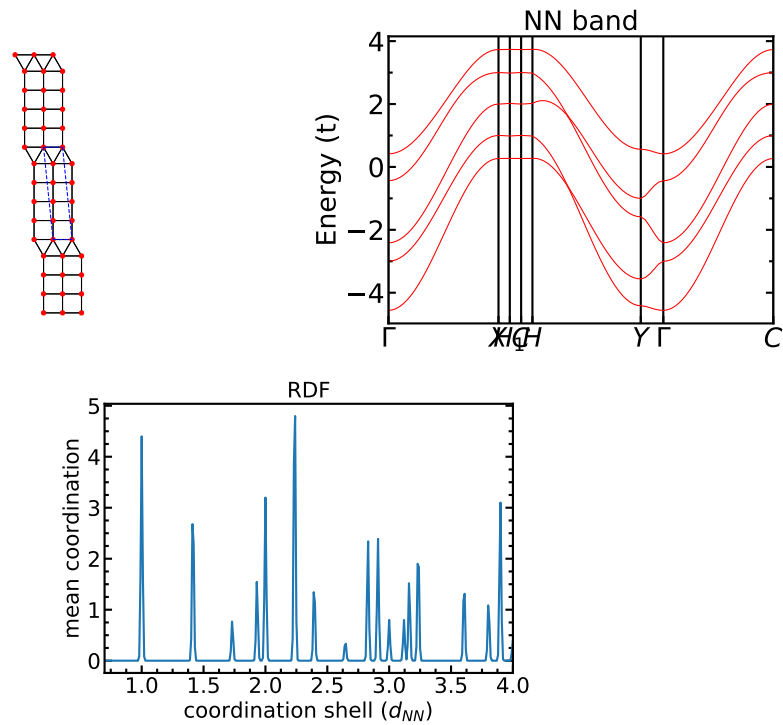


FIG. S16. t3016 lattice framework, nearest neighbors band structure and radial distribution function.

t3017

Tiling reference number t3017 with space-group ' $Cmmm$ ' (65) and 7 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 t3017 vertex types

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

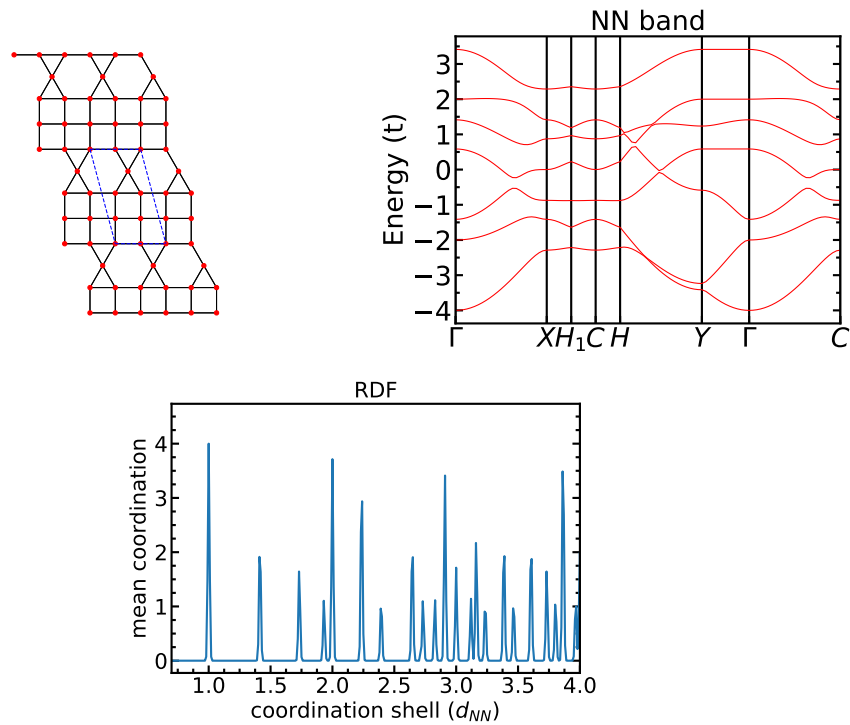


FIG. S17. t3017 lattice framework, nearest neighbors band structure and radial distribution function.

t3018

Tiling reference number t3018 with space-group ' $Pmm2'$ ' (25) and 7 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 t3018 vertex types

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

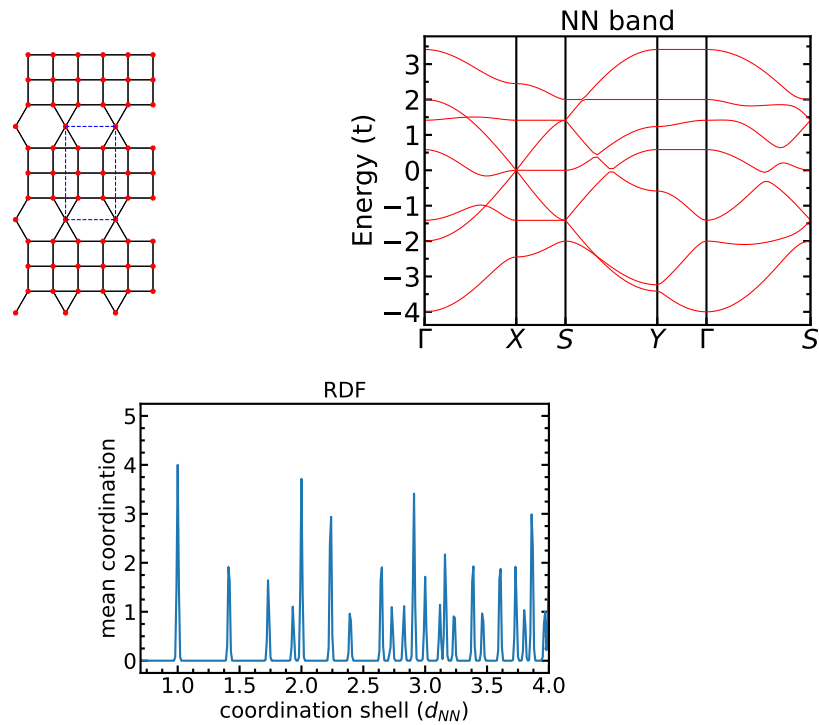


FIG. S18. t3018 lattice framework, nearest neighbors band structure and radial distribution function.

t3019

Tiling reference number t3019 with space-group ' $Pmmm'$ ' (47) and 5 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 t3019 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	0	0	0	0

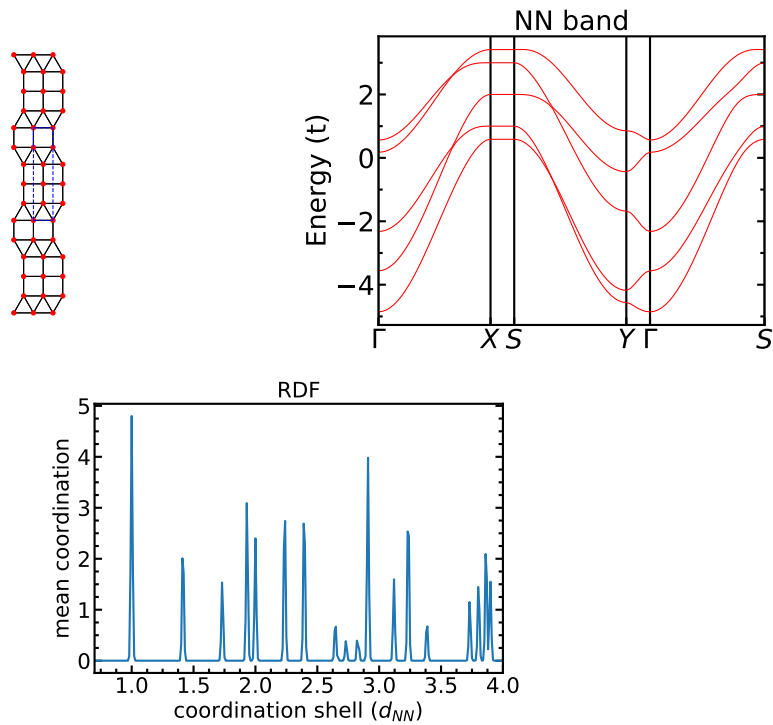


FIG. S19. t3019 lattice framework, nearest neighbors band structure and radial distribution function.

t3020

Tiling reference number t3020 with space-group ' $Pmm2'$ ' (25) and 4 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 t3020 vertex types

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

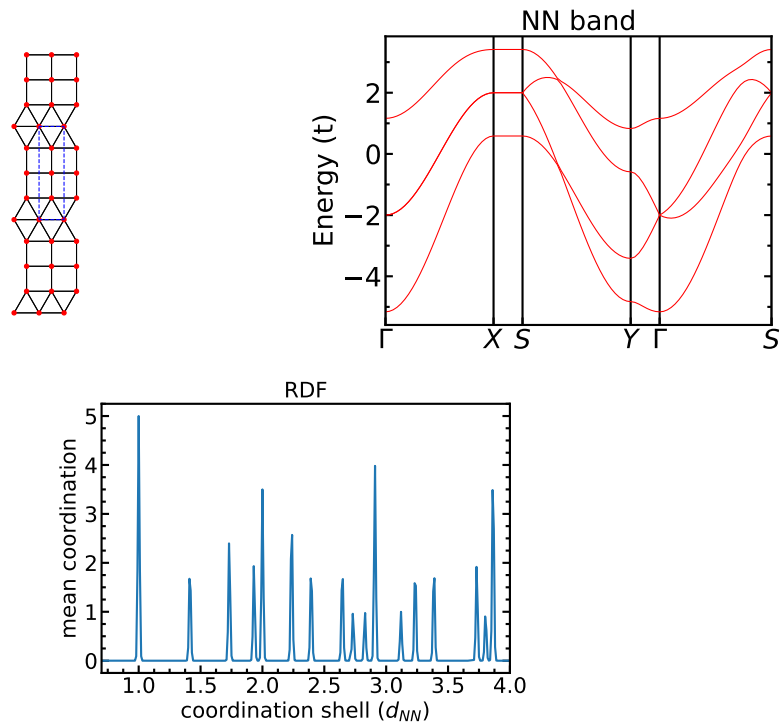


FIG. S20. t3020 lattice framework, nearest neighbors band structure and radial distribution function.

t3021

Tiling reference number t3021 with space-group ' $Cmmm$ ' (65) and 5 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 t3021 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	2	0	0	0	0

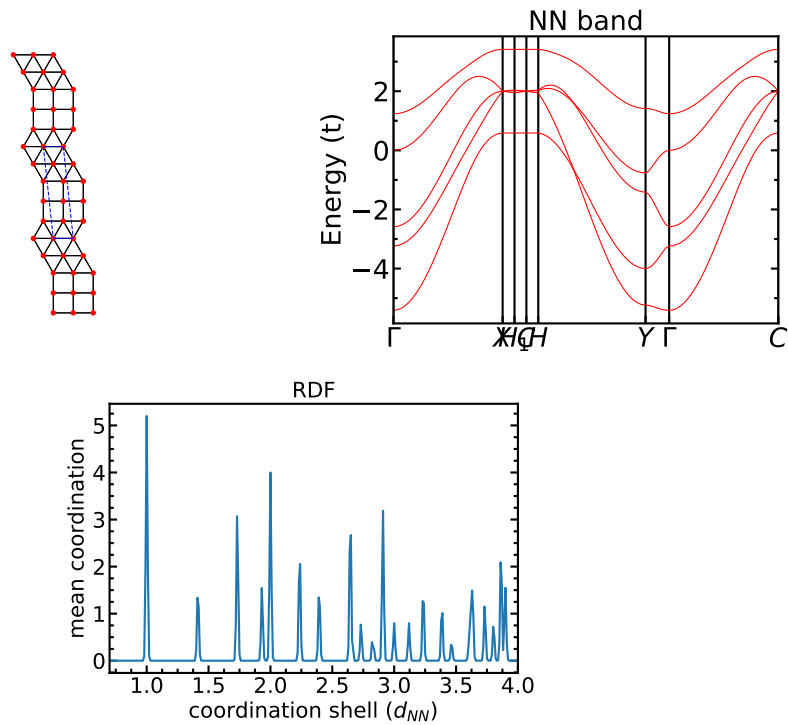


FIG. S21. t3021 lattice framework, nearest neighbors band structure and radial distribution function.

t3022

Tiling reference number t3022 with space-group ' $Amm2'$ ' (38) and 14 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 t3022 vertex types

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

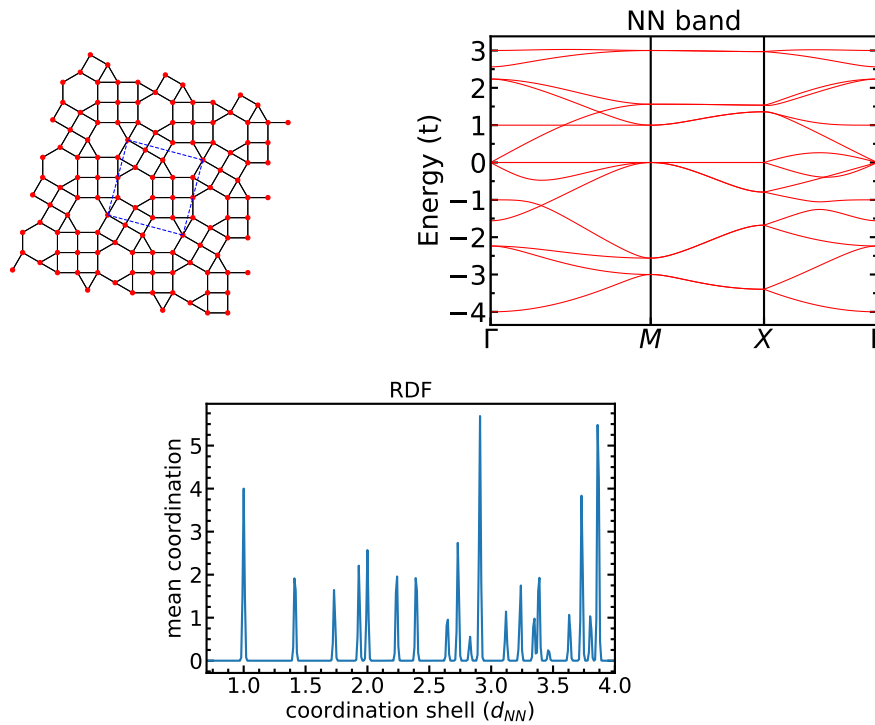


FIG. S22. t3022 lattice framework, nearest neighbors band structure and radial distribution function.

t3023

Tiling reference number t3023 with space-group ' $P4/m'$ ' (83) and 9 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 t3023 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	4	4	0	0	0	0

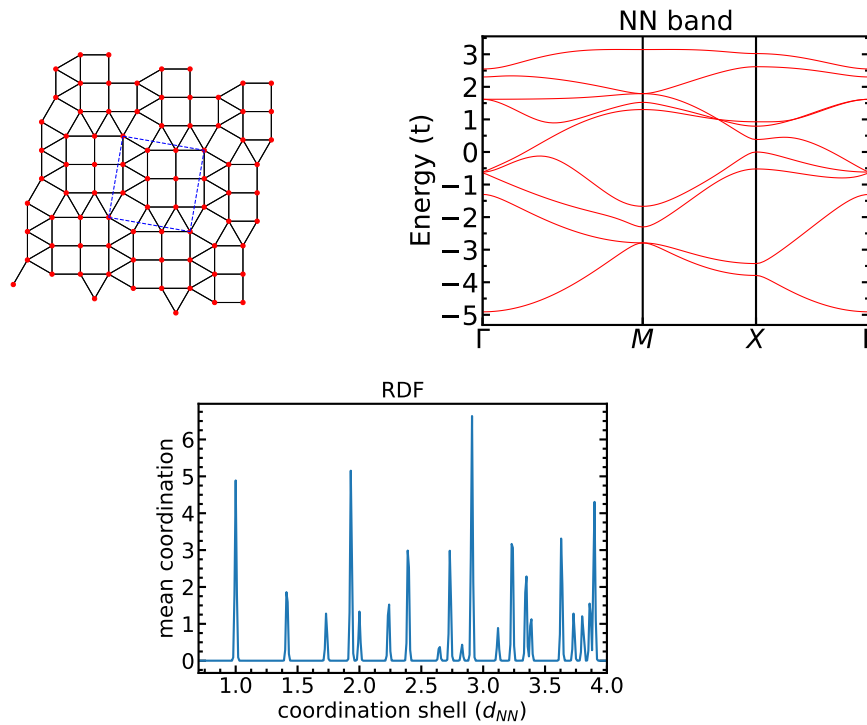


FIG. S23. t3023 lattice framework, nearest neighbors band structure and radial distribution function.

t3024

Tiling reference number t3024 with space-group ' $Amm2'$ ' (38) and 19 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 t3024 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	6	0	0	0	12	0

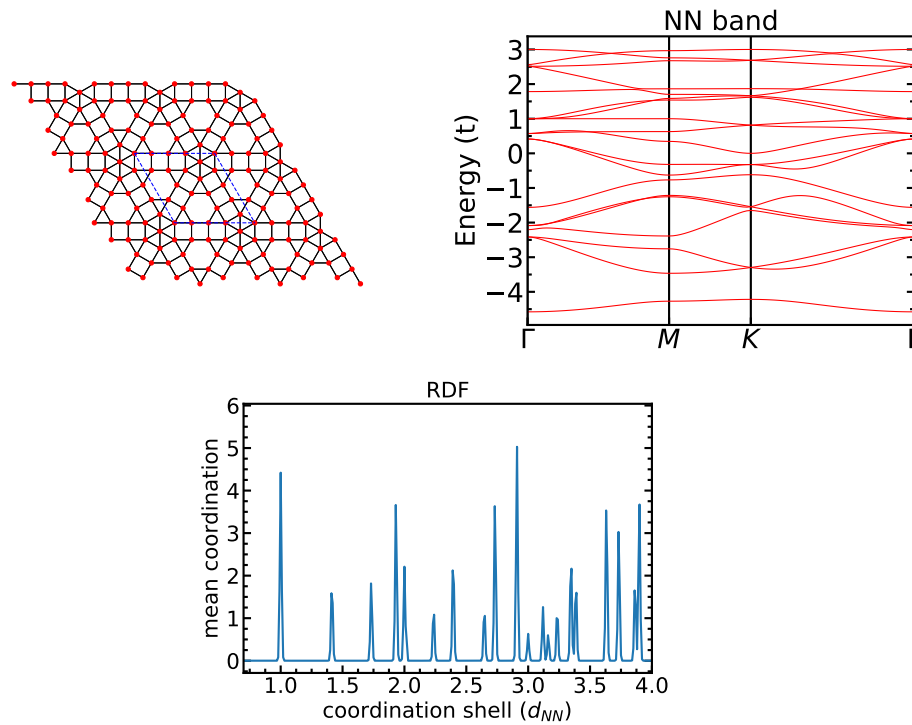


FIG. S24. t3024 lattice framework, nearest neighbors band structure and radial distribution function.

t3025

Tiling reference number t3025 with space-group ' Pm' ' (6) and 8 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 t3025 vertex types

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

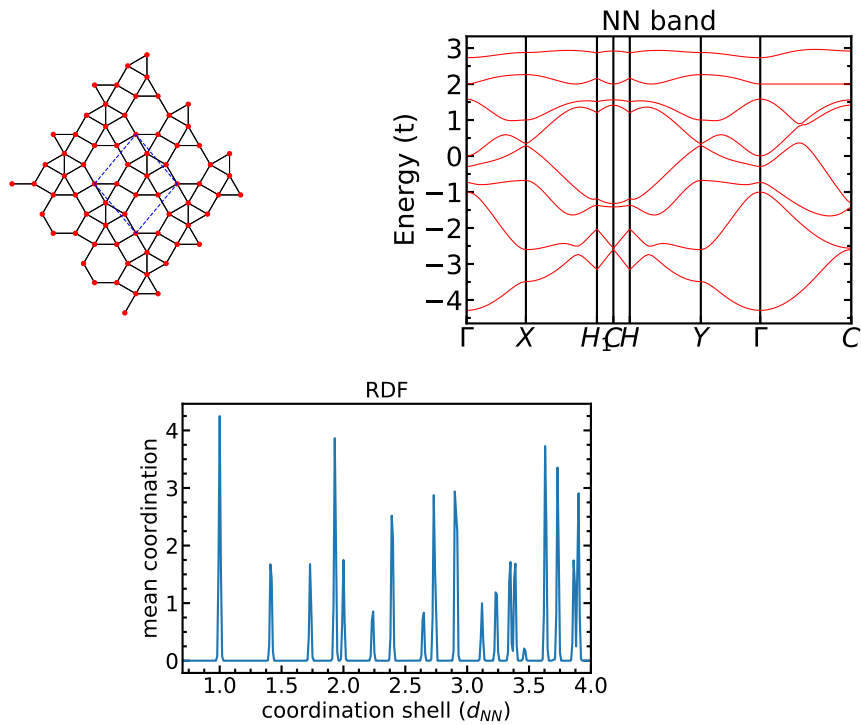


FIG. S25. t3025 lattice framework, nearest neighbors band structure and radial distribution function.

t3026

Tiling reference number t3026 with space-group ' $P - 6m2'$ ' (187) and 24 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 t3026 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	0	0	0	0	12	0

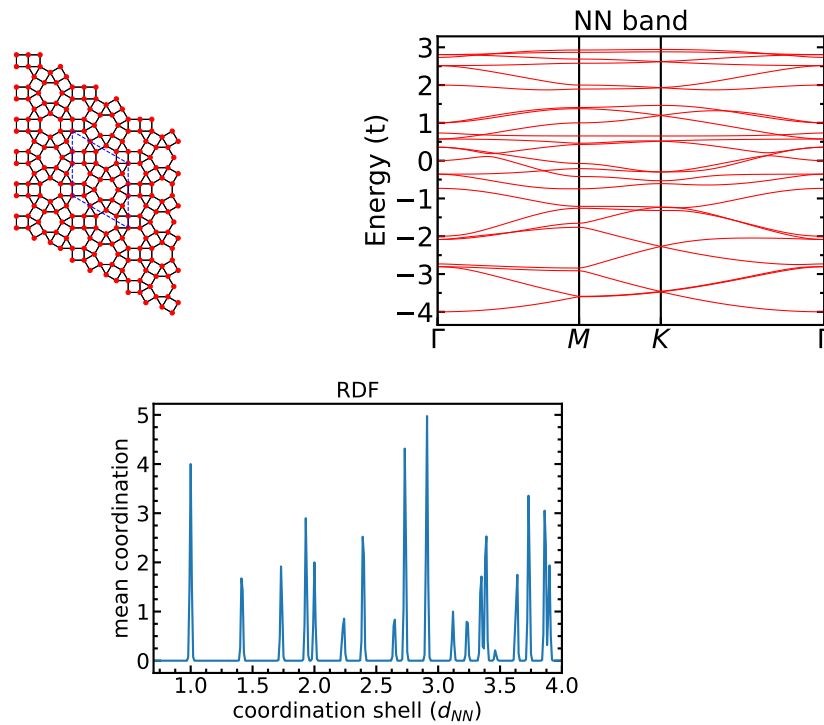


FIG. S26. t3026 lattice framework, nearest neighbors band structure and radial distribution function.

t3027

Tiling reference number t3027 with space-group ' $Amm2'$ ' (38) and 10 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 t3027 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	0	2	0	0	4	4

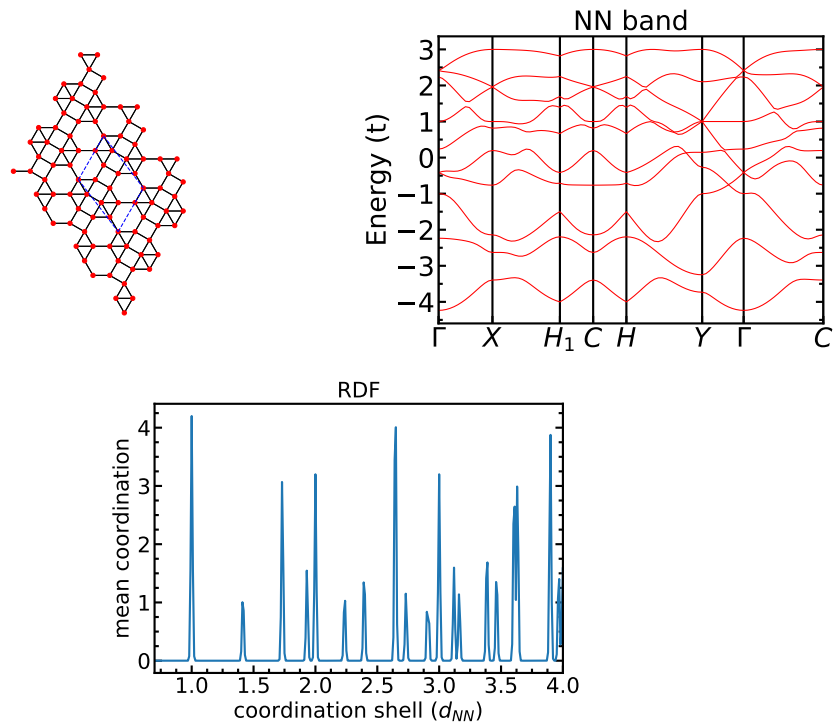


FIG. S27. t3027 lattice framework, nearest neighbors band structure and radial distribution function.

t3028

Tiling reference number t3028 with space-group ' $P2/m'$ ' (10) and 10 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 t3028 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	0	0	0	0	0	8	0

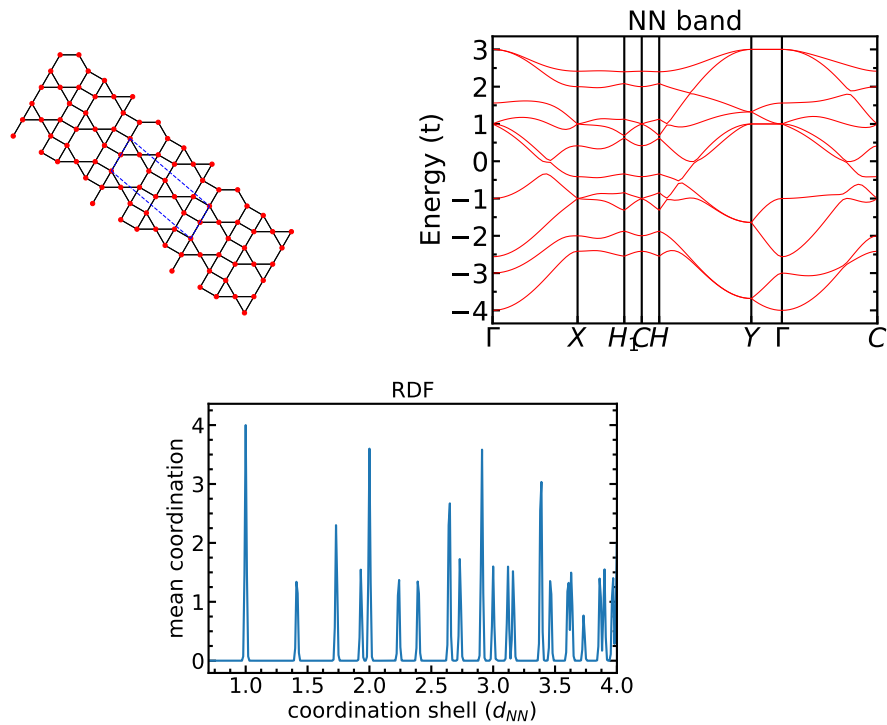


FIG. S28. t3028 lattice framework, nearest neighbors band structure and radial distribution function.

t3029

Tiling reference number t3029 with space-group $'P2/m'$ (10) and 8 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 t3029 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	0	0	0	0	0	4	2

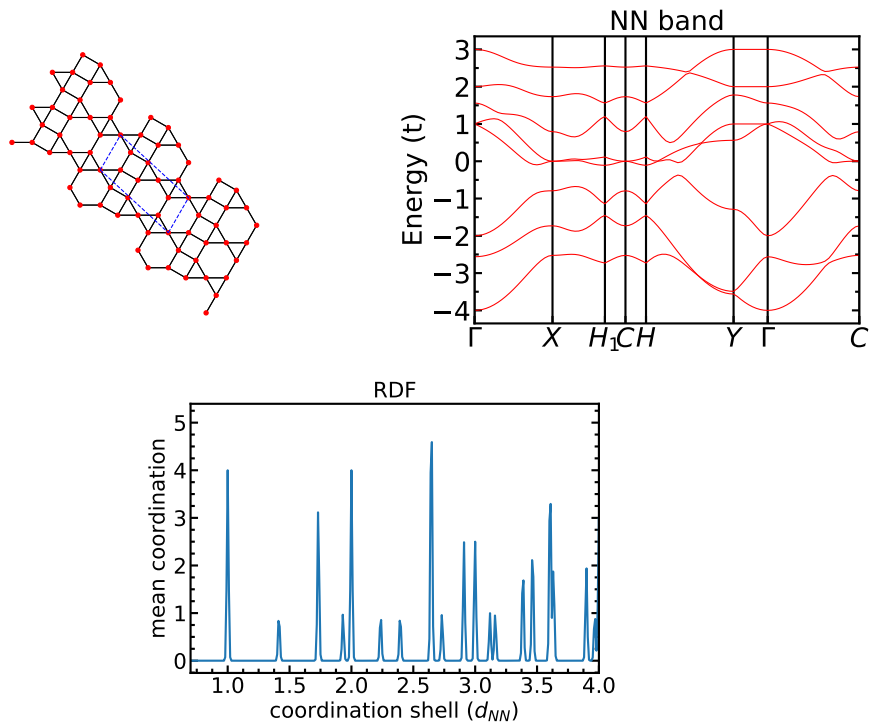


FIG. S29. t3029 lattice framework, nearest neighbors band structure and radial distribution function.

t3030

Tiling reference number t3030 with space-group ' $Pmma'$ ' (51) and 8 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 t3030 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	0	0	0	0	0	4	0

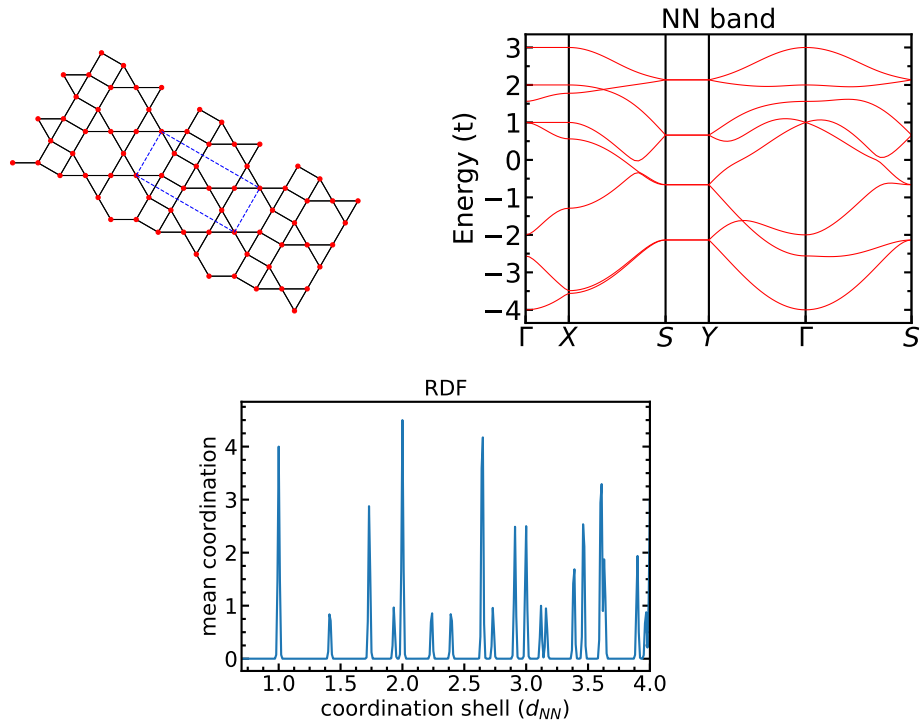


FIG. S30. t3030 lattice framework, nearest neighbors band structure and radial distribution function.

t3031

Tiling reference number t3031 with space-group ' $Pmmm'$ ' (47) and 8 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 t3031 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	0	0	0	0	0	4	2

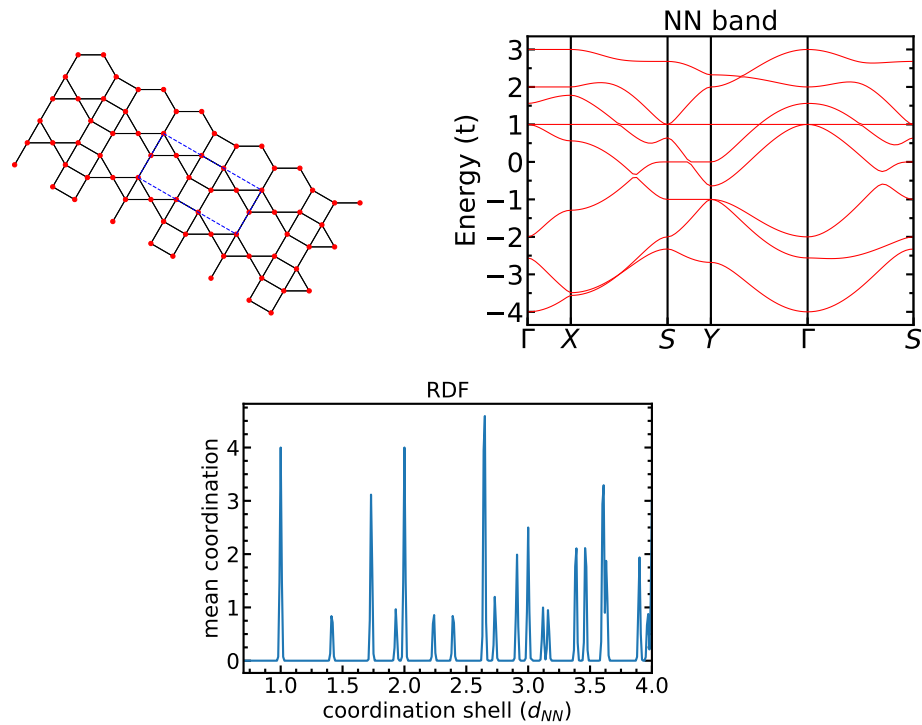


FIG. S31. t3031 lattice framework, nearest neighbors band structure and radial distribution function.

t3032

Tiling reference number t3032 with space-group ' $Cmmm$ ' (65) and 8 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 t3032 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	0	0	0	0	0	4	0

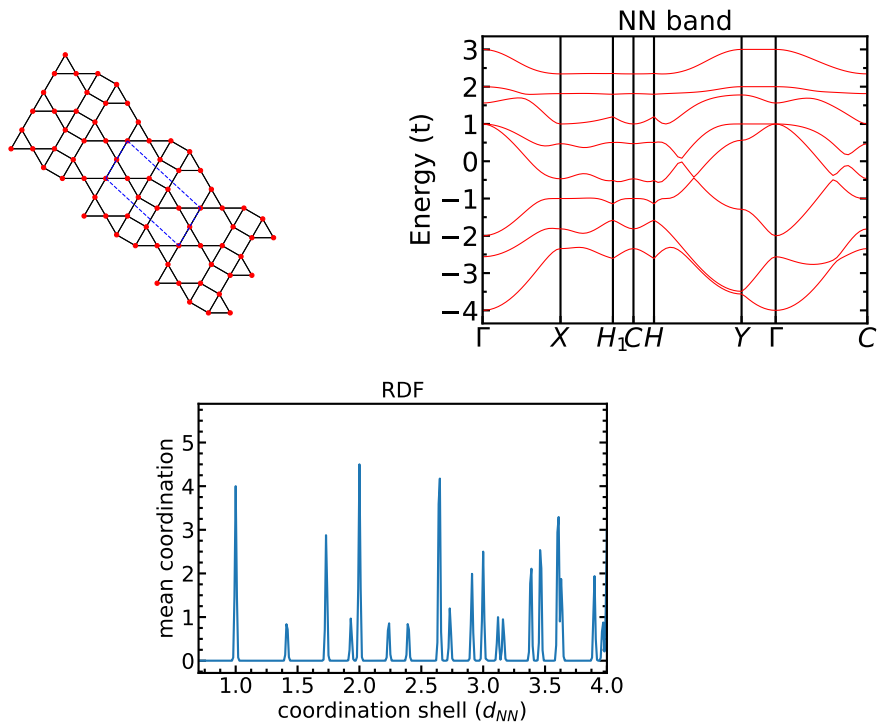


FIG. S32. t3032 lattice framework, nearest neighbors band structure and radial distribution function.

t3033

Tiling reference number t3033 with space-group ' $Pmmm'$ ' (47) and 8 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 t3033 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

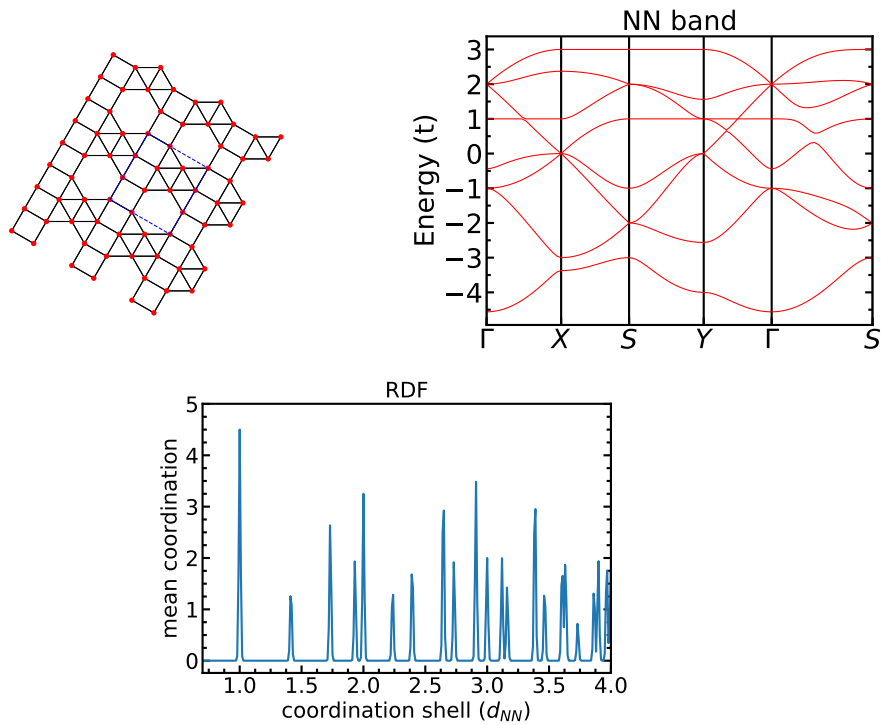


FIG. S33. t3033 lattice framework, nearest neighbors band structure and radial distribution function.

t3034

Tiling reference number t3034 with space-group ' $Cmmm$ ' (65) and 19 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 t3034 vertex types

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

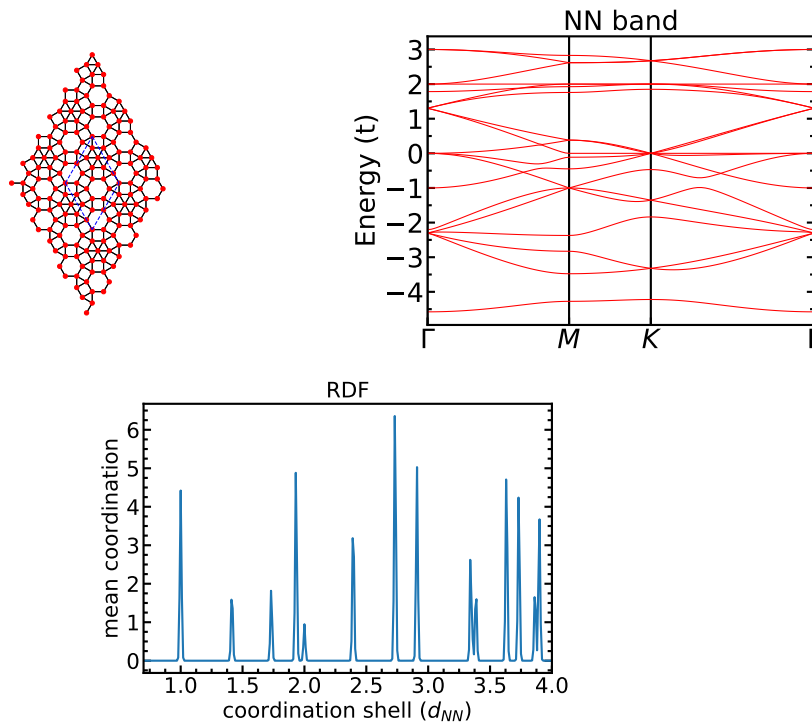


FIG. S34. t3034 lattice framework, nearest neighbors band structure and radial distribution function.

t3035

Tiling reference number t3035 with space-group ' $Amm2'$ ' (38) and 30 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 t3035 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	0	6	12	0	0	0

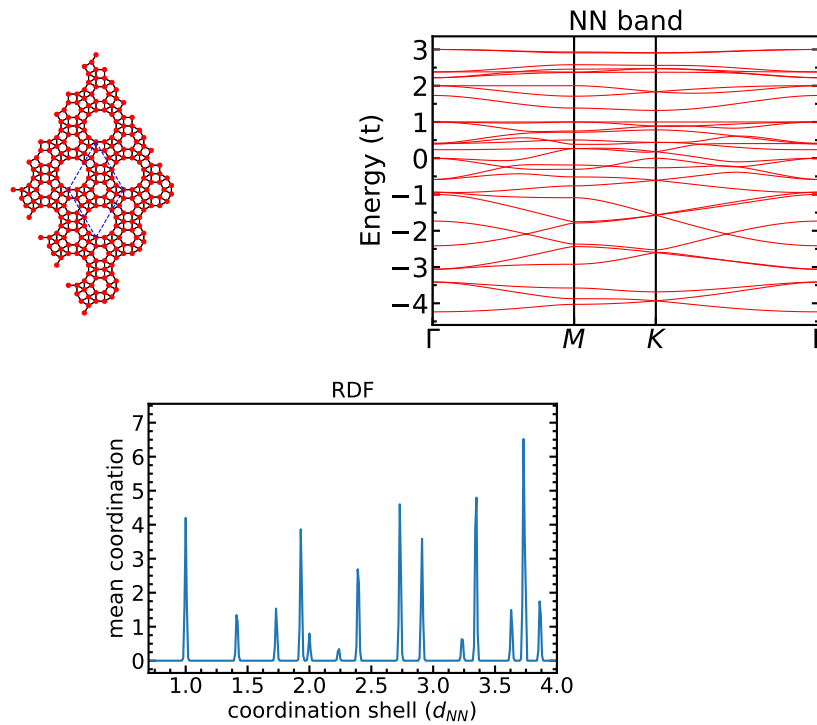


FIG. S35. t3035 lattice framework, nearest neighbors band structure and radial distribution function.

t3036

Tiling reference number t3036 with space-group ' $Amm2'$ ' (38) and 20 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 t3036 vertex types

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

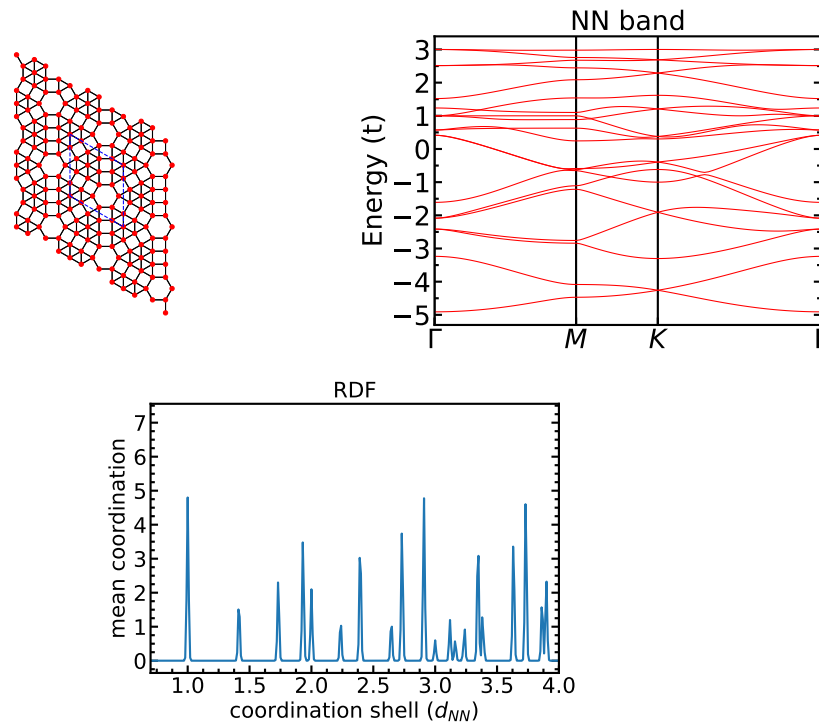


FIG. S36. t3036 lattice framework, nearest neighbors band structure and radial distribution function.

t3037

Tiling reference number t3037 with space-group ' $P6/mmm$ ' (191) and 20 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 t3037 vertex types

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

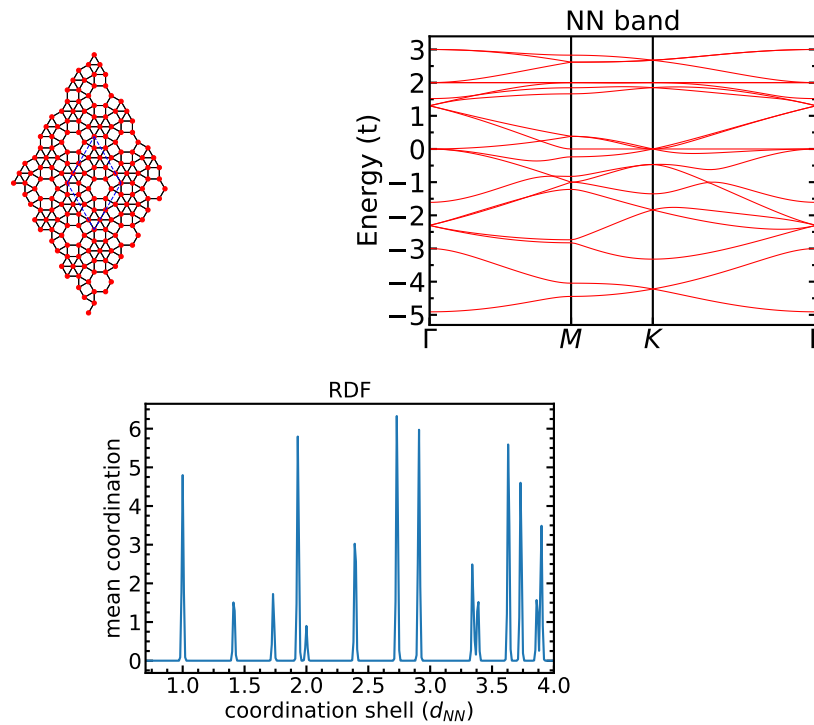


FIG. S37. t3037 lattice framework, nearest neighbors band structure and radial distribution function.

t3038

Tiling reference number t3038 with space-group ' $Pmma'$ (51) and 10 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 t3038 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	4	0	0	0	0	0	4

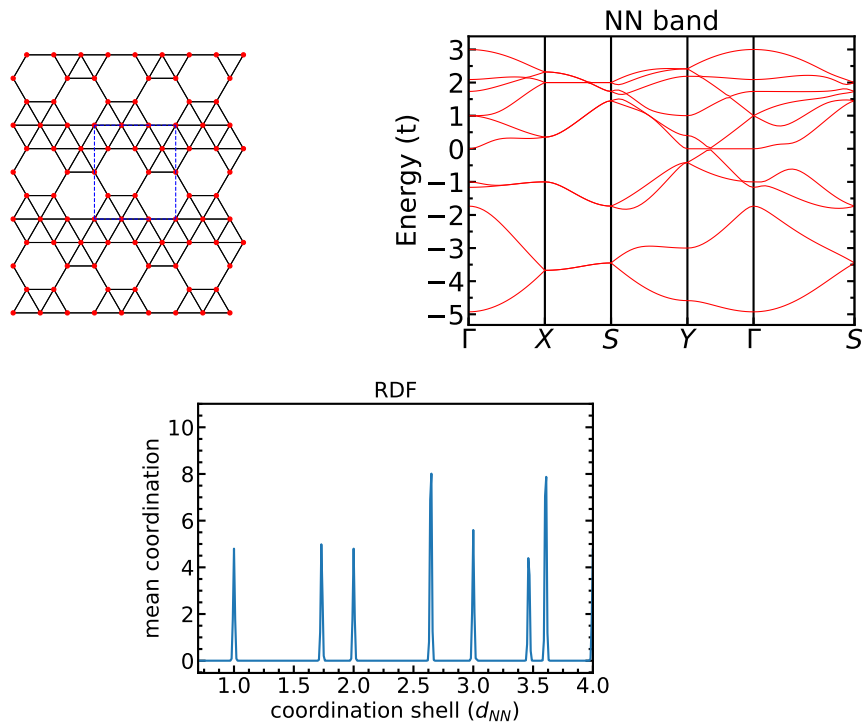


FIG. S38. t3038 lattice framework, nearest neighbors band structure and radial distribution function.

t3039

Tiling reference number t3039 with space-group ' $Cmmm'$ ' (65) and 6 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 t3039 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	0	0	0	0	0	0	2

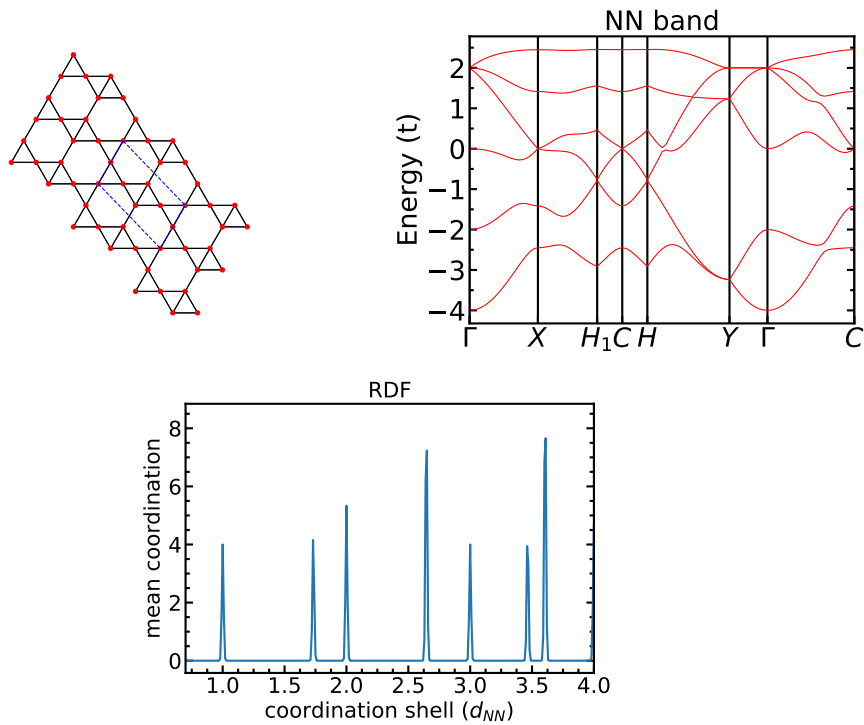


FIG. S39. t3039 lattice framework, nearest neighbors band structure and radial distribution function.

t3040

Tiling reference number t3040 with space-group ' $Pmmm'$ ' (47) and 5 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 t3040 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	0	0	0	0	2

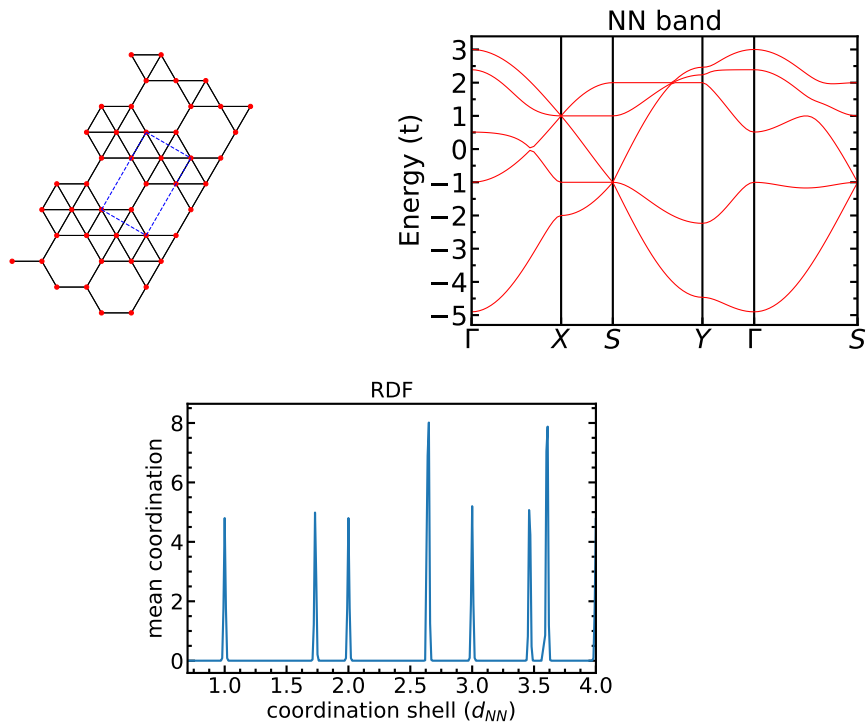


FIG. S40. t3040 lattice framework, nearest neighbors band structure and radial distribution function.

t3041

Tiling reference number t3041 with space-group ' $Cmmm$ ' (65) and 6 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 t3041 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	2

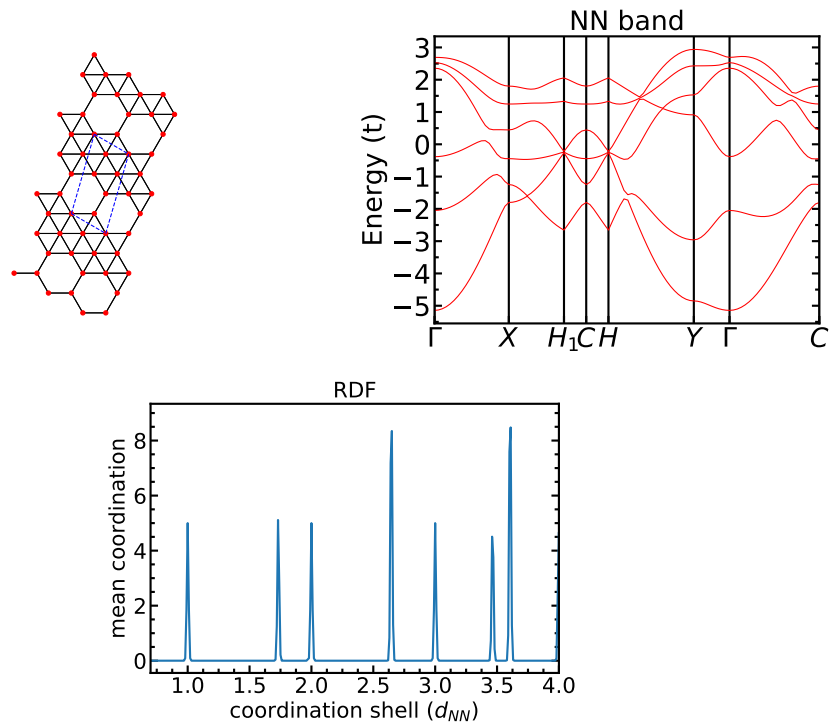


FIG. S41. t3041 lattice framework, nearest neighbors band structure and radial distribution function.

t3042

Tiling reference number t3042 with space-group ' $P6/mmm'$ ' (191) and 13 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 t3042 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	6	0	0	0	0	0	0

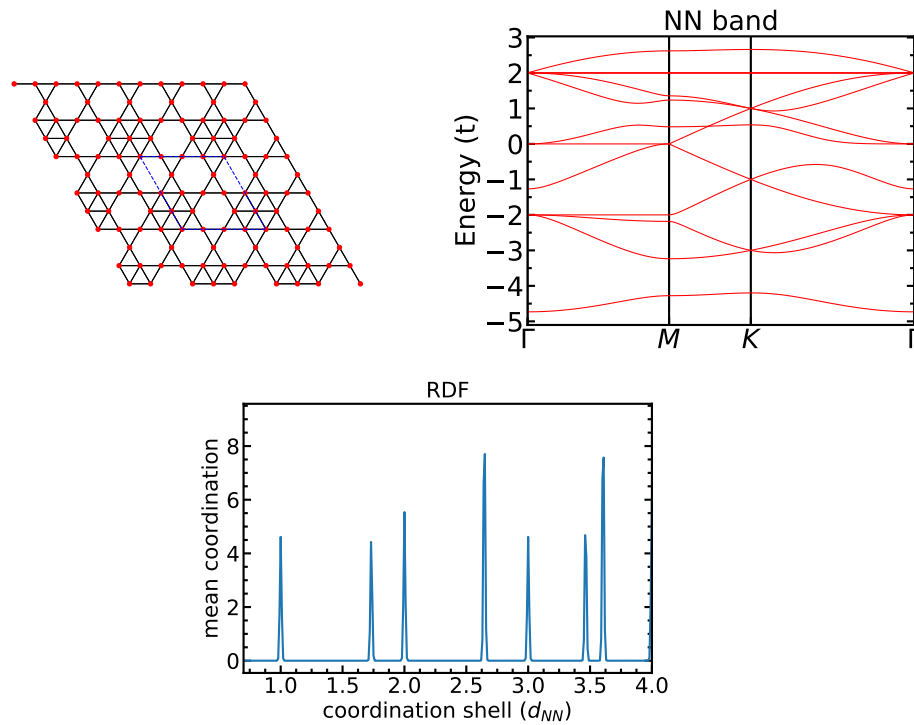


FIG. S42. t3042 lattice framework, nearest neighbors band structure and radial distribution function.

t3043

Tiling reference number t3043 with space-group ' $P6/mmm'$ ' (191) and 10 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 t3043 vertex types

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	0	0	0	0	0	0	3	6	0	0	0	0	0	0

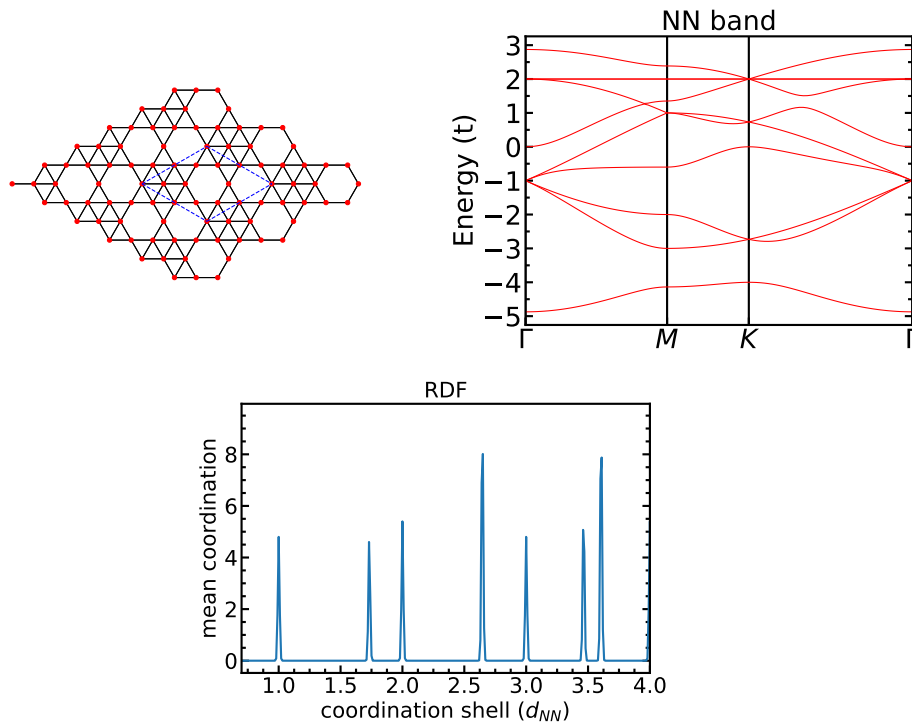


FIG. S43. t3043 lattice framework, nearest neighbors band structure and radial distribution function.

t3044

Tiling reference number t3044 with space-group ' $Cmmm$ ' (65) and 7 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 t3044 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

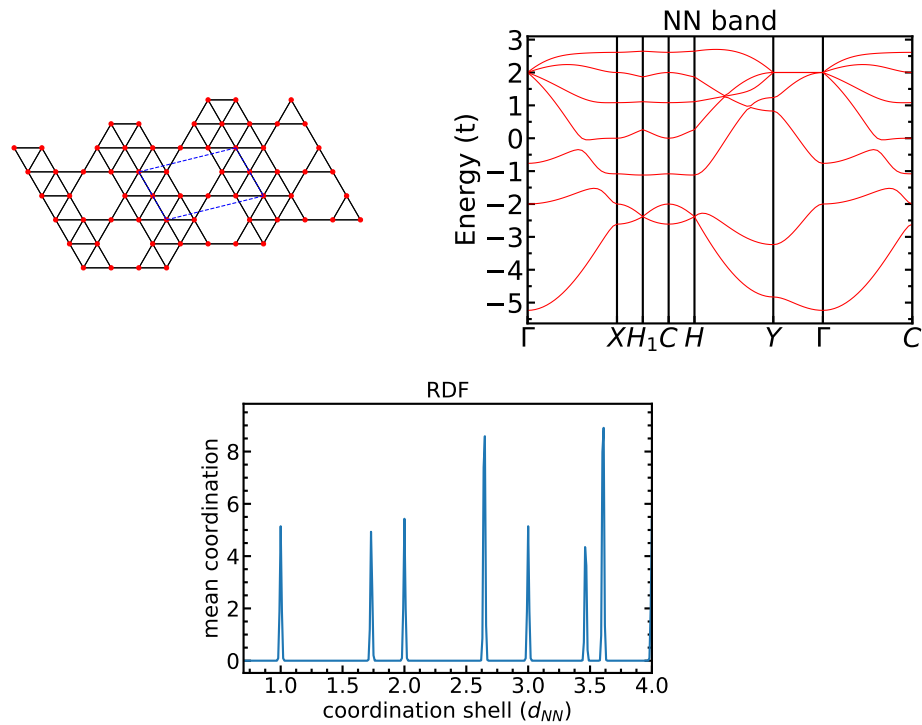


FIG. S44. t3044 lattice framework, nearest neighbors band structure and radial distribution function.

t3045

Tiling reference number t3045 with space-group ' $Pmma$ ' (51) and 10 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 t3045 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

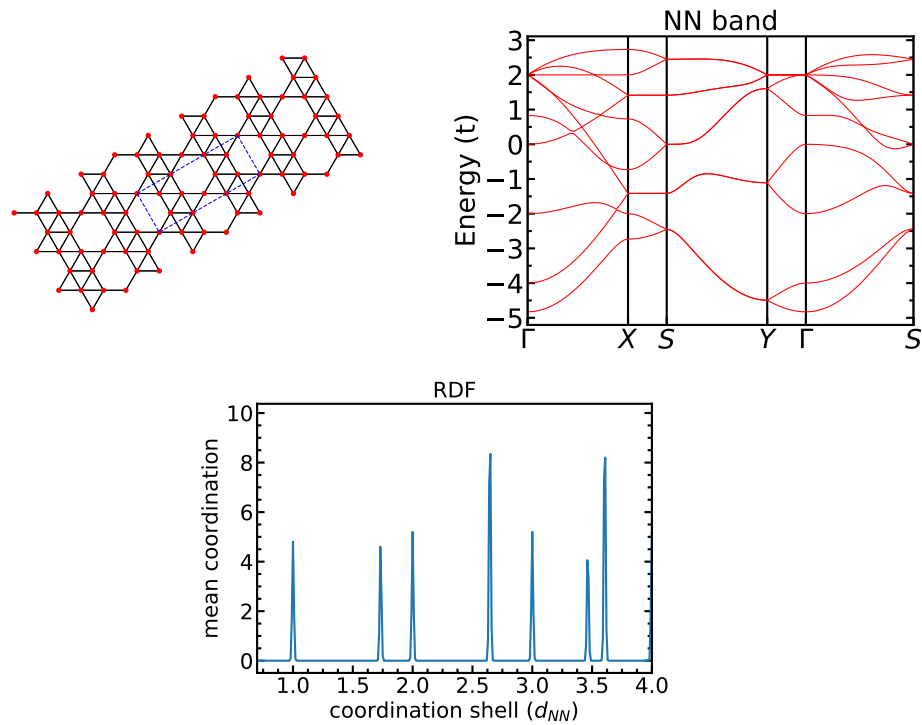


FIG. S45. t3045 lattice framework, nearest neighbors band structure and radial distribution function.

t3046

Tiling reference number t3046 with space-group ' $P2/m'$ ' (10) and 5 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 t3046 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	0	0	0	0	0

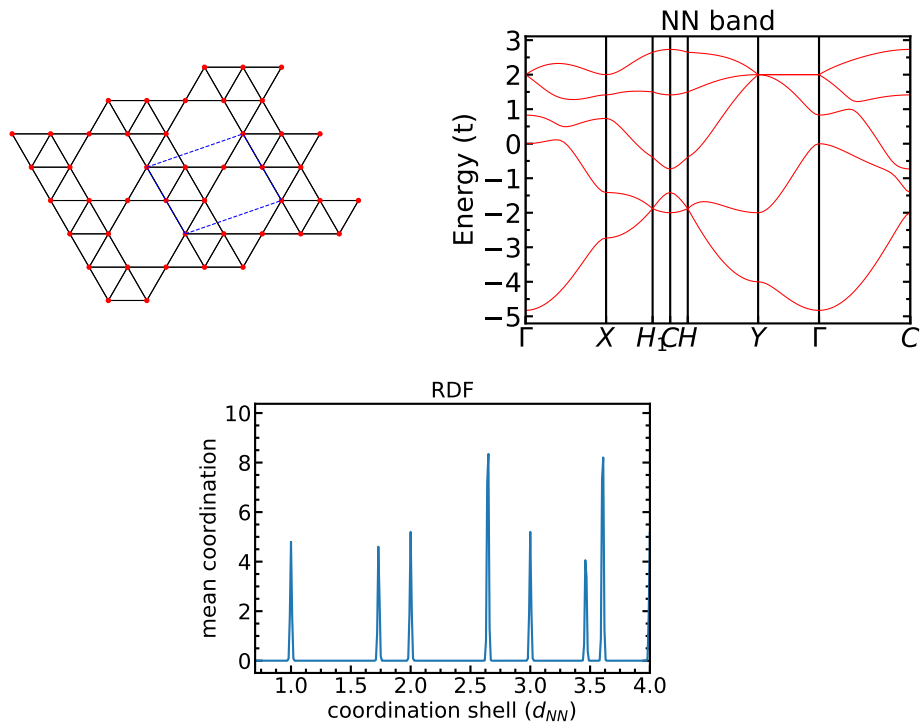


FIG. S46. t3046 lattice framework, nearest neighbors band structure and radial distribution function.

t3047

Tiling reference number t3047 with space-group ' $P2/m'$ ' (10) and 24 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 t3047 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	6	12	0	0	0

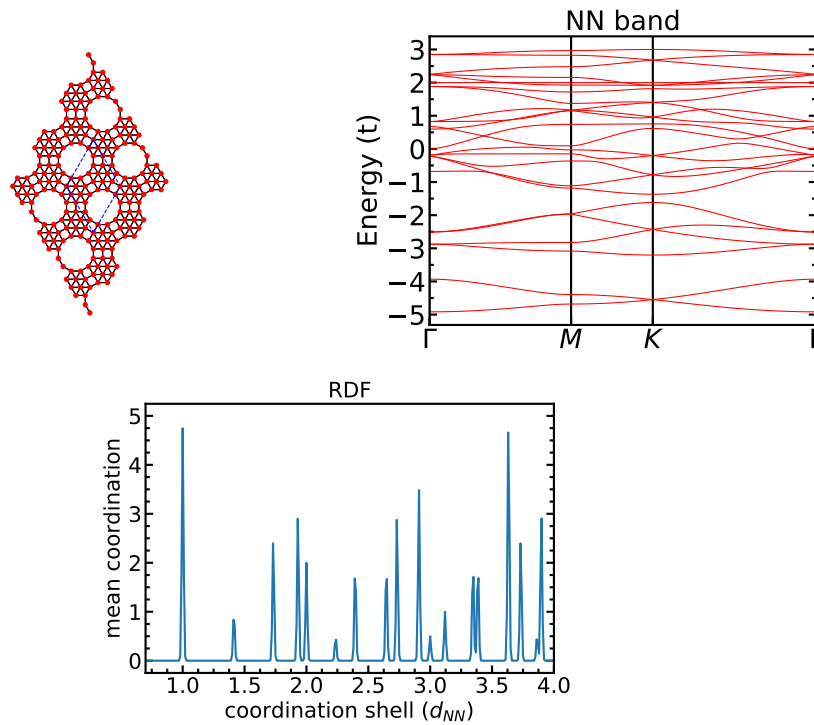


FIG. S47. t3047 lattice framework, nearest neighbors band structure and radial distribution function.

t3048

Tiling reference number t3048 with space-group ' $P - 6m2'$ ' (187) and 21 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 t3048 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	0	12	0	0	0

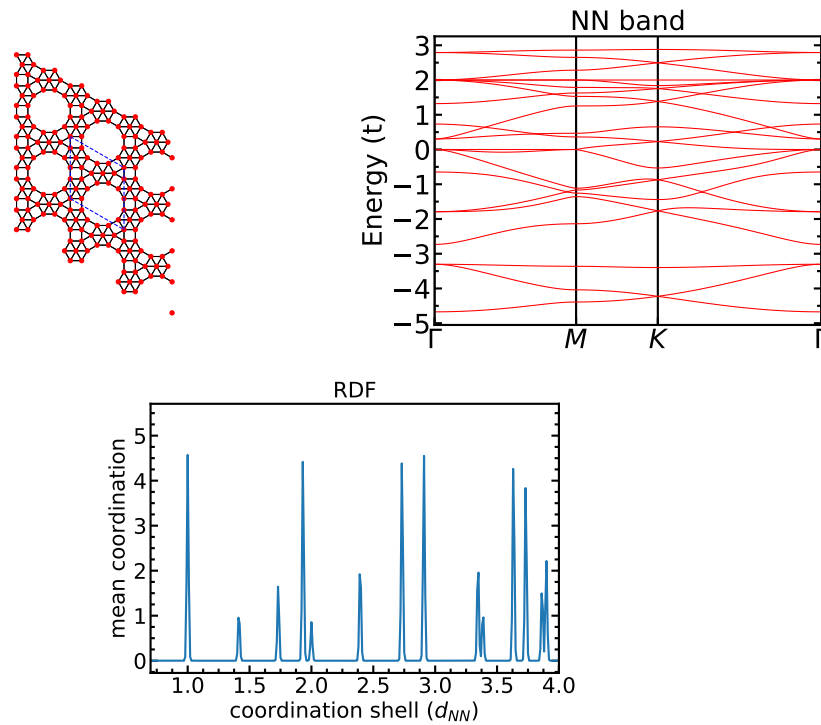


FIG. S48. t3048 lattice framework, nearest neighbors band structure and radial distribution function.

t3049

Tiling reference number t3049 with space-group ' $Pmmm'$ ' (47) and 5 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 t3049 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	2	0	0	0	0

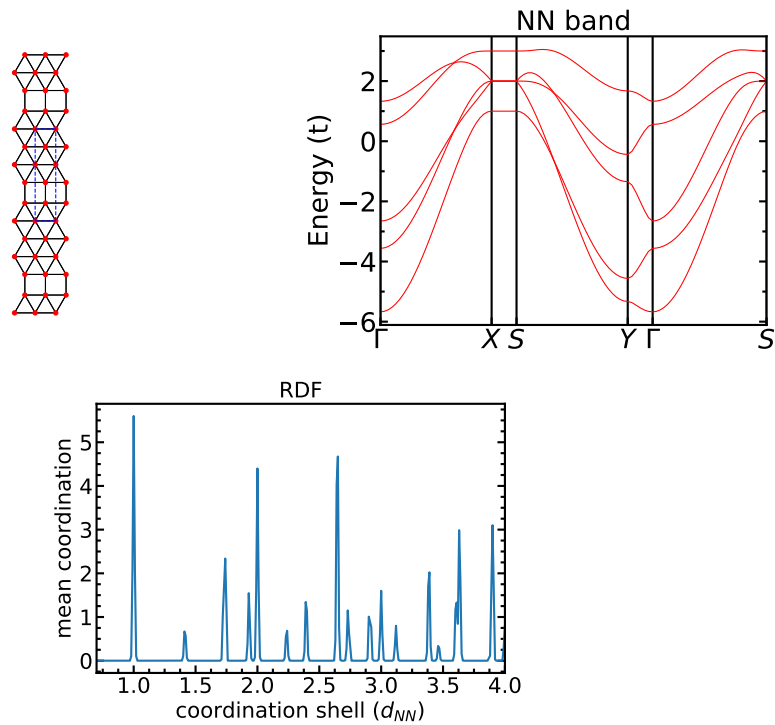


FIG. S49. t3049 lattice framework, nearest neighbors band structure and radial distribution function.

t3050

Tiling reference number t3050 with space-group ' $Cmmm$ ' (65) and 6 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 t3050 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	2	0	0	0	0

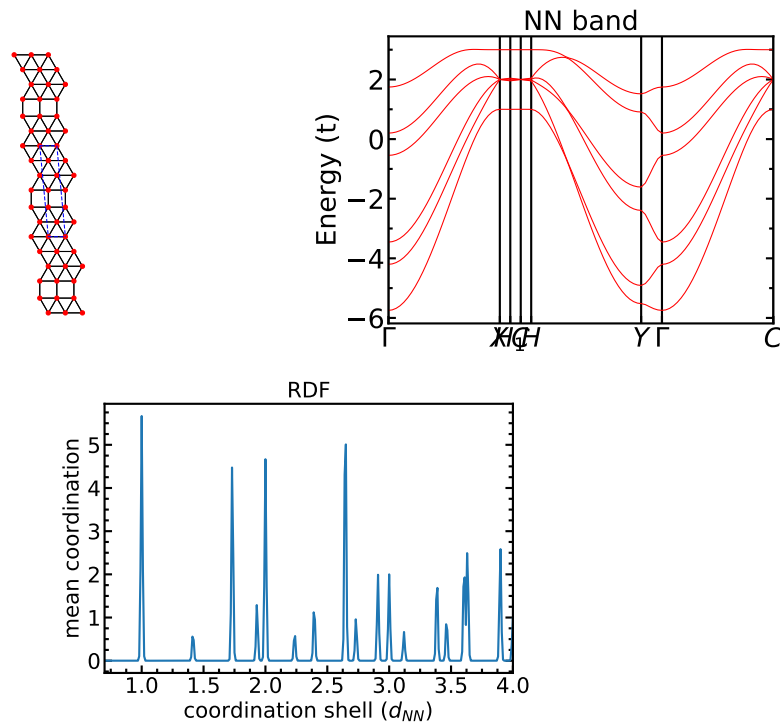


FIG. S50. t3050 lattice framework, nearest neighbors band structure and radial distribution function.

t3051

Tiling reference number t3051 with space-group ' $Amm2'$ ' (38) and 5 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 t3051 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	4	0	0	0	0

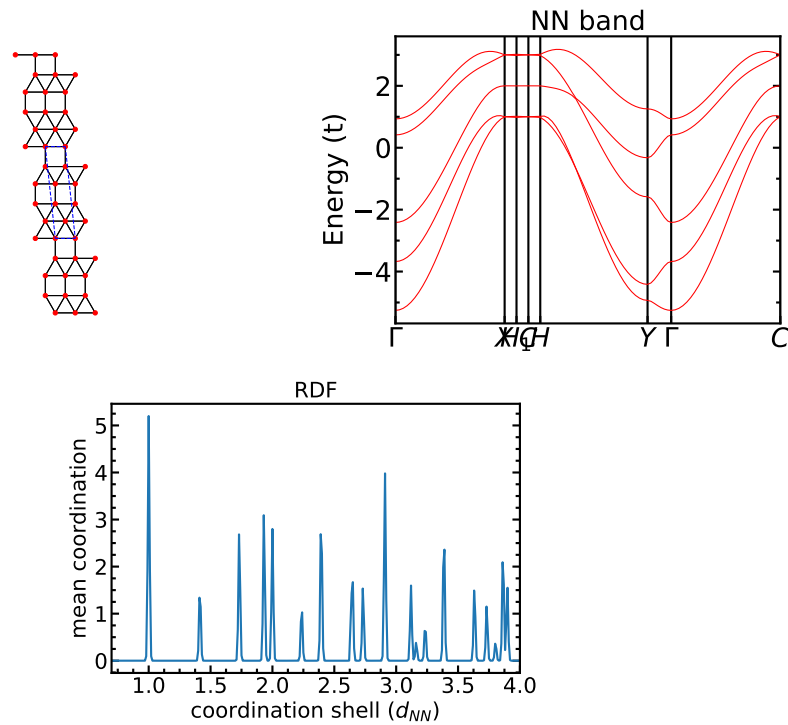


FIG. S51. t3051 lattice framework, nearest neighbors band structure and radial distribution function.

t3052

Tiling reference number t3052 with space-group ' $Pmma'$ ' (51) and 6 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 t3052 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	4	0	0	0	0

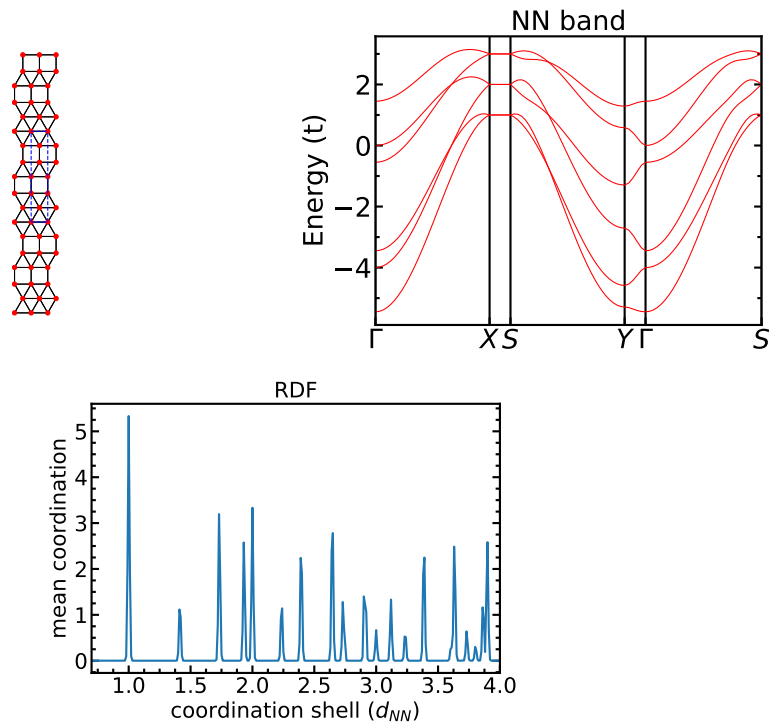


FIG. S52. t3052 lattice framework, nearest neighbors band structure and radial distribution function.

t3053

Tiling reference number t3053 with space-group ' $P2/m'$ ' (10) and 12 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 t3053 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	8	0	0	0	0

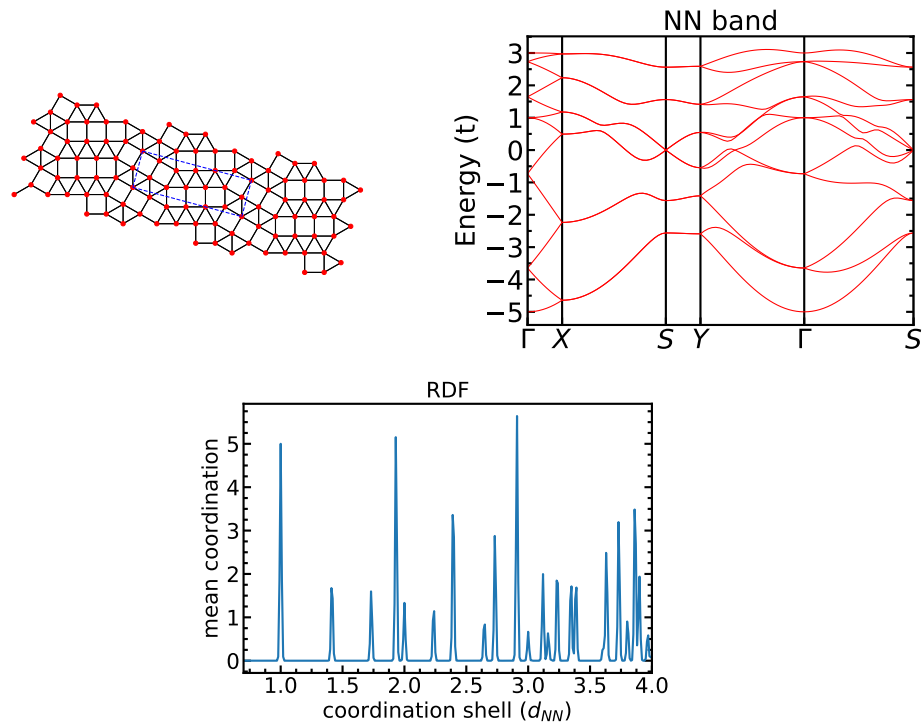


FIG. S53. t3053 lattice framework, nearest neighbors band structure and radial distribution function.

t3054

Tiling reference number t3054 with space-group ' Pm' ' (6) and 13 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 t3054 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	6	6	0	0	0	0

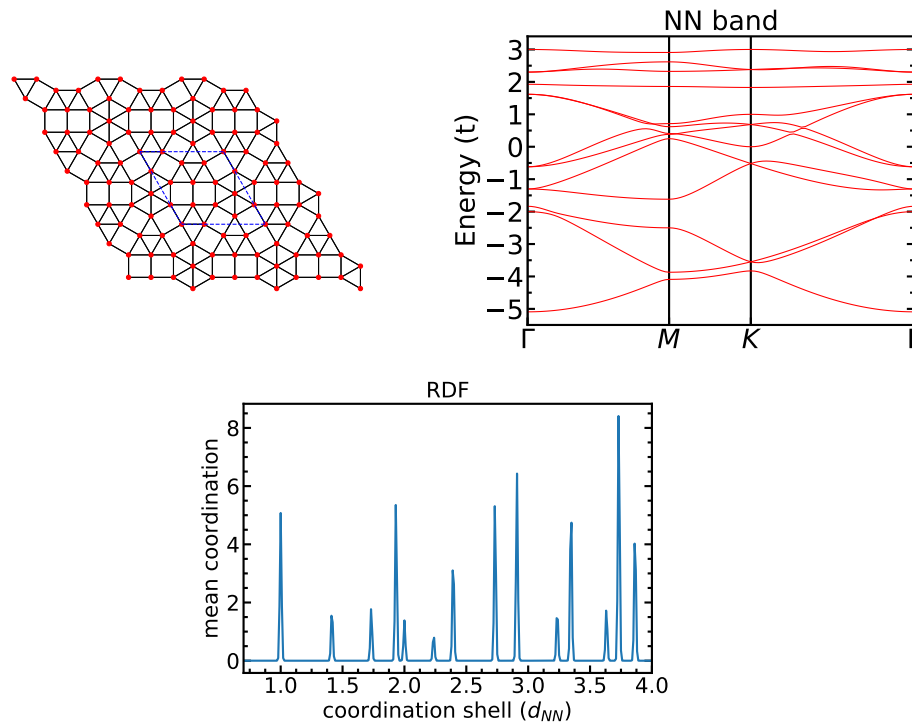


FIG. S54. t3054 lattice framework, nearest neighbors band structure and radial distribution function.

t3055

Tiling reference number t3055 with space-group ' $P2/m'$ ' (10) and 6 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 t3055 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	2	0	0	0	0

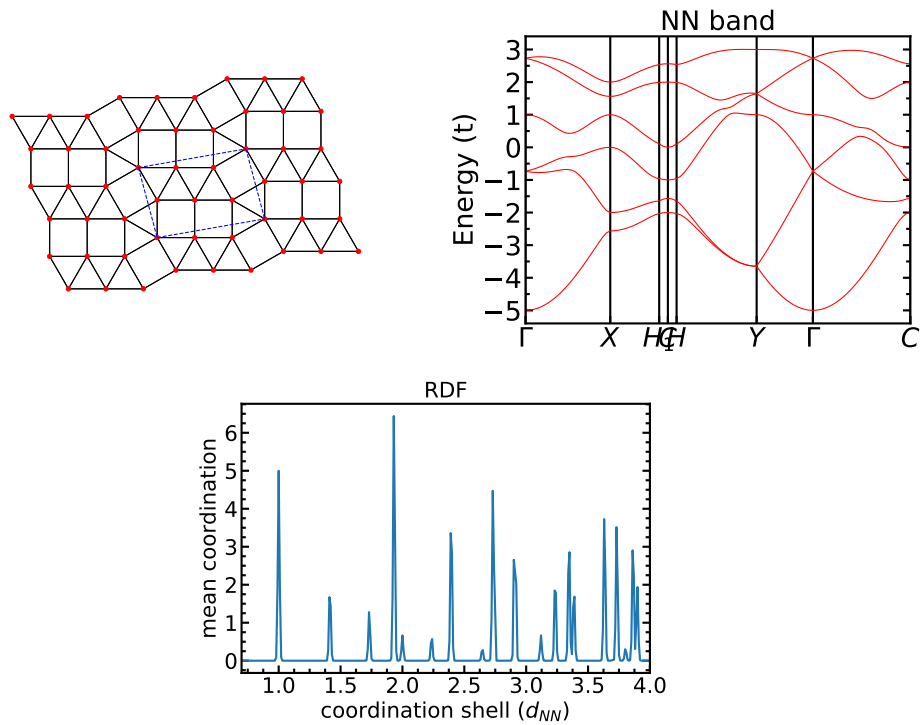


FIG. S55. t3055 lattice framework, nearest neighbors band structure and radial distribution function.

t3056

Tiling reference number t3056 with space-group ' $P2/m'$ ' (10) and 18 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 t3056 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	6	6	6	0	0	0	0

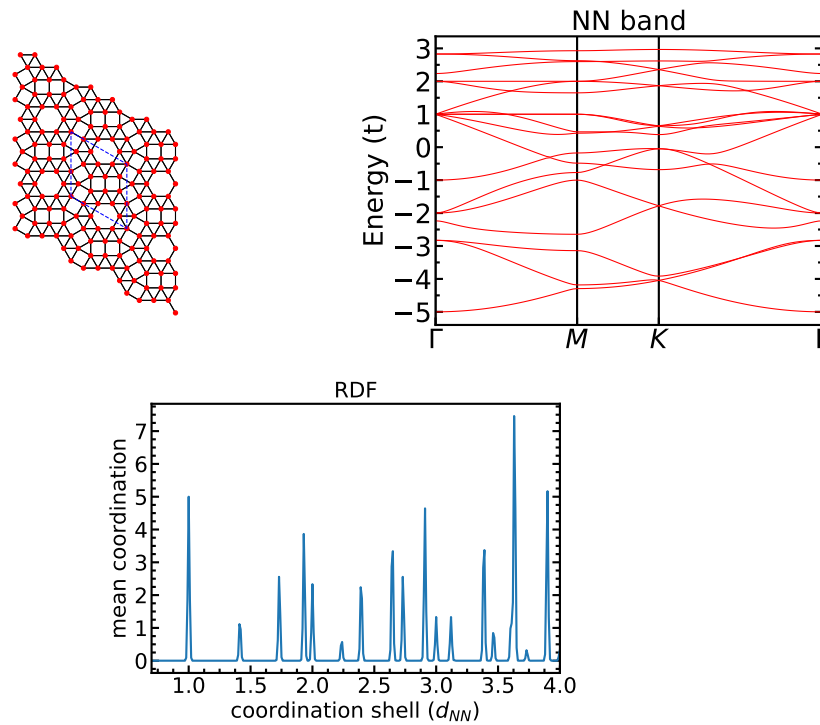


FIG. S56. t3056 lattice framework, nearest neighbors band structure and radial distribution function.

t3057

Tiling reference number t3057 with space-group ' $Amm2'$ ' (38) and 13 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 t3057 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	12	0	0	0	0	0

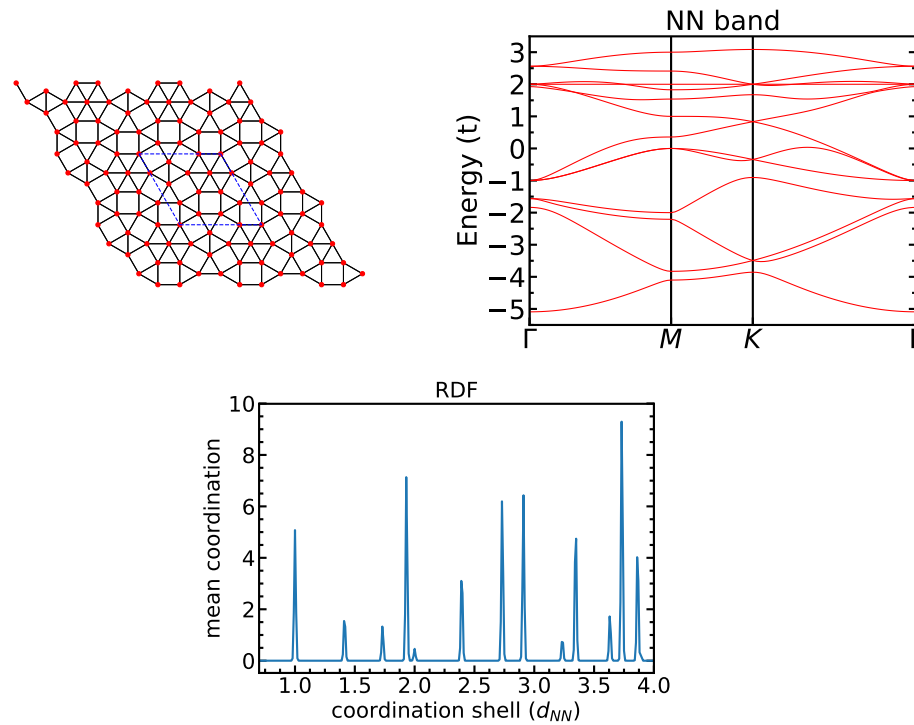


FIG. S57. t3057 lattice framework, nearest neighbors band structure and radial distribution function.

t3058

Tiling reference number t3058 with space-group ' $P6/mmm$ ' (191) and 11 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 t3058 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	6	0	0	0	0	0	0

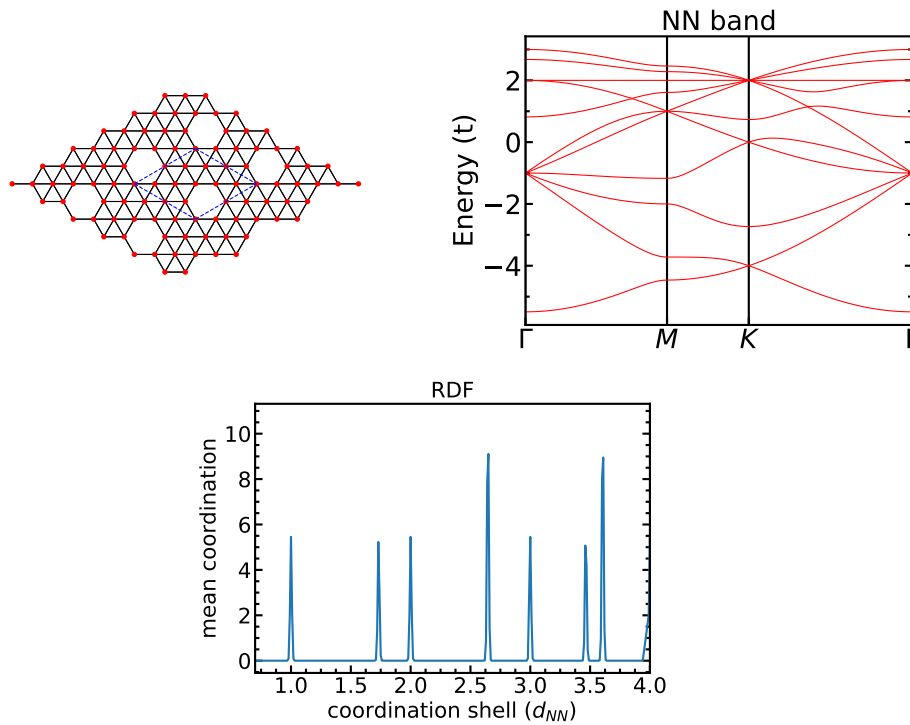


FIG. S58. t3058 lattice framework, nearest neighbors band structure and radial distribution function.

t3059

Tiling reference number t3059 with space-group ' $P6/mmm'$ ' (191) and 15 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 t3059 vertex types

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

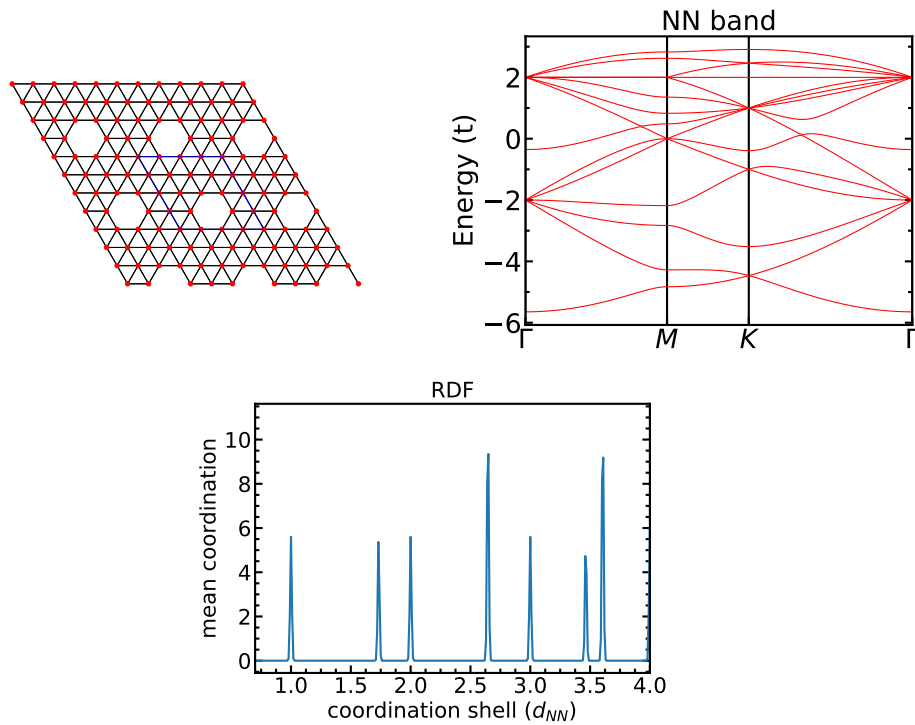


FIG. S59. t3059 lattice framework, nearest neighbors band structure and radial distribution function.

t3060

Tiling reference number t3060 with space-group ' $P6/m'$ ' (175) and 18 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 t3060 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	6	0	0	0	0	0	0

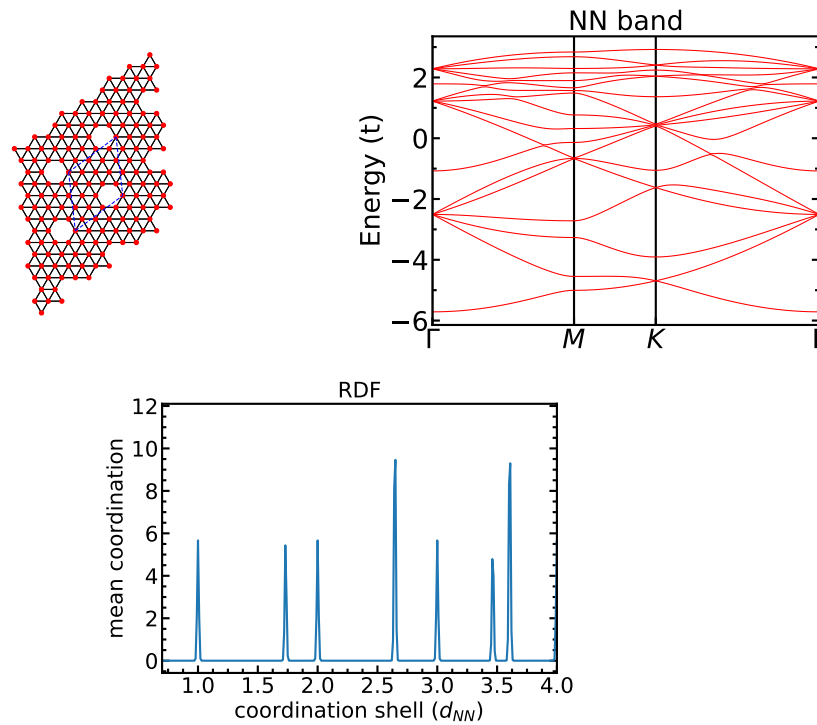


FIG. S60. t3060 lattice framework, nearest neighbors band structure and radial distribution function.

t3061

Tiling reference number t3061 with space-group ' $Cmmm$ ' (65) 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 t3061 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	6	0	0	0	0	0	0

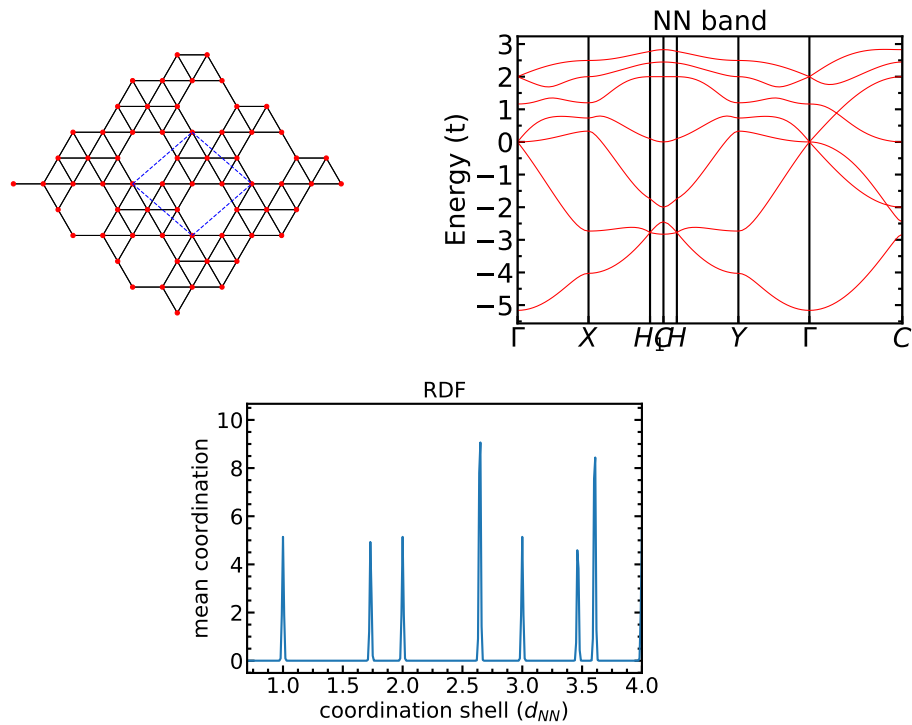


FIG. S61. t3061 lattice framework, nearest neighbors band structure and radial distribution function.

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