

Supporting Information for the article

Structural Landscape of Zn(II) and Cd(II) Coordination Compounds with Two Isomeric Triimidazole Luminophores: Impact of Crystal Packing Patterns on Emission Properties

Marina S. Fonari,^{1,*} Victor Ch. Kravtsov,¹ Victor Bold,¹

E-mails: marina.fonari@ifa.md; victor.kravtsov@ifa.md; victor.bold@yahoo.com

¹ *Institute of Applied Physics, Academy str., 5 MD2028, Chisinau, R. Moldova;*

Elena Lucenti,^{2,3} Elena Cariati,^{3,4,*} Daniele Marinotto,^{2,3} Alessandra Forni,^{2,3}

E-mails: elena.lucenti@scitec.cnr.it; elena.cariati@unimi.it; daniele.marinotto@scitec.cnr.it; alessandra.forni@scitec.cnr.it

² *CNR-SCITEC, Institute of Chemical Sciences and Technologies “Giulio Natta”, via C. Golgi 19, 20133 Milano, Italy;*

³ *INSTM-UdR, via C. Golgi 19, 20133 Milano, Italy;*

⁴ *Dipartimento di Chimica, Università degli Studi di Milano, via C. Golgi 19, 20133 Milano, Italy.*

Table S1. Selected bond distances and angles in compounds **1-14**.

Parameter (distance/angle)	Value (Å, °)	Parameter(distance/angle)	Value(Å, °)
1			
Zn(1)-O(1)	2.085(2)	O(1)-Zn(1)-O(2)	92.26(9)
Zn(1)-O(3)	2.102(2)	O(1)-Zn(1)-O(3)	89.19(10)
Zn(1)-O(2)	2.1190(19)	O(3)-Zn(1)-O(2)	88.46(9)
2.			
Zn(1)-O(2)	2.087(2)	O(1)-Zn(1)-N(1)	88.73(8)
Zn(1)-O(1)	2.1022(18)	O(2)-Zn(1)-O(1)	95.62(8)
Zn(1)-N(1)	2.194(2)	O(2)-Zn(1)-N(1)	89.07(8)
3			
Cd(1)-O(1)	2.277(4)	O(1)-Cd(1)-N(1)	88.94(15)
Cd(1)-O(2)	2.274(4)	O(2)-Cd(1)-O(1)	96.50(16)
Cd(1)-N(1)	2.343(4)	O(2)-Cd(1)-N(1)	88.41(15)
4			
Zn(1)-O(3)	2.014(2)	Zn(1)-O(1)	2.104(2)
Zn(1)-N(1)	2.084(2)	Zn(1)-O(5)	2.177(2)
Zn(1)-O(2)	2.102(2)	Zn(1)-O(4)	2.2603(19)
O(3)-Zn(1)-N(1)	101.31(9)	N(1)-Zn(1)-O(5)	108.29(8)
O(3)-Zn(1)-O(2)	94.22(9)	O(2)-Zn(1)-O(5)	85.88(9)
N(1)-Zn(1)-O(2)	95.55(9)	O(1)-Zn(1)-O(5)	88.17(8)
O(3)-Zn(1)-O(1)	90.10(9)	O(3)-Zn(1)-O(4)	92.31(8)
N(1)-Zn(1)-O(1)	87.93(9)	N(1)-Zn(1)-O(4)	165.39(8)
O(2)-Zn(1)-O(1)	173.81(8)	O(2)-Zn(1)-O(4)	88.65(8)
O(3)-Zn(1)-O(5)	150.26(8)	O(5)-Zn(1)-O(4)	57.95(7)
O(1)-Zn(1)-O(4)	86.75(8)		
5			

Cd(1)-O(1)	2.275(2)	O(1)-Cd(1)-O(2)	79.39(8)
Cd(1)-N(1)	2.347(2)	N(1)-Cd(1)-O(2)	95.63(9)
Cd(1)-O(2)	2.349(2)	O(1)-Cd(1)-N(1)	92.11(9)
6			
Cd(1)-O(2)	2.303(2)	Cd(1)-O(3)	2.427(4)
Cd(1)-O(1)	2.319(2)	Cd(1)-O(7)	2.466(2)
Cd(1)-N(1)	2.356(2)	Cd(1)-O(6)	2.591(2)
Cd(1)-N(7)	2.360(2)		
O(2)-Cd(1)-O(1)	152.97(9)	O(1)-Cd(1)-O(3)	68.48(13)
O(2)-Cd(1)-N(1)	86.75(9)	N(1)-Cd(1)-O(3)	103.09(12)
O(1)-Cd(1)-N(1)	85.69(9)	N(7)-Cd(1)-O(3)	95.77(12)
O(2)-Cd(1)-N(7)	91.15(8)	O(2)-Cd(1)-O(7)	126.08(8)
O(1)-Cd(1)-N(7)	104.07(9)	O(1)-Cd(1)-O(7)	79.31(9)
N(1)-Cd(1)-N(7)	160.94(8)	N(1)-Cd(1)-O(7)	86.68(8)
O(2)-Cd(1)-O(3)	88.12(12)	N(7)-Cd(1)-O(7)	79.28(8)
O(3)-Cd(1)-O(7)	145.24(11)	N(7)-Cd(1)-O(6)	77.48(8)
O(2)-Cd(1)-O(6)	75.54(8)	O(3)-Cd(1)-O(6)	162.04(11)
O(1)-Cd(1)-O(6)	129.13(9)	O(7)-Cd(1)-O(6)	50.54(7)
N(1)-Cd(1)-O(6)	83.66(8)		
7			
Cd(1)-O(3W)	2.213(4)	Cd(1)-O(1)	2.321(5)
Cd(1)-O(4)	2.272(4)	Cd(1)-N(1)	2.339(5)
Cd(1)-O(1W)	2.305(4)	Cd(1)-O(5)	2.440(4)
O(3W)-Cd(1)-O(4)	149.35(16)	O(4)-Cd(1)-N(1)	107.27(16)
O(3W)-Cd(1)-O(1W)	80.92(18)	O(1W)-Cd(1)-N(1)	85.20(17)
O(4)-Cd(1)-O(1W)	89.80(14)	O(1)-Cd(1)-N(1)	94.39(18)
O(3W)-Cd(1)-O(1)	102.5(2)	O(3W)-Cd(1)-O(5)	95.56(17)
O(4)-Cd(1)-O(1)	87.04(17)	O(4)-Cd(1)-O(5)	55.50(13)
O(1W)-Cd(1)-O(1)	176.5(2)	O(1W)-Cd(1)-O(5)	92.64(15)
O(3W)-Cd(1)-N(1)	101.02(19)	O(1)-Cd(1)-O(5)	86.73(16)
N(1)-Cd(1)-O(5)	162.71(17)		
8			
Zn(1)-N(1)	2.107(2)	N(1)-Zn(1)-O(2W)	89.59(10)
Zn(1)-O(2W)	2.111(2)	N(1)-Zn(1)-O(1W)	90.41(10)
Zn(1)-O(1W)	2.149(2)	O(2W)-Zn(1)-O(1W)	91.22(10)
9			
Cd(1)-O(7)	2.284(5)	Cd(1)-O(3)	2.423(6)
Cd(1)-N(1)	2.303(5)	Cd(1)-O(4)	2.433(6)
Cd(1)-N(7)	2.321(5)	Cd(1)-O(5)	2.442(6)
Cd(1)-O(1)	2.390(6)		
O(7)-Cd(1)-N(1)	87.8(2)	N(7)-Cd(1)-O(4)	95.2(2)
O(7)-Cd(1)-N(7)	92.1(2)	O(1)-Cd(1)-O(4)	173.8(2)
N(1)-Cd(1)-N(7)	179.1(2)	O(3)-Cd(1)-O(4)	131.7(2)
O(7)-Cd(1)-O(1)	85.7(3)	O(7)-Cd(1)-O(5)	140.1(2)
N(1)-Cd(1)-O(1)	91.2(2)	N(1)-Cd(1)-O(5)	96.96(19)
N(7)-Cd(1)-O(1)	89.7(2)	N(7)-Cd(1)-O(5)	82.5(2)
O(7)-Cd(1)-O(3)	137.8(2)	O(1)-Cd(1)-O(5)	133.6(2)
N(1)-Cd(1)-O(3)	92.42(19)	O(3)-Cd(1)-O(5)	81.7(2)
N(7)-Cd(1)-O(3)	88.21(19)	O(4)-Cd(1)-O(5)	51.3(2)

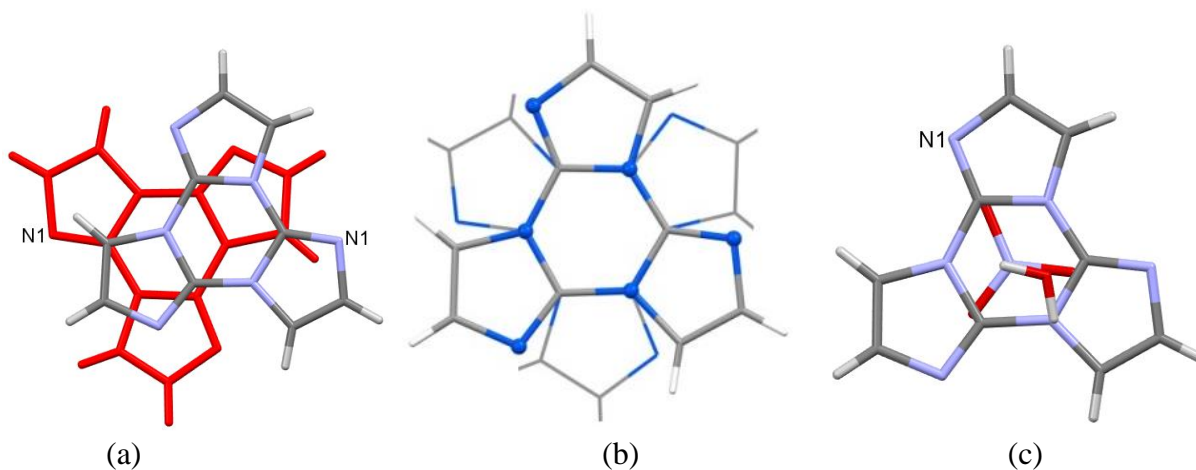
O(1)-Cd(1)-O(3)	52.2(2)	O(7)-Cd(1)-O(4)	90.3(2)
N(1)-Cd(1)-O(4)	83.9(2)		
10			
Zn(1)-O(1)	1.922(2)	Zn(1)-N(1)	2.028(3)
O(1)-Zn(1)-O(1)#1	100.26(16)	O(1)-Zn(1)-N(1)#1	116.16(11)
O(1)-Zn(1)-N(1)	112.86(10)	N(1)-Zn(1)-N(1)#1	99.38(16)
#1 -x, y, -z+1/2			
11			
Cd(1)-N(7)	2.250(6)	Cd(1)-O(2)	2.627(5)
Cd(1)-O(1)	2.309(4)	Cd(1)-N(1)	2.381(4)
N(7)-Cd(1)-O(1)	131.65(13)	N(7)-Cd(1)-O(2)	81.97(11)
O(1)-Cd(1)-O(1)#1	96.7(3)	O(1)-Cd(1)-O(2)	51.61(16)
N(7)-Cd(1)-N(1)	88.35(10)	N(1)-Cd(1)-O(2)	81.03(16)
O(1)-Cd(1)-N(1)	95.88(15)	O(1)-Cd(1)-O(2)#1	143.77(17)
N(1)#1-Cd(1)-N(1)	176.7(2)	O(2)-Cd(1)-O(2)#1	163.9(2)
#1 -x+1, y, -z+1/2			
12			
Zn(1)-O(1)	1.991(9)	Zn(1)-Cl(2)	2.203(5)
Zn(1)-N(1)	2.076(13)	Zn(1)-Cl(1)	2.230(5)
O(1)-Zn(1)-N(1)	97.6(5)	O(1)-Zn(1)-Cl(1)	110.7(4)
O(1)-Zn(1)-Cl(2)	107.9(4)	N(1)-Zn(1)-Cl(1)	103.8(4)
N(1)-Zn(1)-Cl(2)	118.8(4)	Cl(2)-Zn(1)-Cl(1)	116.41(19)
13			
Zn(1)-N(1)	2.030(12)	Zn(1)-Cl(1)	2.209(5)
Zn(1)-N(2)	2.049(12)	Zn(1)-Cl(2)	2.238(4)
N(1)-Zn(1)-N(2)	104.6(5)	N(1)-Zn(1)-Cl(2)	106.0(4)
N(1)-Zn(1)-Cl(1)	110.3(4)	N(2)-Zn(1)-Cl(2)	106.2(3)
N(2)-Zn(1)-Cl(1)	113.9(4)	Cl(1)-Zn(1)-Cl(2)	115.01(18)
14			
Cd(1)-N(1)	2.346(4)	N(7)-Cd(1)-N(1)	88.87(15)
Cd(1)-N(7)	2.342(4)	O(5)#3-Cd(2)-O(5)	91.34(19)
Cd(2)-O(5)	2.283(4)		
#3 x-y+2/3, x+1/3, 1/3-z			

Table S2. Hydrogen bonds for **1-12, 14**.

D-H...A	d(H...A), Å	d(D...A), Å	∠(DHA), °	Symmetry transformations for acceptor
1				
O(1)-H(1A)···O(5)	2.02(2)	2.834(3)	159(3)	-x, 1-y, -z
O(1)-H(1B)···N(1)	1.92(2)	2.770(4)	163(3)	1-x, 1-y, -z
O(2)-H(2A)···N(3)	1.88(2)	2.755(3)	168(3)	x, y-1, z
O(2)-H(2B)···O(6)	2.03(2)	2.847(3)	156(4)	x, y, z
O(3)-H(3A)···N(2)	1.93(2)	2.786(3)	170(3)	x, y, z-1
O(3)-H(3B)···O(6)	1.99(2)	2.831(3)	163(3)	x, y, z
2				
O(1)-H(1A)···N(2)	1.91(2)	2.752(3)	164(3)	1-x, 2-y, 1-z
O(1)-H(1B)···O(4)	2.01(2)	2.810(3)	154(3)	x, y, z
O(2)-H(2A)···O(4)	1.98(2)	2.802(3)	169(3)	x+1, y, z
O(2)-H(2B)···O(3)	1.86(2)	2.719(3)	179(4)	x, y, z

O(3)-H(3A)··N(3)	1.95(2)	2.801(3)	173(3)	$x, y, z+1$
O(3)-H(3B)··O(6)	1.98(2)	2.830(3)	171(4)	$x, y+1, z$
3				
O(1)-H(1A)··N(2)	1.87(3)	2.723(6)	168(6)	$1-x, 2-y, 1-z$
O(1)-H(1B)··O(4)	2.05(4)	2.810(6)	148(6)	x, y, z
O(2)-H(2A)··O(4)	2.08(3)	2.808(7)	142(5)	$x+1, y, z$
O(2)-H(2B)··O(3)	1.85(3)	2.693(6)	164(6)	x, y, z
O(3)-H(3A)··N(3)	1.98(3)	2.802(6)	161(7)	$x, y, z+1$
O(3)-H(3B)··O(6)	1.98(3)	2.817(7)	170(9)	$x, y+1, z$
4				
O(1)-H(1A)··O(9)	1.881(18)	2.736(3)	170(3)	$1-x, 1-y, -z$
O(1)-H(1B)··N(3)	2.016(18)	2.865(3)	169(4)	$1-x, -y, 1-z$
O(2)-H(2A)··N(2)	2.06(2)	2.876(3)	163(4)	$x, y+1, z$
O(2)-H(2B)··O(8)	2.020(19)	2.870(3)	172(3)	x, y, z
O(3)-H(3A)··O(4)	1.986(17)	2.821(3)	179(4)	$1-x, 1-y, -z$
O(3)-H(3B)··O(7)	2.44(2)	3.157(4)	145(3)	$-x, 1-y, -z$
O(3)-H(3B)··O(8)	1.97(2)	2.768(3)	158(3)	$-x, 1-y, -z$
5				
O(1)-H(1A)··O(3)	1.90(2)	2.758(3)	168(3)	$x, y-1, z$
O(1)-H(1B)··O(3)	1.946(17)	2.801(4)	175(3)	$1/2-x, y-1/2, 1/2-z$
C(2)-H(2)··N(2)	2.45	3.307(4)	153.2	$-x, y, -z-1/2$
C(4)-H(4)··N(3)	2.40	3.311(4)	167.2	$-x, y, 1/2-z$
C(5)-H(5)··O(4)	2.50	3.414(4)	168.0	$x, 1-y, z+1/2$
C(6)-H(6)··O(1)	2.51	3.302(4)	143.5	x, y, z
C(6)-H(6)··O(2)	2.53	3.169(4)	126.3	x, y, z
6				
O(1)-H(1A)··O(5A)	2.00(2)	2.848(12)	166(4)	$1/2-x, y-1/2, 1/2-z$
O(1)-H(1B)··O(6)	2.24(3)	3.003(4)	149(5)	$x+1, y, z$
O(2)-H(2B)··O(7)	2.11(2)	2.948(3)	166(3)	$-x-1/2, y+1/2, 1/2-z$
C(1)-H(1)··O(7)	2.49	3.137(4)	126.4	x, y, z
C(5)-H(5)··N(8)	2.52	3.343(4)	147.6	$x+1/2, -y+3/2, z-1/2$
C(6)-H(6)··O(3)	2.51	3.316(5)	145.0	x, y, z
C(6)-H(6)··O(8)	2.49	3.028(4)	116.9	$-x-1/2, y+1/2, 1/2-z$
C(10)-H(10)··O(2)	2.58	3.195(4)	123.7	x, y, z
C(11)-H(11)··N(3)	2.45	3.371(4)	168.9	$x-1/2, -y+3/2, z+1/2$
C(13)-H(13)··O(4)	2.51	3.270(5)	138.6	$-x, 1-y, 1-z$
C(14)-H(14)··N(2)	2.51	3.226(4)	133.6	$x+1/2, 1/2-y, z+1/2$
C(15)-H(15)··O(1)	2.49	3.370(4)	158.3	x, y, z
7				
O(1W)-H(1W)··N(2)	1.98(2)	2.803(6)	161(6)	$x+1, y, z$
O(1W)-H(2W)··O(2W)	1.928(17)	2.755(7)	161(5)	$x, y, z-1$
O(3W)-H(5W)··N(3)	1.946(12)	2.799(7)	172(6)	$1/2-x, y+1/2, 1/2-z$
O(3W)-H(6W)··O(3)	2.07(3)	2.839(7)	148(6)	$1/2+x, 3/2-y, z-1/2$
8				
O(1)-H(1A)··O(3)	2.02(2)	2.864(4)	162(3)	$1-x, 2-y, -z$
O(1)-H(1B)··N(3)	2.17(3)	2.924(3)	149(3)	$1/2-x, y+1/2, 1/2-z$
O(2)-H(2A)··O(4)	1.830(19)	2.693(4)	173(4)	x, y, z
O(2)-H(2B)··O(4)	2.48(3)	3.226(4)	145(3)	$3/2-x, y+1/2, 1/2-z$
O(2)-H(2B)··O(5)	2.01(2)	2.836(3)	160(4)	$3/2-x, y+1/2, 1/2-z$
9				
O(1)-H(1A)··O(6)	2.69(10)	3.082(8)	114(8)	$x+1, y, z$
O(1)-H(1A)··N(2)	2.28(8)	2.863(8)	133(10)	$x, y-1, z$
O(1)-H(1B)··N(9)	2.13(8)	2.907(8)	161(10)	$x+1, y+1, z$
10				

C(1)-H(1)···O(2)	2.34	3.045(4)	132.9	-x, y, 1/2-z
C(3)-H(3)···N(3)	2.65	3.570(5)	169.7	-x-1/2, y-1/2, -z
C(4)-H(4)···N(5)	2.36	3.293(5)	177.7	-x, -y-1, -z
C(9)-H(9)···O(2)	2.59	3.226(4)	126.2	x, y, z
11				
C(4)-H(4)···O(2)	2.52	3.394(6)	156.6	1-x, -y, -z
C(11)-H(11C)···N(2)	2.50	3.416(6)	159.9	x-1/2, y+1/2, z
C(13)-H(13)···O(1)	1.95	2.793(7)	149.6	x, y-1, z
C(12)-H(12)···O(2)	2.50	3.123(8)	124.7	x, y, z
O(4)-H(4A)···O(1)	2.30	2.963(17)	134.9	x, y-1, z
O(4)-H(4B)···O(2)	2.28	3.16(2)	173.6	1-x, -y, -z
O(3)-H(3A)···O(4)	2.04	2.89(3)	169.4	x, y, z
12				
O(1)-H(1A)···N(3B)	2.02	2.82(3)	156.0	x, y, z
O(1)-H(1B)···N(2)	1.87	2.71(2)	163.9	1-x, 1-y, z+1/2
C(4)-H(4)···O(2)	2.59	3.36(3)	140.4	x, y, z
O(1A)-H(1D)···N(2A)	2.21	2.99(7)	150.1	1-x, 1-y, z+1/2
O(2)-H(2A)···N(2B)	2.09	2.75(3)	133.4	1-x,-y,z-1/2
O(2)-H(2B)···N(3)	1.94	2.79(2)	166.4	x, y, z
C(6B)-H(6B)···Cl(3)	2.59	3.49(3)	162.5	x, y, z
14				
O(5)-H(5A)···O(1)	2.193(19)	2.912(7)	141(3)	2/3-x+y, 4/3-x, z-2/3
O(5)-H(5B)···N(8)	2.16(2)	2.728(7)	125(3)	1/3-y, x-y+2/3, z-1/3
C(2)-H(2)···N(9)	2.52	3.396(7)	156.9	x-y+2/3, x+1/3, 4/3-z
C(3)-H(3)···N(9)	2.68	3.523(8)	151.5	x-y+2/3, x+1/3, 4/3-z
C(5)-H(5)···O(4)	2.63	3.490(10)	154.1	1-x, 1-y, 2-z
C(13)-H(13)···O(4)	2.45	3.335(9)	158.0	y-2/3, 2/3-x+y, 5/3-z
C(14)-H(14)···N(2)	2.57	3.448(8)	157.0	1/3-x, 2/3-y, 5/3-z
C(15)-H(15)···O(1)	2.50	3.403(7)	164.6	x-y-1/3, x-2/3, 4/3-z
O(1W)-H(1W)···O(2)	2.12(2)	3.007(11)	153(8)	x, y, z



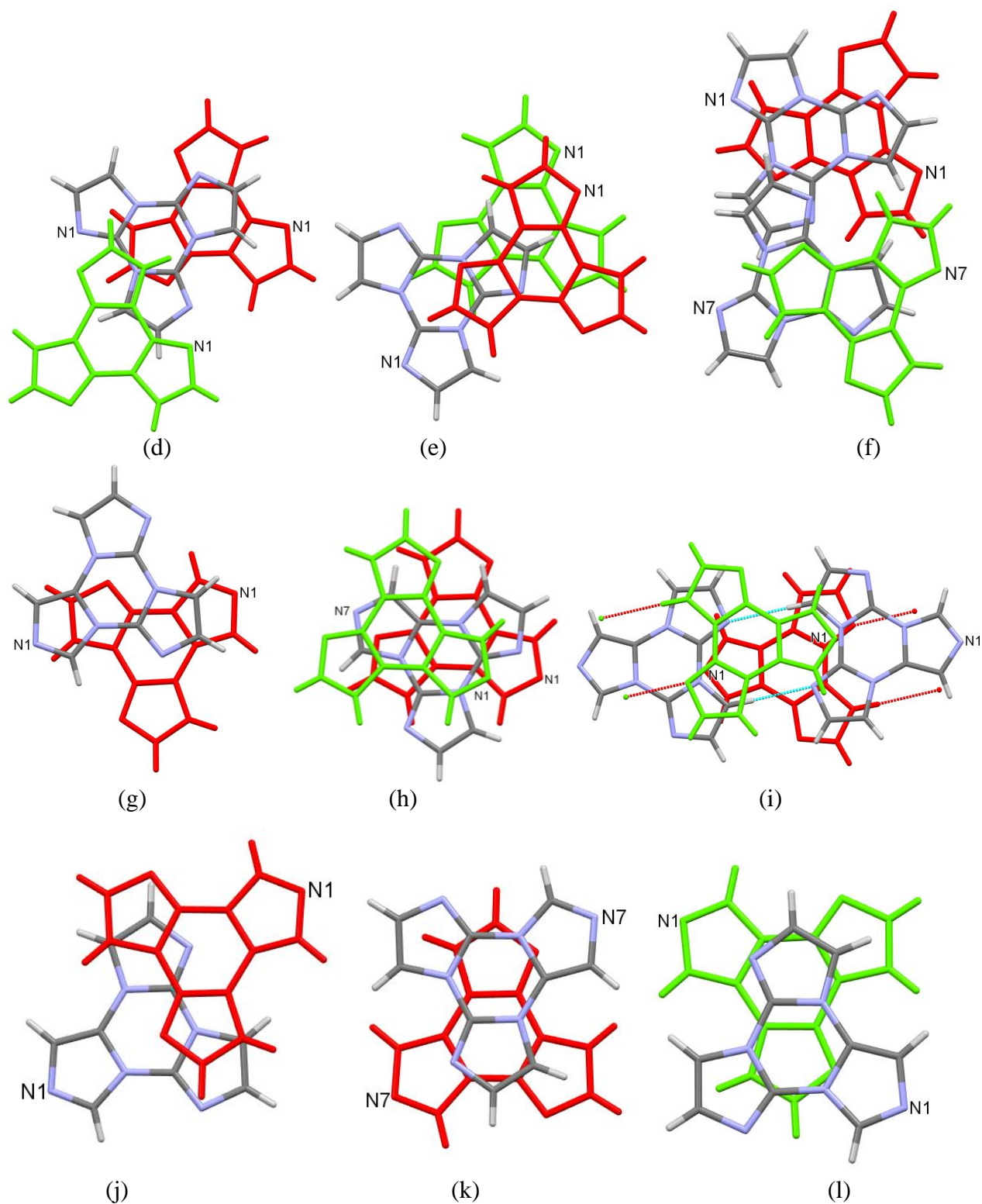


Figure S1. Meaningful stacking patterns in compounds (a) **1**; (b) $[\text{Zn}(\text{H}_2\text{O})_6](\text{BF}_4)_2(\text{L}_1)_2$ [34]; (c) **3** – showing L_1 blockage by nitrate anion and water molecule; (d) **4**; (e) **5**, (f) **6**; (g) **8**; (h) **9**; (i) **10**; (g) **11**; (k)-(l) **14**. All images are given in projections on the mean planes of L_1/L_2 reference molecules colored trivially.

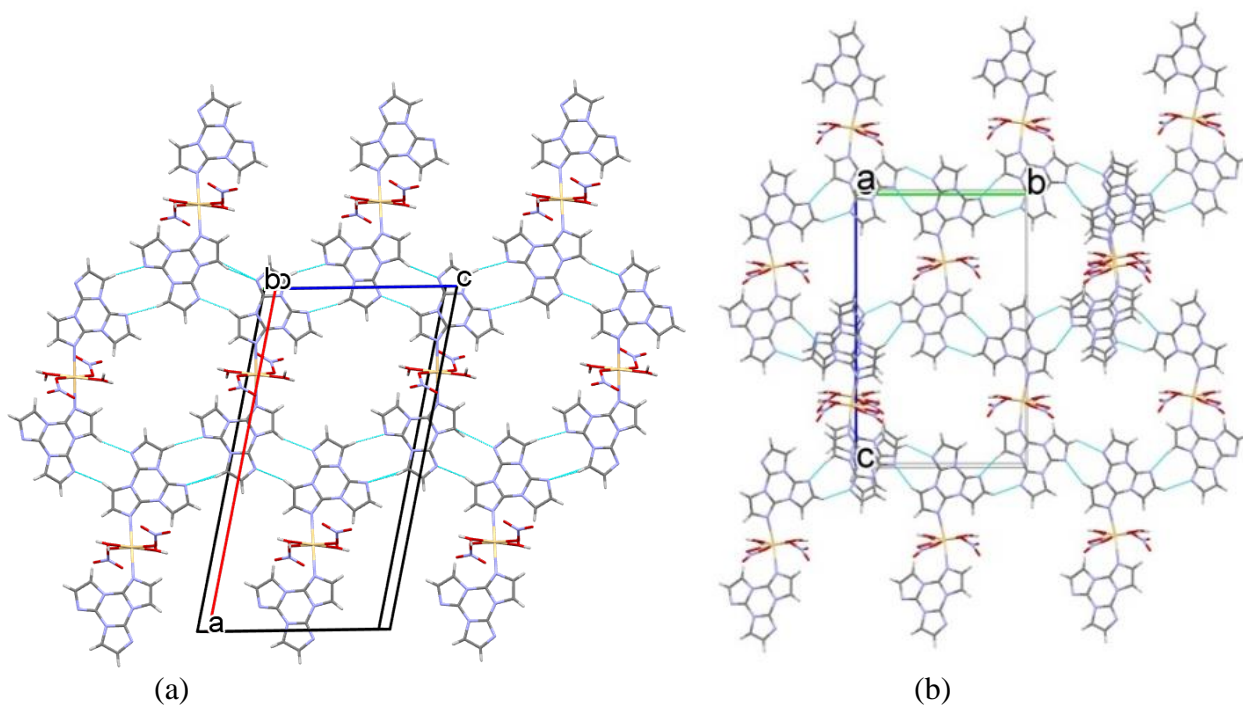


Figure S2. Infinite CH...N motifs in polymorphs (a) **5** and (b) **6**.

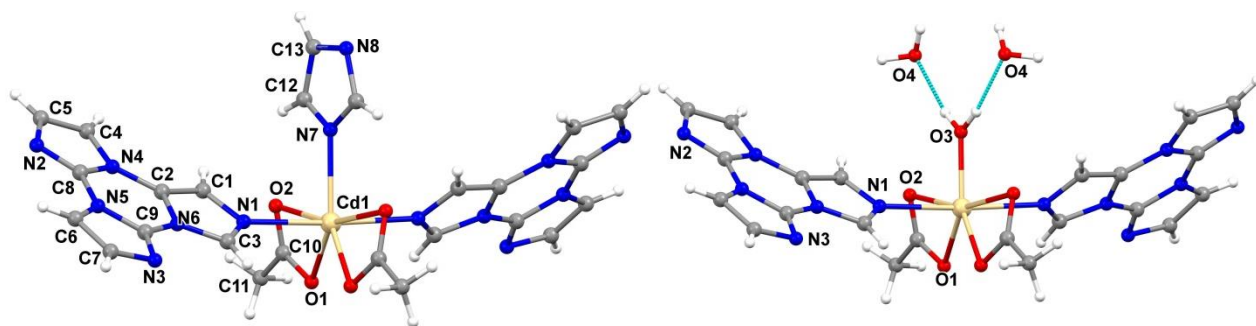


Figure S3. View of major (left) and minor (right) components (75%/25%) in structure **11**.

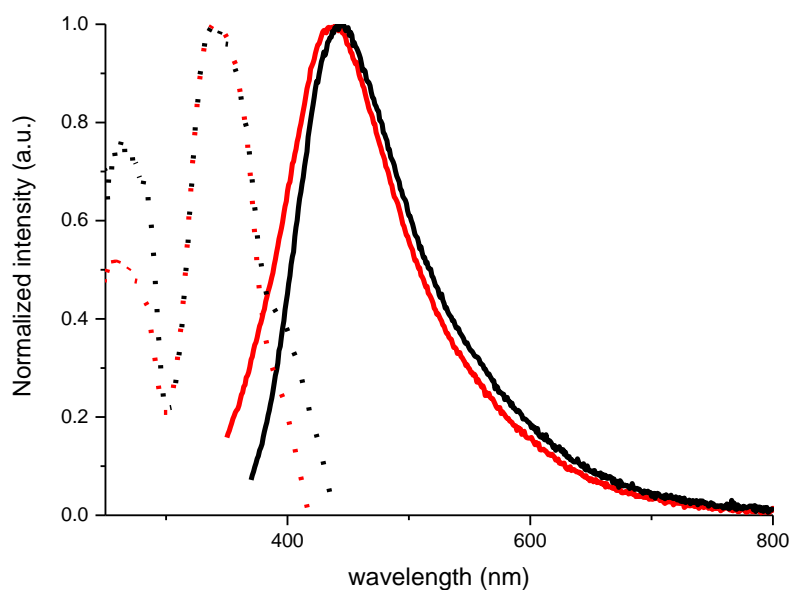


Figure S4. Normalized excitation (dotted line) and emission (continuous line) spectra of **4** at 298 K: $\lambda_{\text{exc}}=330$ nm (red line), $\lambda_{\text{exc}}=350$ nm (black line); $\lambda_{\text{em}}=437$ nm (red line) and $\lambda_{\text{em}}=460$ nm (black line).

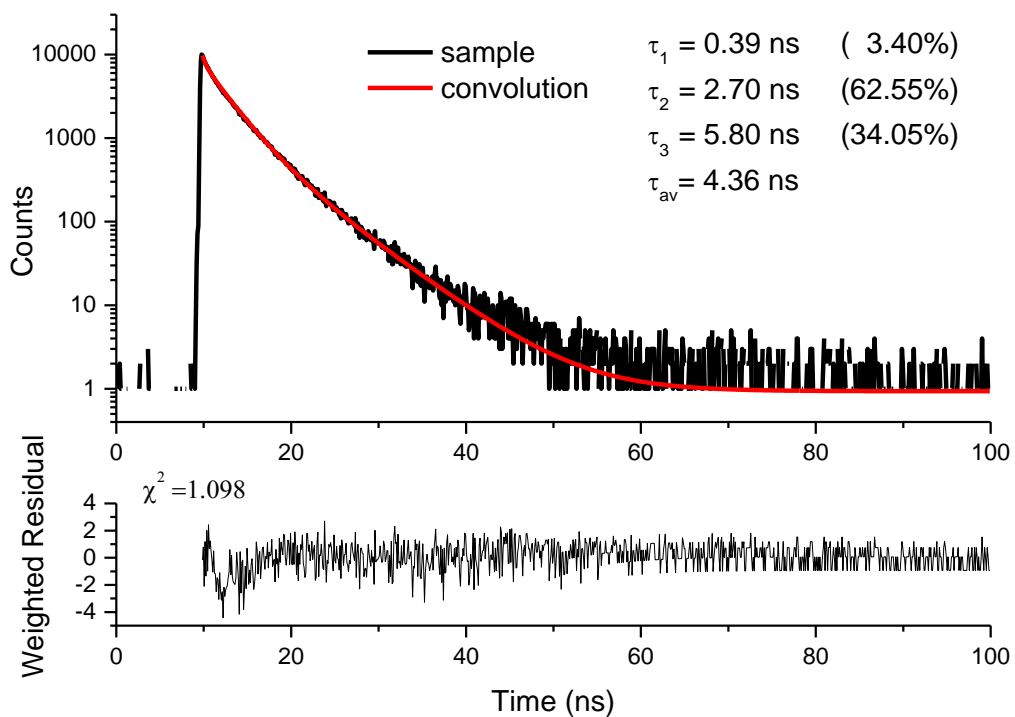


Figure S5. Lifetime measurement ($\lambda_{\text{exc}} = 375$ nm, $\lambda_{\text{em}} = 439$ nm) of **4** at 298 K.

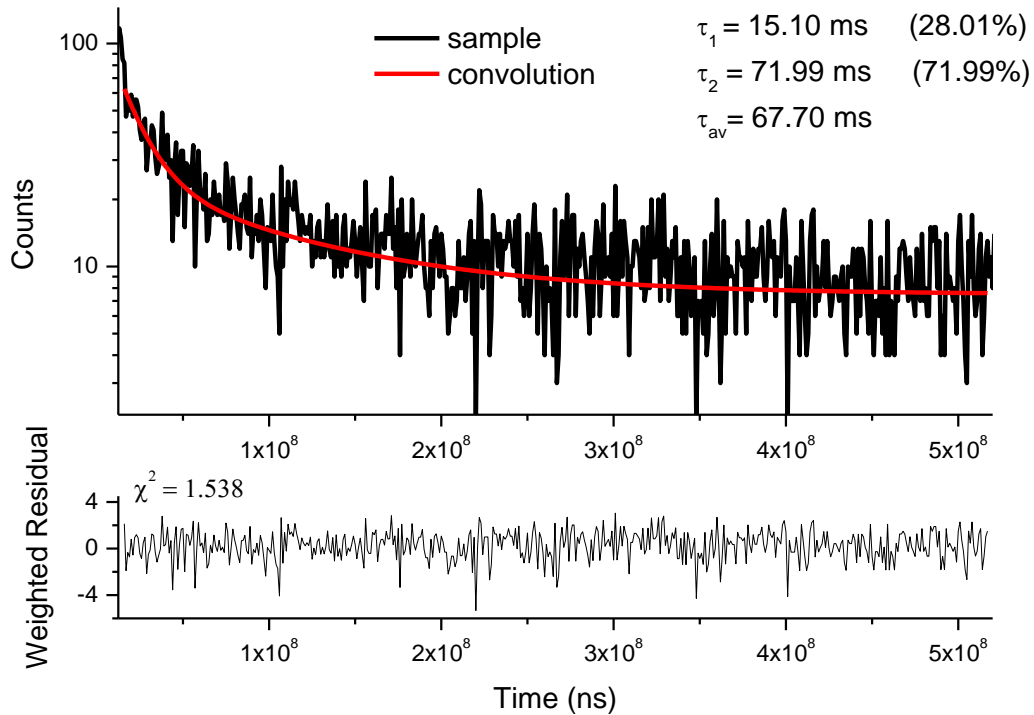


Figure S6. Lifetime measurement ($\lambda_{exc} = 330 \text{ nm}$, $\lambda_{em} = 550 \text{ nm}$) of **4** at 298 K.

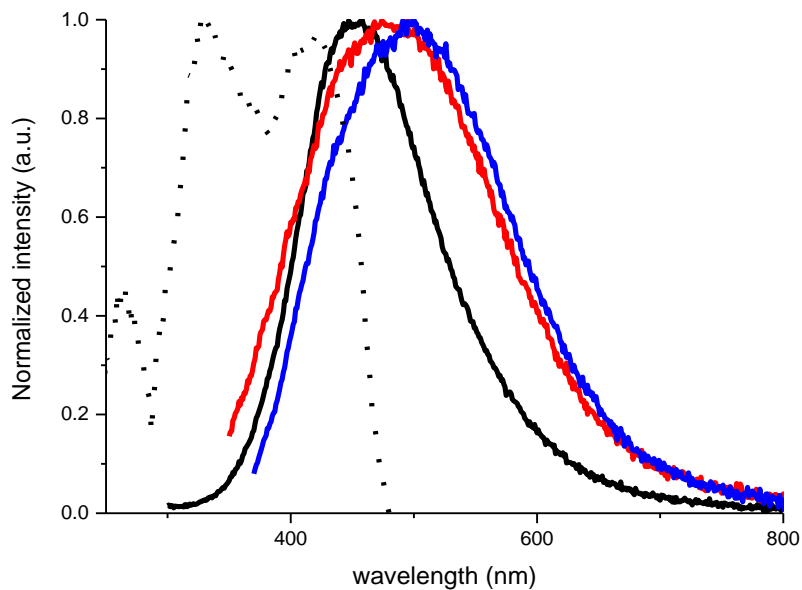


Figure S7. Normalized excitation (dotted line) and emission (continuous line) spectra of **4** at 77 K: $\lambda_{exc}=280 \text{ nm}$ (black line), $\lambda_{exc}=330 \text{ nm}$ (red line), $\lambda_{exc}=350 \text{ nm}$ (blue line); $\lambda_{em}=498 \text{ nm}$ (black line).

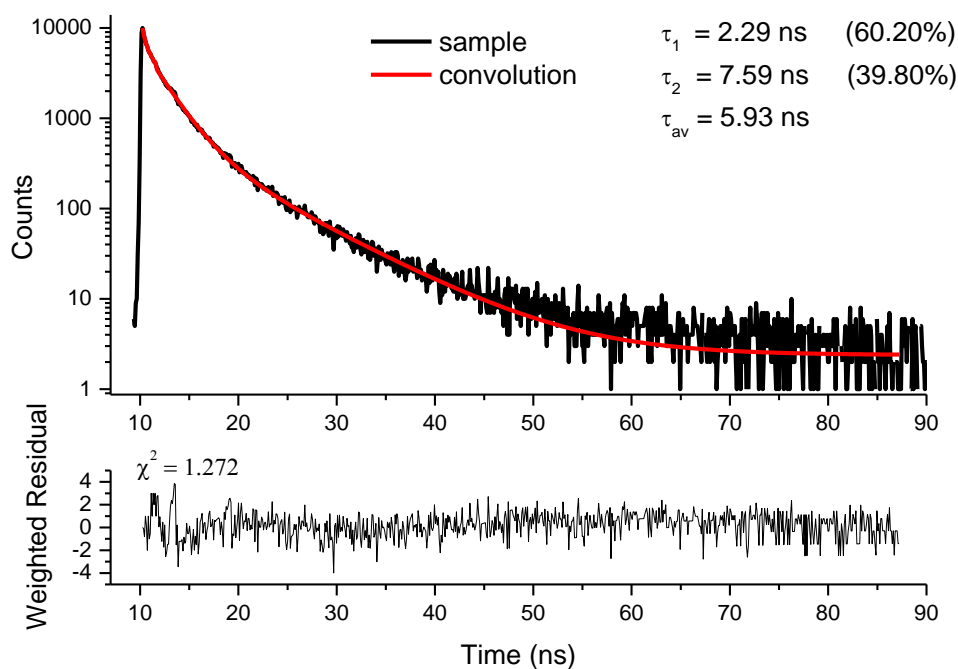


Figure S8. Lifetime measurement ($\lambda_{exc} = 375 \text{ nm}$, $\lambda_{em} = 430 \text{ nm}$) of **4** at 77 K.

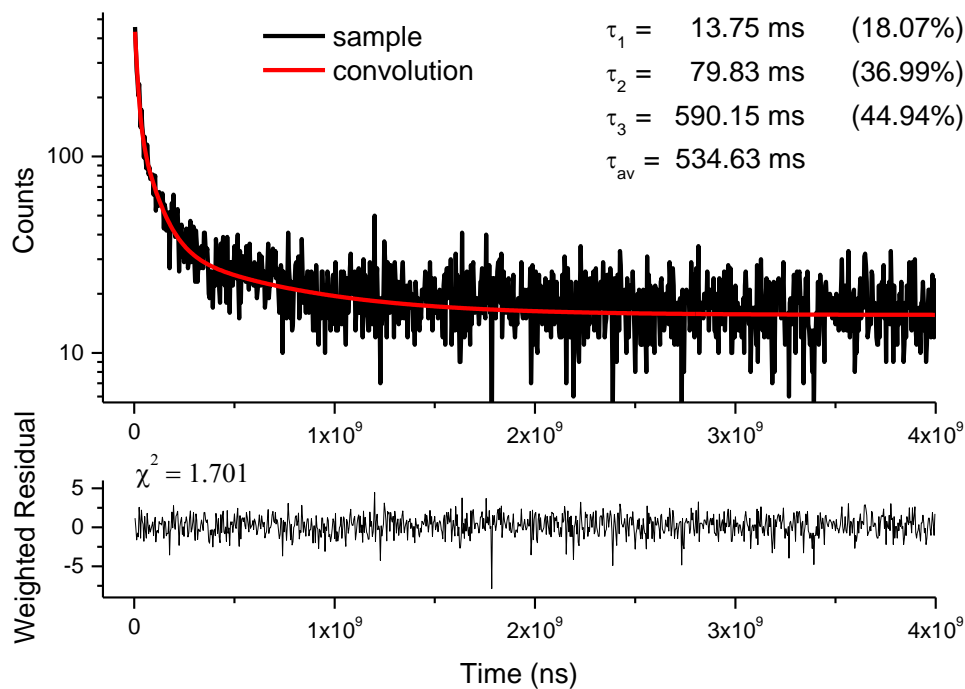


Figure S9. Lifetime measurement ($\lambda_{exc} = 330 \text{ nm}$, $\lambda_{em} = 498 \text{ nm}$) of **4** at 77 K.

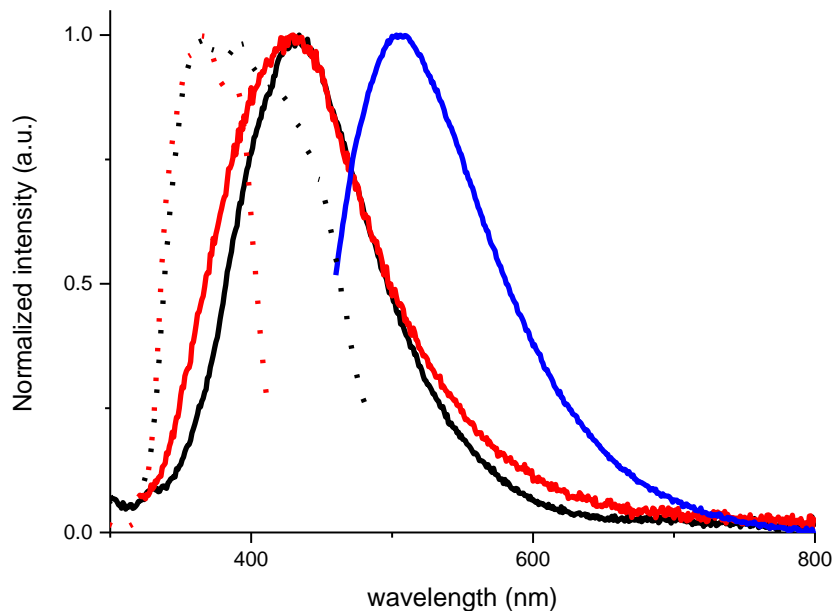


Figure S10. Normalized excitation (dotted line) and emission (continuous line) spectra of **5** at 298 K: $\lambda_{\text{exc}} = 280$ nm (black line), $\lambda_{\text{exc}} = 300$ nm (red line), $\lambda_{\text{exc}} = 440$ nm (blue line); $\lambda_{\text{em}} = 432$ nm (red line), $\lambda_{\text{em}} = 505$ nm (black line).

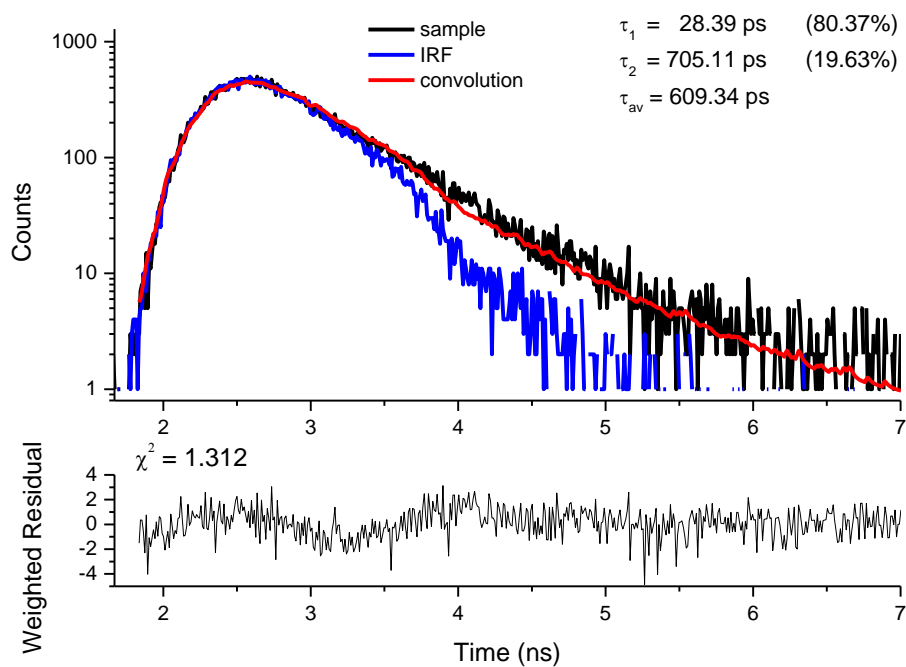


Figure S11. Lifetime measurement ($\lambda_{\text{exc}} = 330$ nm, $\lambda_{\text{em}} = 377$ nm) of **5** at 298 K.

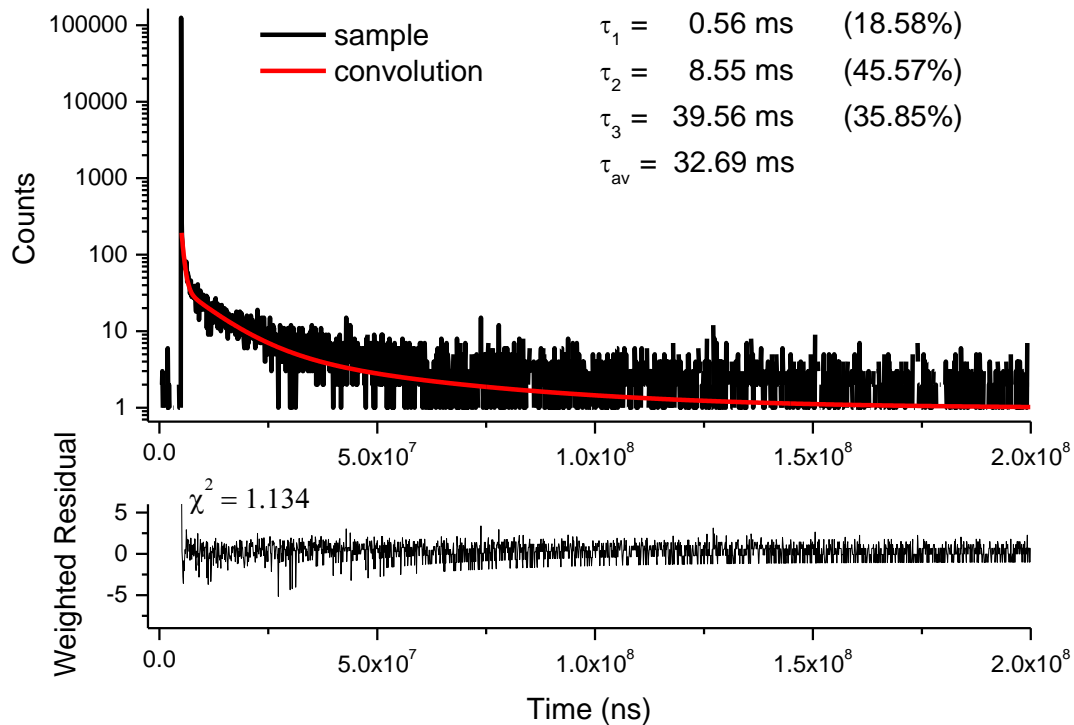


Figure S12. Lifetime measurement ($\lambda_{\text{exc}} = 340 \text{ nm}$, $\lambda_{\text{em}} = 506 \text{ nm}$) of **5** at 298 K.

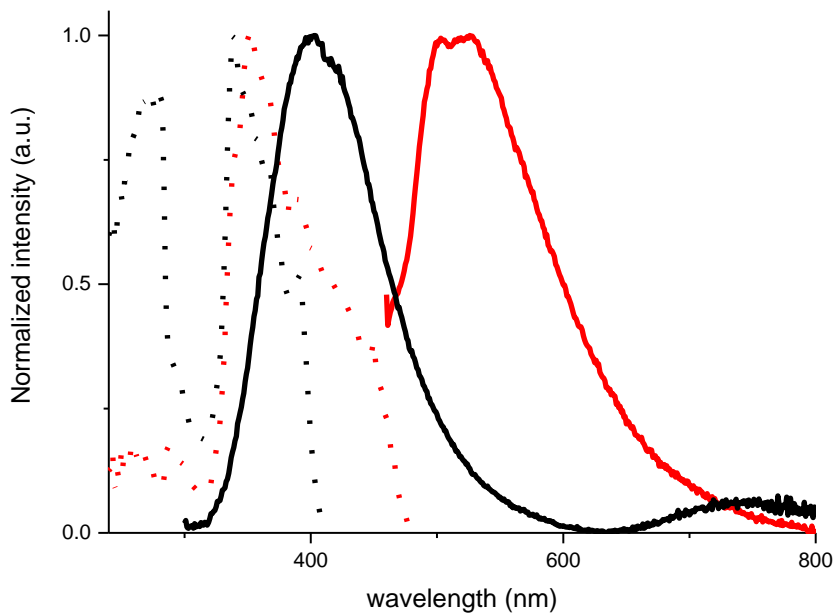


Figure S13. Normalized excitation (dotted line) and emission (continuous line) spectra of **5** at 77 K: $\lambda_{\text{exc}} = 280 \text{ nm}$ (black line), $\lambda_{\text{exc}} = 450 \text{ nm}$ (red line); $\lambda_{\text{em}} = 424 \text{ nm}$ (black line), $\lambda_{\text{em}} = 500 \text{ nm}$ (red line).

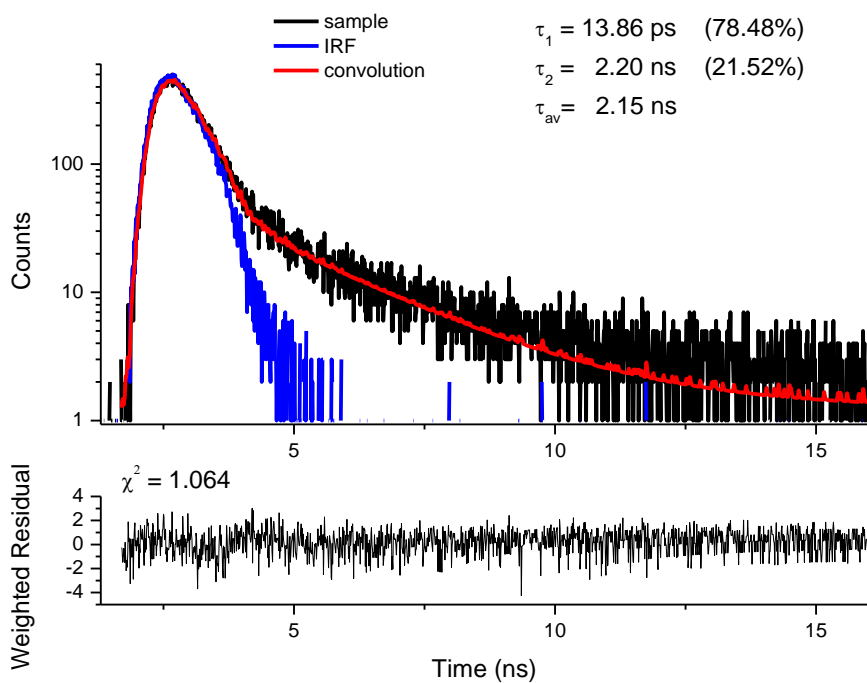


Figure S14. Lifetime measurement ($\lambda_{exc} = 300 \text{ nm}$, $\lambda_{em} = 377 \text{ nm}$) of **5** at 77 K.

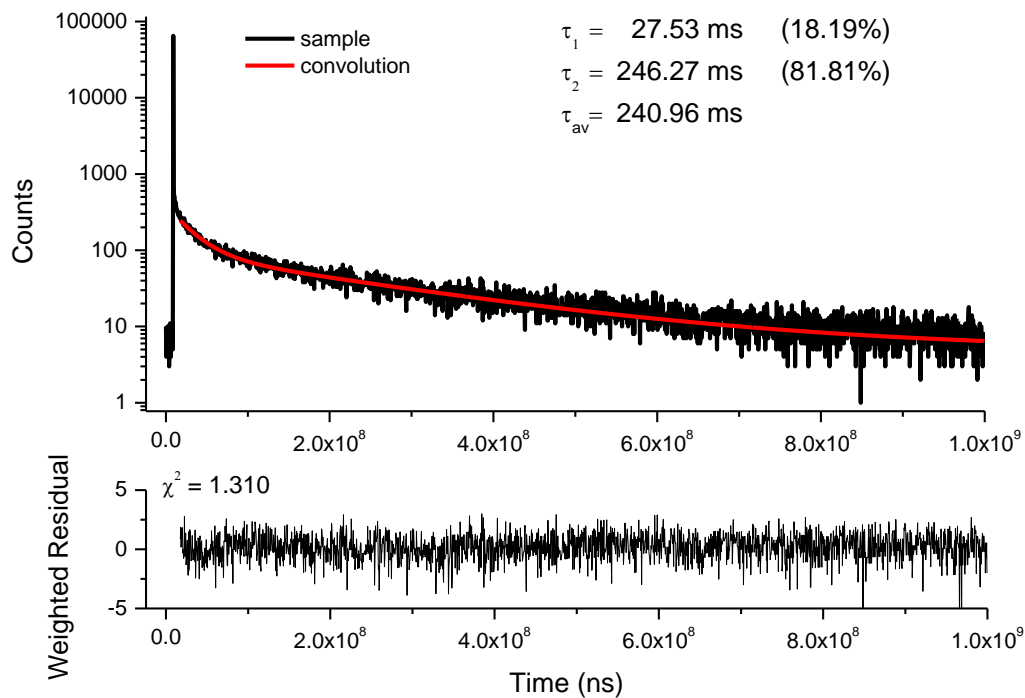


Figure S15. Lifetime measurement ($\lambda_{exc} = 340 \text{ nm}$, $\lambda_{em} = 500 \text{ nm}$) of **5** at 77 K.

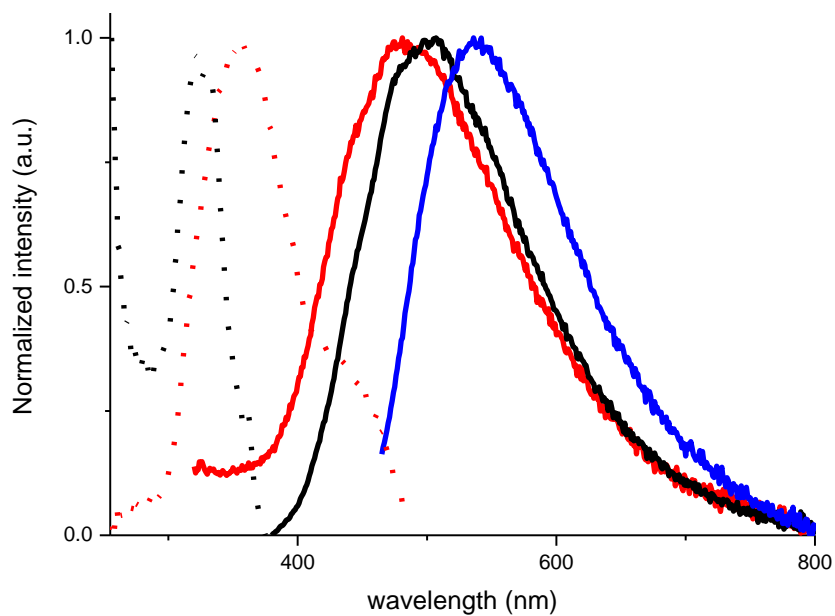


Figure S16. Normalized excitation (dotted line) and emission (continuous line) spectra of **10** at 298 K: $\lambda_{\text{exc}} = 300$ nm (red line), $\lambda_{\text{exc}} = 360$ nm (black line), $\lambda_{\text{exc}} = 450$ nm (blue line); $\lambda_{\text{em}} = 390$ nm (black line), $\lambda_{\text{em}} = 505$ nm (red line).

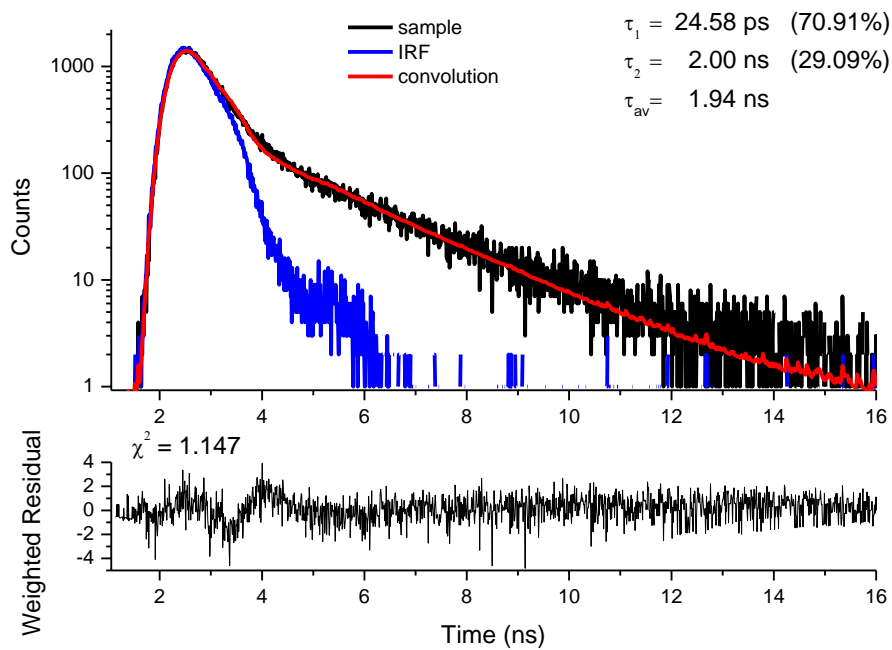


Figure S17. Lifetime measurement ($\lambda_{\text{exc}} = 300$ nm, $\lambda_{\text{em}} = 480$ nm) of **10** at 298 K.

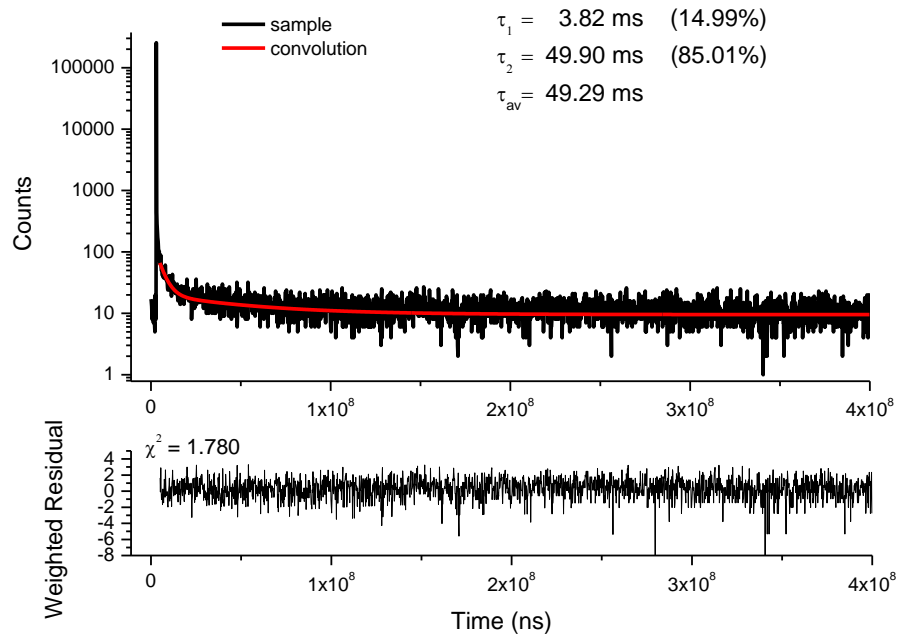


Figure S18. Lifetime measurement ($\lambda_{exc} = 360 \text{ nm}$, $\lambda_{em} = 600 \text{ nm}$) of **10** at 298 K.

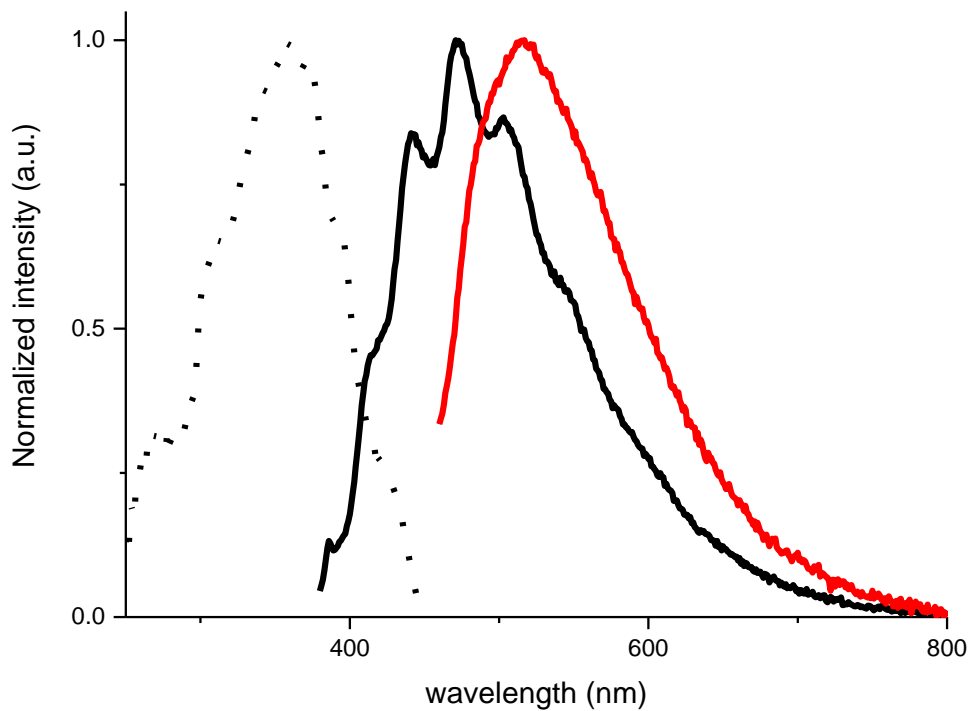


Figure S19. Normalized excitation (dotted line) and emission (continuous line) spectra of **10** at 77 K: $\lambda_{exc} = 360 \text{ nm}$ (black line), $\lambda_{exc} = 440 \text{ nm}$ (red line); $\lambda_{em} = 473 \text{ nm}$ (black line).

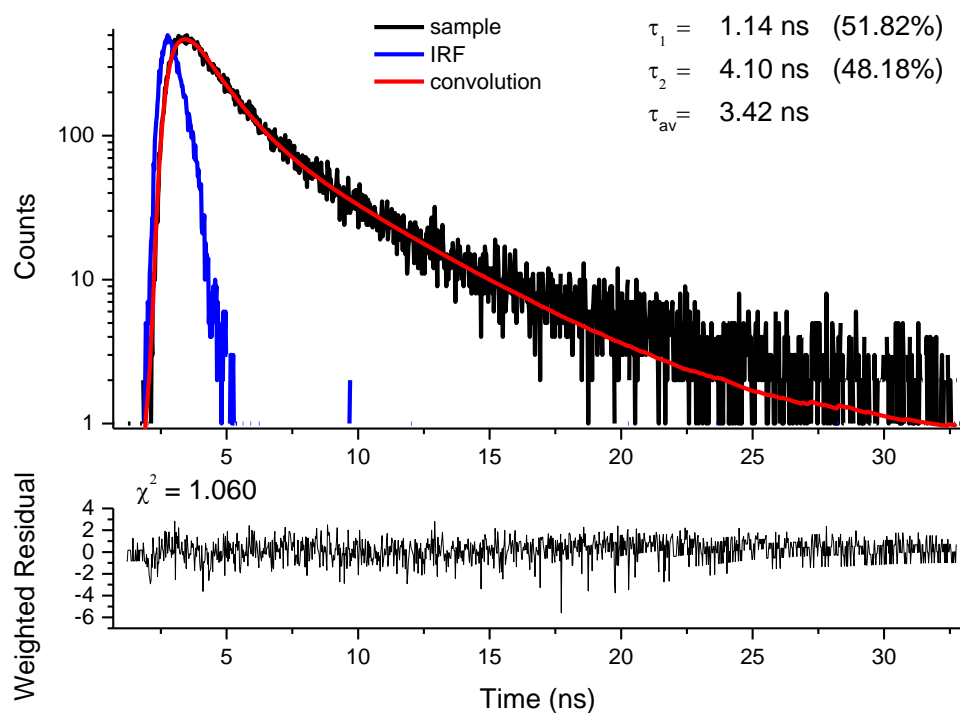


Figure S20. Lifetime measurement ($\lambda_{exc} = 300 \text{ nm}$, $\lambda_{em} = 480 \text{ nm}$) of **10** at 77 K.

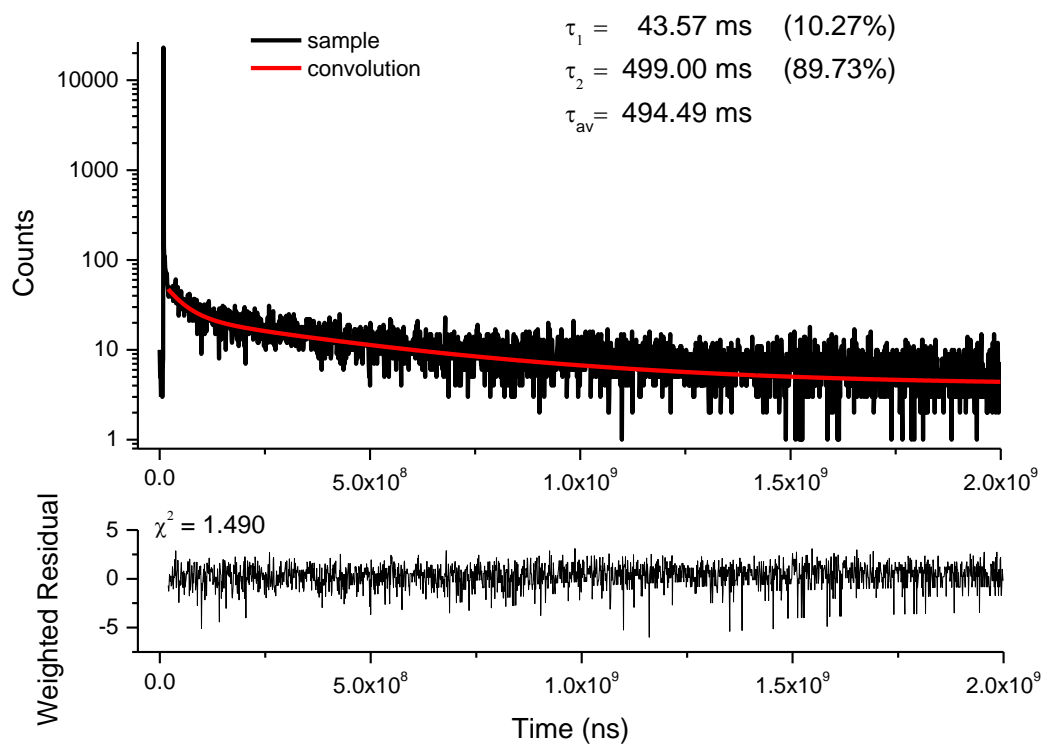


Figure S21. Lifetime measurement ($\lambda_{exc} = 300 \text{ nm}$, $\lambda_{em} = 600 \text{ nm}$) of **10** at 77 K.