Data in Brief 21 (2018) 449–465

Contents lists available at ScienceDirect

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Data Article

2-(1,3-Oxazolin-2-yl)pyridine and 2,6-bis (1,3-oxazolin-2-yl) pyridine

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ARTICLE INFO

Article history:
Received 20 July 2018
Received in revised form
17 September 2018
Accepted 30 September 2018
Available online 4 October 2018

Keywords:
Ligands
Oxazoline
Pyridine
Conformation
Association

ABSTRACT

The data presented in this article are related to research articles "Titanium and vanadium catalysts with oxazoline ligands for ethylene-norbornene (co)polymerization (Ochędzan-Siodłak et al., 2018). For the title compounds, 2-(1,3-oxazolin-2-yl)pyridine (Py-ox) and 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box), the single-crystal X-ray diffraction measurement together with NMR, GC, MS, DSC analysis, like also the method of crystallization are presented.

Specifications table

Subject area	*Chemistry*
More specific subject area	*Organic Chemistry, Ligands for Catalysts*
Type of data	*Figures, tables, text file.*
	X-ray (table, figures), GC–MS (Figures), 13*C NMR (figures), DSC (figures), synthesis (text)*

DOI of original article: https://doi.org/10.1016/j.eurpolymj.2018.07.019
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E-mail address: wsiodlak@uni.opole.pl (W. Ochędzan-Siodłak).

https://doi.org/10.1016/j.dib.2018.09.129

How data was acquired	*X-ray (Xcalibur diffractometer),* *NMR (Bruker Ultrashield spectrometer 400 MHz, solvent DMSO-d6),* *GC–MS (Hewlett Packard HP7890 A GC system)* *DSC (2010 TA calorimeter)*
Data format	*X-ray (analyzed), GC–MS (raw), NMR (raw), DSC (raw)*
Experimental factors	*Crystallization at room temperature. Py-ox - highly anhydrous toluene/ hexane mixture, Py-box - DMSO-d6 in NMR tube.*
Experimental features	*Highly anhydrous condition for crystals are required.*
Data source location	*City: Opole, Country: Poland, Latitude: N 50°40′23.981″, Longitude: E 17°55′53.173′, (Lat,Long: 50.673328, 17.93143699999996),*
Data accessibility	*The Cambridge Crystallographic Data Centre no. CCDC 1815355 and CCDC 1580983* (http://www.ccdc.cam.ac.uk/conts/retrieving.html, email:deposit@ccdc.cam.ac.uk.).

Value of the data

- X-Ray structural information for Py-ox and Py-box compounds not coordinated by metal atom is presented.
- Conformation and association pattern in the crystal state is shown.
- Crystallization methods are shown.
- Purification for Py-ox is improved.

1. Data

The presented compounds, 2-(1,3-oxazolin-2-yl)pyridine (Py-ox) and 2,6-bis(1,3-oxazolin-2-yl) pyridine (Py-box), are commonly applied as ligands for complexes with transition metals: cobalt [2], rhenium [3], platinum and palladium [4,5] for Py-ox, as well as copper [6,7], ruthenium [8–11], rhodium [12], manganese [13], silver [14], nickel [15], cobalt [16], terbium [17], and iron [18], in the case of Py-box. Some of them reveal catalytic properties. In our work, the Py-ox and Py-box compounds were applied as ligands for titanium and vanadium complexes, which turned out to be active in polymerization of ethylene and copolymerization of ethylene with norbornene [1]. The X-Ray information for Py-ox and Py-box compounds can be important for comparative studies, to show differences between these compounds not coordinated by metal atom and applied as ligands. It can help to understand dependence between the structure and activity of the designed complexes. The presented crystallization methods are worth to notice. The improved method of purification enable to obtain the studied compound of high quality.

2. Experimental design, materials and methods

2.1. Synthesis

2.1.1. 2-(1,3-oxazolin-2-yl)pyridine (Py-ox)

The synthesis was performed mainly according to Stokes et al. [19]. The crude product was subjected to flash chromatography using the MeOH: AcOEt (1:4) mixture as eluent. Yield 60%. Elemental analysis $C_8H_8N_2O$ results: calculated C 64.85%, H 5.44%, N 18.91%, experimental C 64.92%, H 5.45%, N 19.09%. ^{1}H NMR (400 MHz, DMSO-*d6*) δ 8.65 (1H, J = 4.5 Hz, d), 7.99 (1H, J = 8.0 Hz, d), 7.93 (1H, J = 7.8 Hz, td), 7.54 (1H, m), 4.45 (2H, J = 9.6 Hz, t), 4.00 (2H, J = 9.6 Hz, t). ^{13}C NMR (400 MHz, DMSO-*d6*) δ 162.98, 149.53, 146.52, 137.09, 125.90, 123.80, 67.66, 54.61. GC–MS M^+ 148 m/e. Melting temperature 57.0 (54.6–60.0) °C.

2.1.2. 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box)

The synthesis was performed mainly according to Zhu et al. [20]. Yield 76%. Elemental analysis $C_{11}H_{11}N_3O_2$ results: calculated C 64.82%, H 5.10%, N 19.34%, experimental: C 64.88%, H 5.12%, N 19.39%. ^{1}H NMR (400 MHz, DMSO-*d6*) δ 8.11 (2H, J_1 = 1.2 Hz, J_2 = 7.2 Hz, t), 8.02(1H, J_1 = 6.4 Hz, J_2 = 2.4 Hz, q), 4.45 (4H, J = 9.6 Hz, t), 4.01 (4H, J = 9.6 Hz, t). ^{13}C NMR (400 MHz, DMSO-*d6*) δ 163.10, 147.01, 138.46, 126.00, 68.28, 55.13. GC–MS M^+ 217 m/e. Melting temperature 160.6 (159.4–163.0) °C.

2.2. Crystallization

2.2.1. 2-(1,3-oxazolin-2-yl)pyridine (Py-ox)

The crystals were obtained at room temperature from highly anhydrous toluene/hexane mixture. The solvents were freshly distilled over sodium. The highly anhydrous conditions are crucial. All operations were performed in a glove-box filled with argon. Py-ox (20 mg) was placed in a 5 ml snap cap vial with plastic cap and dissolved in toluene (1 ml). Then, hexane (1 ml) was added and the solution was left to stand at room temperature for a week.

2.2.2. 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box)

The crystals of appropriate quality were obtained at room temperature from DMSO-d6 solution by long standing time in NMR tube. All operations were performed in a glove-box filled with argon. DMSO-d6 solvent from sealed glass ampoules was applied. Py-box (15 mg) and DMSO-d6 (0.6 ml) was placed in NMR tube and the cap was sealed by a parafilm. The solution was left to stand at room temperature for a month.

2.3. X-ray

The single-crystal X-ray diffraction experiments were performed at 293.0(1)K on the Xcalibur diffractometer, equipped with a CCD area detector and a graphite monochromator for the MoKα

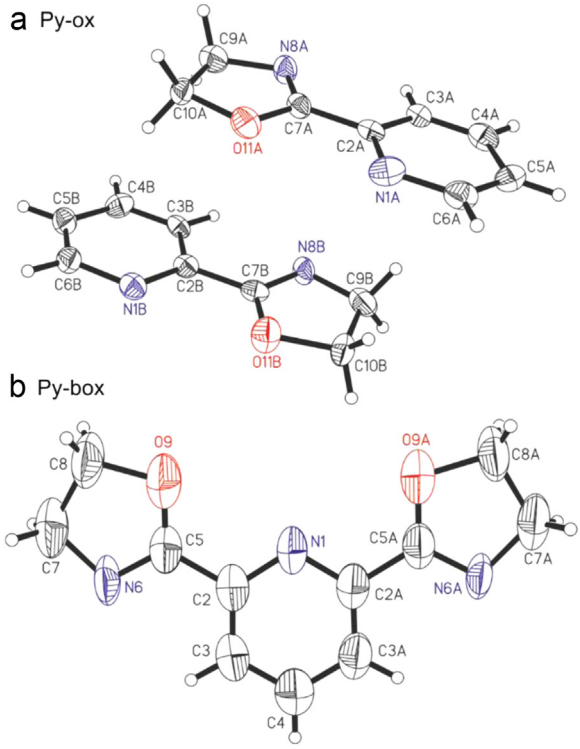

Fig. 1. Molecular conformation of Py-ox (a) and Py-box (b) with atom labeling and the displacement ellipsoids at 50% probability level.

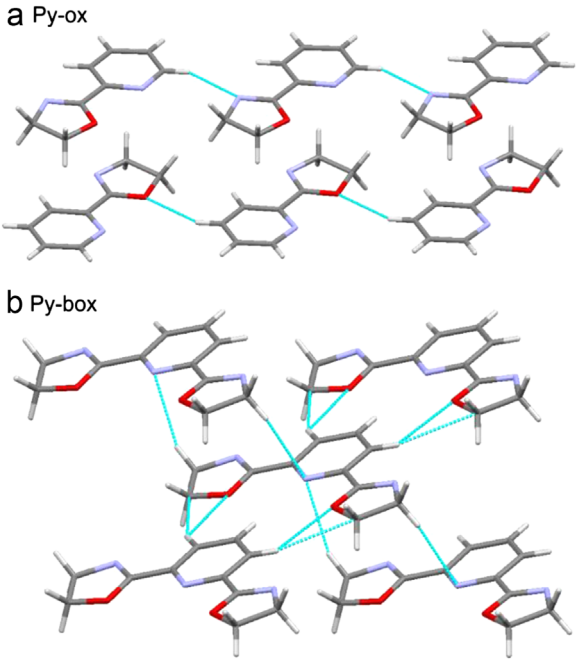

Fig. 2. Association of molecule in the crystal structure. Hydrogen contacts are marked by dashed lines. The numbers of atoms and distances are omitted for clarity. All geometric parameters are in Table 2.

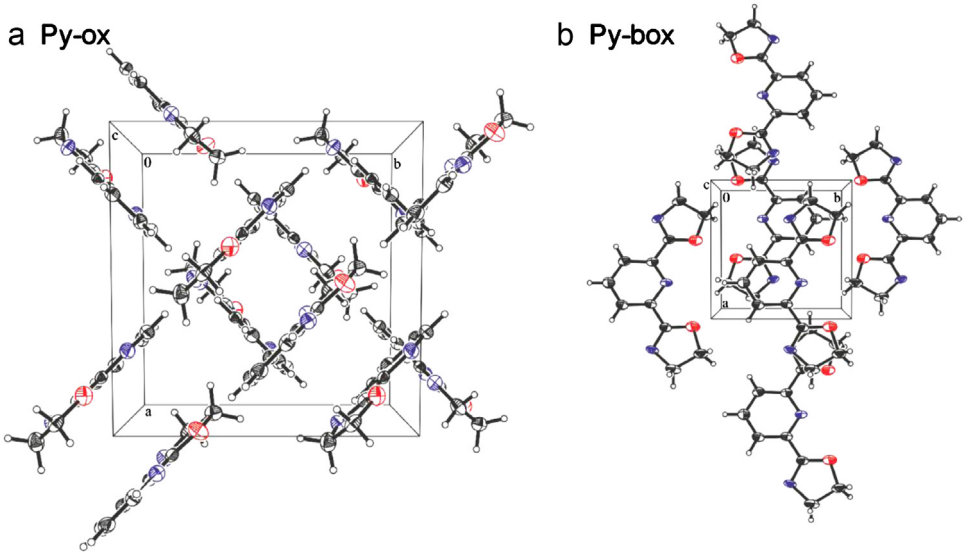

Fig. 3. The crystal packing scheme of the title compounds. A view along the *c* axis of the crystals packing.

radiation. The reciprocal space was explored by ω scans with detector positions at 60 mm distance from the crystal. The diffraction data processing of studied compounds (Lorentz and polarization corrections were applied) were performed using the CrysAlis CCD [21,22]. Both structures Py-ox and Py-box were solved in the C2 and P2/n space group respectively, by direct methods and refined by a

Table 1
X-ray experimental details for 2-(1,3-oxazolin-2-yl)pyridine (Py-ox) and 2,6-bis(1,3-oxazolin-2-yl) pyridine (Py-box).

	Py-ox	**Py-box**
Chemical formula	$C_8H_8N_2O$	$C_{11}H_{11}N_3O_2$
M_r	148.16	217.23
Crystal system, space group	Monoclinic, *C*2	Monoclinic, *P*2/*n*
a, *b*, *c* (Å)	10.2571 (7), 10.0159 (6), 14.4647 (9)	6.4904 (8), 6.5835 (11), 11.9080 (19)
β (°)	97.497 (6)	94.215 (13)
V (Å^3)	1473.31 (16)	507.45 (13)
Z	8	2
Measurement temperature	293.0(1)	293.0(1)
μ (mm^{-1})	0.09	0.10
Crystal size (mm)	0.4 × 0.3 × 0.2	0.5 × 0.4 × 0.3
Crystal colour	Colourless	
Crystal description	Plate	
Data collection		
Radiation wavelength	0.71073	
Radiation type	MoKα	
Source	fine-focus sealed tube	
Measurement device type	Xcalibur	
Detector area resolution	1024 × 1024 with blocks 2 × 2	
Absorption correction	–	
No. of measured, independent and observed [$I > 2\sigma(I)$] reflections	5,034, 2786, 1587	3,172, 993, 459
R_{int}	0.018	0.048
$(\sin\theta/\lambda)_{max}$ (Å^{-1})	0.617	0.616
Refinement		
$R[F^2 > 2\sigma(F^2)]$, $wR(F^2)$, *S*	0.030, 0.077, 0.86	0.057, 0.173, 0.87
No. of reflections	2786	993
No. of parameters	200	75
No. of restraints	1	0
$\Delta\rho_{max}$, $\Delta\rho_{min}$ (e Å^{-3})	0.11, −0.09	0.22, −0.18

Table 2
Selected geometric parameters (Å, °) for Py-ox and Py-box molecules.

Structure 2 (Py-ox)			
N1A-C2A	1.386 (7)	C5B-H5B	0.9300
N1A-C6A	1.394 (6)	C7A-N8A	1.292 (7)
C2A-C3A	1.367 (8)	C7A-O11A	1.314 (6)
C2A-H2A	0.9300	C6B-C7B	1.478 (7)
N1B-C6B	1.360 (6)	N8A-C9A	1.423 (7)
N1B-C2B	1.393 (7)	C7B-N8B	1.289 (6)
C3A-C4A	1.400 (8)	C7B-O11B	1.292 (7)
C3A-H3A	0.9300	C9A-C10A	1.518 (8)
C2B-C3B	1.344 (9)	C9A-H9AA	0.9700
C2B-H2B	0.9300	C9A-H9AB	0.9700
C4A-C5A	1.307 (8)	N8B-C9B	1.427 (7)
C4A-H4A	0.9300	C10A-O11A	1.470 (7)
C3B-C4B	1.361 (9)	C10A-H10A	0.9700
C3B-H3B	0.9300	C10A-H10B	0.9700
C5A-C6A	1.335 (6)	C9B-C10B	1.513 (8)
C5A-H5A	0.9300	C9B-H9BA	0.9700
C4B-C5B	1.345 (7)	C9B-H9BB	0.9700
C4B-H4B	0.9300	O11B-C10B	1.488 (6)
C6A-C7A	1.464 (7)	C10B-H10C	0.9700
C5B-C6B	1.342 (6)	C10B-H10D	0.9700
C2A-N1A-C6A	116.2 (5)	C5B-C6B-C7B	119.1 (5)

Table 2 (*continued*)

Structure 2 (Py-ox)			
C3A-C2A-N1A	122.5 (6)	N1B-C6B-C7B	117.4 (5)
C3A-C2A-H2A	118.8	C7A-N8A-C9A	106.3 (5)
N1A-C2A-H2A	118.8	N8B-C7B-O11B	119.6 (6)
C6B-N1B-C2B	115.8 (5)	N8B-C7B-C6B	120.4 (6)
C2A-C3A-C4A	116.1 (6)	O11B-C7B-C6B	120.0 (5)
C2A-C3A-H3A	122.0	N8A-C9A-C10A	106.9 (6)
C4A-C3A-H3A	122.0	N8A-C9A-H9AA	110.3
C3B-C2B-N1B	121.2 (6)	C10A-C9A-H9AA	110.3
C3B-C2B-H2B	119.4	N8A-C9A-H9AB	110.3
N1B-C2B-H2B	119.4	C10A-C9A-H9AB	110.3
C5A-C4A-C3A	123.3 (6)	H9AA-C9A-H9AB	108.6
C5A-C4A-H4A	118.3	C7B-N8B-C9B	105.7 (5)
C3A-C4A-H4A	118.3	O11A-C10A-C9A	101.9 (4)
C2B-C3B-C4B	120.0 (6)	O11A-C10A-H10A	111.4
C2B-C3B-H3B	120.0	C9A-C10A-H10A	111.4
C4B-C3B-H3B	120.0	O11A-C10A-H10B	111.4
C4A-C5A-C6A	119.6 (6)	C9A-C10A-H10B	111.4
C4A-C5A-H5A	120.2	H10A-C10A-H10B	109.3
C6A-C5A-H5A	120.2	N8B-C9B-C10B	106.8 (4)
C5B-C4B-C3B	120.2 (6)	N8B-C9B-H9BA	110.4
C5B-C4B-H4B	119.9	C10B-C9B-H9BA	110.4
C3B-C4B-H4B	119.9	N8B-C9B-H9BB	110.4
C5A-C6A-N1A	122.4 (5)	C10B-C9B-H9BB	110.4
C5A-C6A-C7A	118.1 (5)	H9BA-C9B-H9BB	108.6
N1A-C6A-C7A	119.6 (5)	C7A-O11A-C10A	106.8 (5)
C6B-C5B-C4B	119.1 (5)	C7B-O11B-C10B	106.1 (5)
C6B-C5B-H5B	120.5	O11B-C10B-C9B	101.7 (5)
C4B-C5B-H5B	120.5	O11B-C10B-H10C	111.4
N8A-C7A-O11A	118.1 (5)	C9B-C10B-H10C	111.4
N8A-C7A-C6A	122.8 (5)	O11B-C10B-H10D	111.4
O11A-C7A-C6A	119.1 (6)	C9B-C10B-H10D	111.4
C5B-C6B-N1B	123.6 (5)	H10C-C10B-H10D	109.3
Symmetry code(s): (i) $-x+1/2, y, -z+1/2$.			
Structure 1 (Py-Box)			
N1-C2^{i}	1.355 (3)	C5-O9	1.316 (4)
N1-C2	1.355 (3)	N6-C7	1.448 (4)
C2-C3	1.381 (4)	C7-C8	1.502 (4)
C2-C5	1.468 (4)	C7-H7A	0.9700
C3-C4	1.380 (4)	C7-H7B	0.9700
C3-H3	0.9300	C8-O9	1.471 (3)
C4-C3^{i}	1.380 (4)	C8-H8A	0.9700
C4-H4	0.9300	C8-H8B	0.9700
C5-N6	1.293 (3)		
C2^{i}-N1-C2	116.0 (4)	N6-C7-C8	105.1 (2)
N1-C2-C3	123.4 (3)	N6-C7-H7A	110.7
N1-C2-C5	116.5 (3)	C8-C7-H7A	110.7
C3-C2-C5	120.0 (2)	N6-C7-H7B	110.7
C4-C3-C2	119.5 (3)	C8-C7-H7B	110.7
C4-C3-H3	120.2	H7A-C7-H7B	108.8
C2-C3-H3	120.2	O9-C8-C7	104.0 (3)
C3^{i}-C4-C3	118.1 (4)	O9-C8-H8A	110.9
C3^{i}-C4-H4	121.0	C7-C8-H8A	110.9
C3-C4-H4	121.0	O9-C8-H8B	110.9
N6-C5-O9	118.1 (2)	C7-C8-H8B	110.9
N6-C5-C2	121.0 (3)	H8A-C8-H8B	109.0
O9-C5-C2	120.9 (2)	C5-O9-C8	105.8 (2)
C5-N6-C7	106.9 (2)		

full-matrix least-squares method using SHELXL14 program [23,24]. The H atoms were found based on geometrical parameters. In both structures H atoms were refined using a riding model. The structure drawings were prepared using SHELXTL and Mercury programs [25] (Figs. 1–3 and Tables 1,2).

2.3.1. 2-(1,3-oxazolin-2-yl)pyridine (Py-ox)

checkCIF/PLATON report

Structure factors have been supplied for datablock(s) bd203_c

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No syntax errors found. CIF dictionary Interpreting this report

Datablock: bd203_c

Bond precision: C-C = 0.0084 A Wavelength=0.71073

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alpha=90 beta=97.497(6) gamma=90
Temperature: 293 K

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Hall group	C 2y	C 2y
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Correction method= Not given

Data completeness= 1.81/0.96 Theta(max)= 25.997

R(reflections)= 0.0304(1587) wR2(reflections)= 0.0771(2786)

S = 0.863 Npar= 200

The following ALERTS were generated. Each ALERT has the format
test-name_ALERT_alert-type_alert-level.
Click on the hyperlinks for more details of the test.

Alert level B

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PLAT112_ALERT_2_B ADDSYM Detects New (Pseudo) Symm. Elem         c        100 %Fit
PLAT113_ALERT_2_B ADDSYM Suggests Possible Pseudo/New  Space Group       C2/c Check
PLAT230_ALERT_2_B Hirshfeld Test Diff for   N8B      --C7B       .        8.3 s.u.
PLAT230_ALERT_2_B Hirshfeld Test Diff for   N8B      --C9B       .        8.2 s.u.
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Alert level C

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          From the CIF: _refine_ls_abs_structure_Flack_su    1.000
PLAT230_ALERT_2_C Hirshfeld Test Diff for   O11A     --C10A      .        5.2 s.u.
PLAT230_ALERT_2_C Hirshfeld Test Diff for   N8A      --C7A       .        5.2 s.u.
PLAT230_ALERT_2_C Hirshfeld Test Diff for   C3A      --C4A       .        7.0 s.u.
PLAT230_ALERT_2_C Hirshfeld Test Diff for   O11B     --C10B      .        5.8 s.u.
PLAT234_ALERT_4_C Large Hirshfeld Difference N8A      --C9A              0.17 Ang.
PLAT241_ALERT_2_C High   'MainMol' Ueq as Compared to Neighbors of       O11A Check
PLAT241_ALERT_2_C High   'MainMol' Ueq as Compared to Neighbors of       N1A Check
PLAT241_ALERT_2_C High   'MainMol' Ueq as Compared to Neighbors of       C9A Check
PLAT241_ALERT_2_C High   'MainMol' Ueq as Compared to Neighbors of       O11B Check
PLAT242_ALERT_2_C Low    'MainMol' Ueq as Compared to Neighbors of       C10A Check
PLAT340_ALERT_3_C Low Bond Precision on  C-C Bonds ...............    0.00842 Ang.
PLAT411_ALERT_2_C Short Inter H...H Contact  H3A      ..H3A      .       2.12 Ang.
                                                 1-x,y,1-z  =      2_656 Check
PLAT911_ALERT_3_C Missing FCF Refl Between Thmin & STh/L=    0.600          2 Report
PLAT978_ALERT_2_C Number C-C Bonds with Positive Residual Density.          0 Info
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Alert level G

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PLAT200_ALERT_1_G Reported   _diffrn_ambient_temperature ..... (K)        293 Check
PLAT398_ALERT_2_G Deviating  C-O-C    Angle From 120 for O11A          106.8 Degree
PLAT398_ALERT_2_G Deviating  C-O-C    Angle From 120 for O11B          106.0 Degree
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PLAT910_ALERT_3_G Missing # of FCF Reflection(s) Below Theta(Min).          3 Note
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   0 ALERT level A = Most likely a serious problem - resolve or explain
   5 ALERT level B = A potentially serious problem, consider carefully
  15 ALERT level C = Check. Ensure it is not caused by an omission or oversight
   7 ALERT level G = General information/check it is not something unexpected

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  18 ALERT type 2 Indicator that the structure model may be wrong or deficient
   3 ALERT type 3 Indicator that the structure quality may be low
   4 ALERT type 4 Improvement, methodology, query or suggestion
   0 ALERT type 5 Informative message, check
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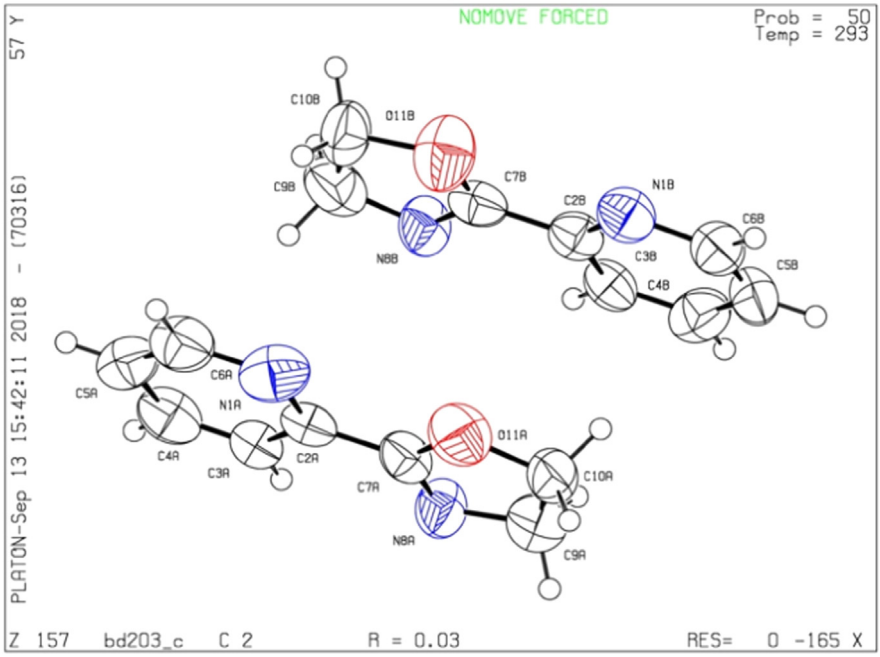
Datablock bd203_c - ellipsoid plot



2.3.2. 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box)

checkCIF/PLATON report

Structure factors have been supplied for datablock(s) BD162_a

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No syntax errors found. CIF dictionary Interpreting this report

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alpha=90 beta=94.215(13) gamma=90
Temperature: 293 K

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Hall group	-P 2yac	-P 2yac
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Sum formula	C11 H11 N3 O2	C11 H11 N3 O2
Mr	217.23	217.23
Dx,g cm-3	1.422	1.422
Z	2	2
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F000'	228.10	
h,k,lmax	8,8,14	8,8,14
Nref	992	993
Tmin,Tmax	0.995,0.997	
Tmin'	0.995	

Correction method= Not given

Data completeness= 1.001 Theta(max)= 25.982

R(reflections)= 0.0572(459) wR2(reflections)= 0.1732(993)

S = 0.870 Npar= 75

The following ALERTS were generated. Each ALERT has the format
test-name_ALERT_alert-type_alert-level.
Click on the hyperlinks for more details of the test.

Alert level C

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PLAT026_ALERT_3_C Ratio Observed / Unique Reflections (too) Low ..        46 %
PLAT241_ALERT_2_C High   'MainMol' Ueq as Compared to Neighbors of       O9 Check
PLAT250_ALERT_2_C Large U3/U1 Ratio for Average U(i,j) Tensor ....       2.7 Note
PLAT340_ALERT_3_C Low Bond Precision on  C-C Bonds ..............    0.0045 Ang.
PLAT906_ALERT_3_C Large K value in the Analysis of Variance ......    13.338 Check
PLAT978_ALERT_2_C Number C-C Bonds with Positive Residual Density.       0 Info
```

Alert level G

```
PLAT072_ALERT_2_G SHELXL First  Parameter in WGHT  Unusually Large      0.10 Report
PLAT199_ALERT_1_G Reported _cell_measurement_temperature ..... (K)      293 Check
PLAT200_ALERT_1_G Reported   _diffrn_ambient_temperature ..... (K)      293 Check
PLAT398_ALERT_2_G Deviating  C-O-C  Angle from 120 Deg for O9         105.9 Degree
PLAT953_ALERT_1_G Reported (CIF) and Actual (FCF) Hmax Differ by .        1 Units
```

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  0 ALERT level A = Most likely a serious problem - resolve or explain
  0 ALERT level B = A potentially serious problem, consider carefully
  6 ALERT level C = Check. Ensure it is not caused by an omission or oversight
  5 ALERT level G = General information/check it is not something unexpected

  3 ALERT type 1 CIF construction/syntax error, inconsistent or missing data
  5 ALERT type 2 Indicator that the structure model may be wrong or deficient
  3 ALERT type 3 Indicator that the structure quality may be low
  0 ALERT type 4 Improvement, methodology, query or suggestion
  0 ALERT type 5 Informative message, check
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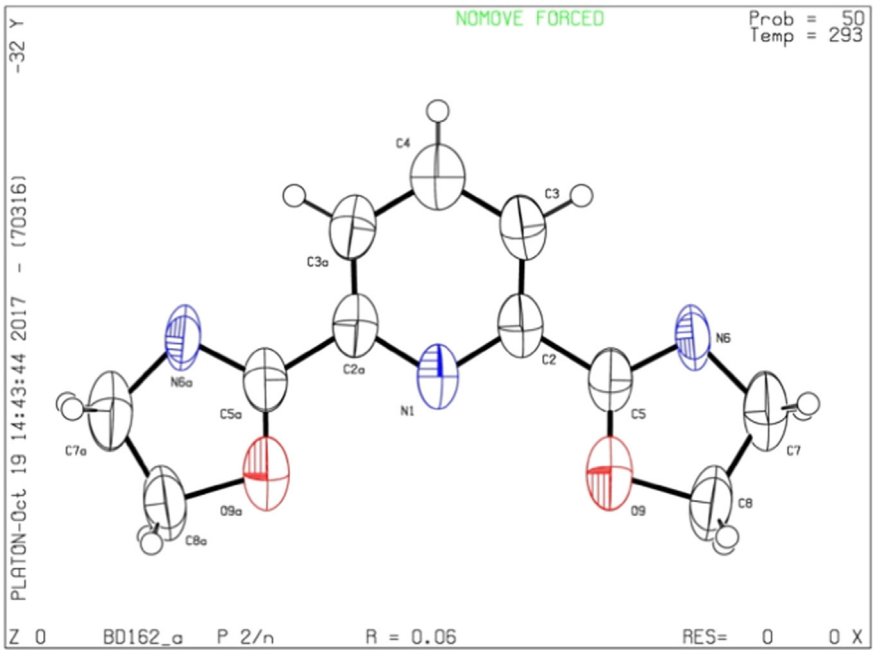
PLATON version of 13/08/2017; check.def file version of 27/07/2017

Datablock BD162_a - ellipsoid plot



2.4. NMR

Bruker Ultrashield spectrometer 400 MHz, solvent DMSO-d6, TMS standard. Concentration: 15 mg in 0.6 ml (Figs. 4–7).

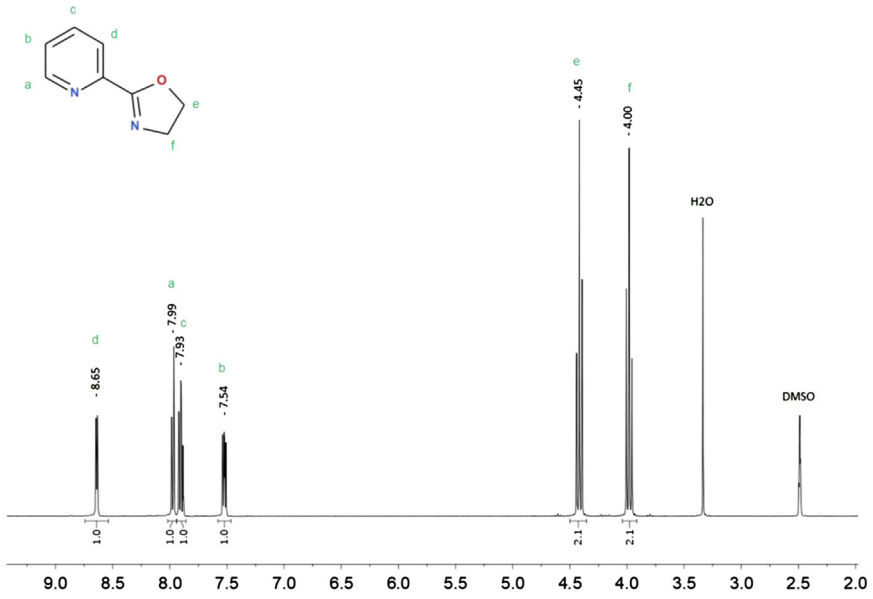


Fig. 4. [1]H NMR spectrum for 2-(1,3-oxazolin-2-yl)pyridine (Py-ox) in DMSO-*d6*.

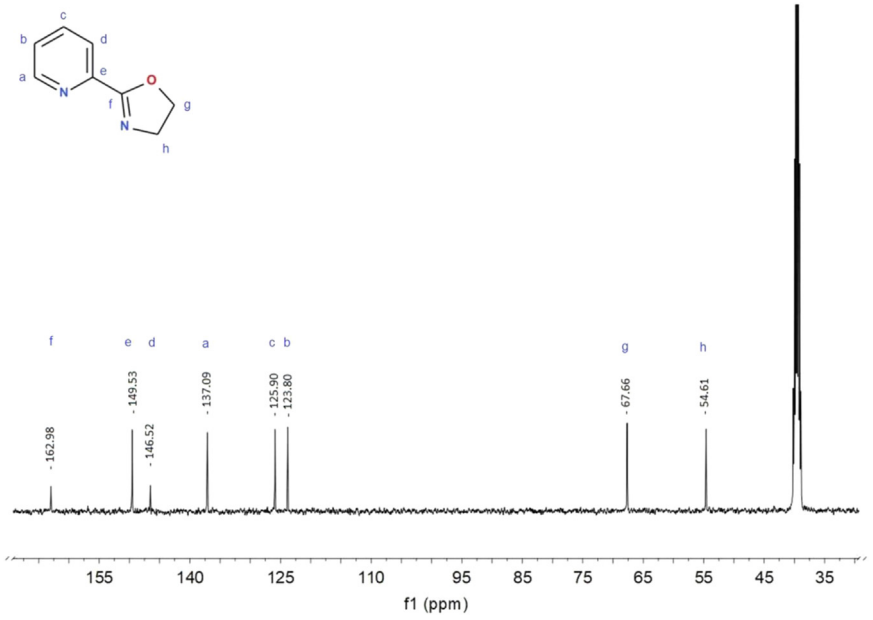


Fig. 5. [13]C NMR spectrum for 2-(1,3-oxazolin-2-yl)pyridine (Py-ox) in DMSO-*d6*.

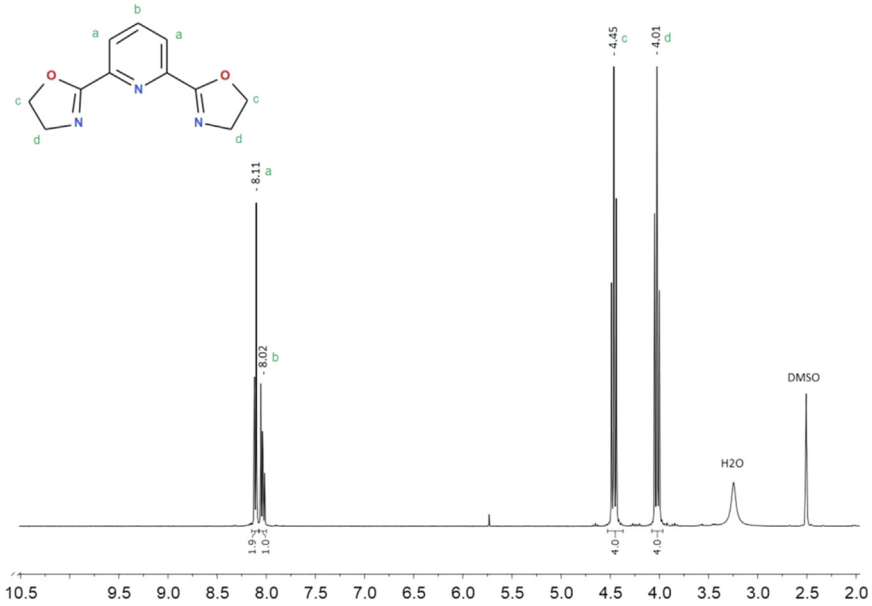


Fig. 6. [1]H NMR spectrum for 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box) in DMSO-*d6*.

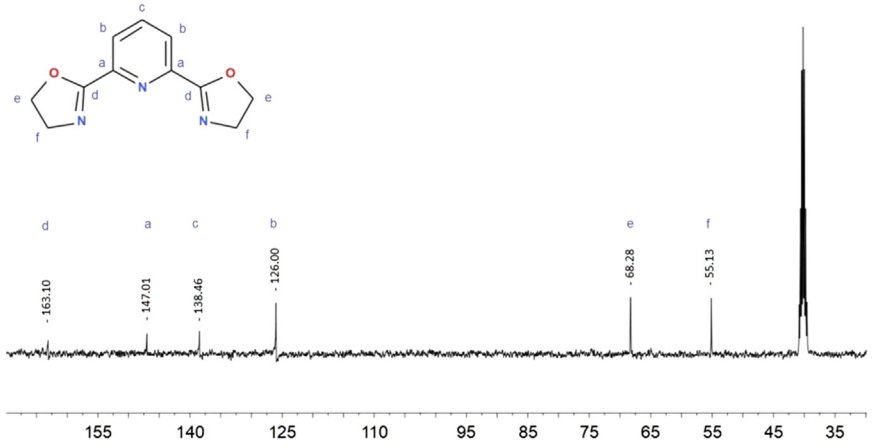


Fig. 7. [13]C NMR spectrum for 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box) in DMSO-*d6*.

2.5. GC–MS

Hewlett Packard HP7890 A GC system, equipped with 7000 GC/MS triple-quadrupol and HP-5 capilar 300 m × 0.32 mm column with 0.25 μm dimethylpolysilloxane stationary phase, dopped by 5% of phenylpolysilloxane (Figs. 8–11).

2.6. DSC

The melting temperatures were measured by differential scanning calorimetry DSC 2010 TA instrument calorimeter equipped with an automated sampler. The data were collected with the heat/cool/heat cycle at a heating rate of 10 °C/min under a nitrogen atmosphere (Figs. 12 and 13).

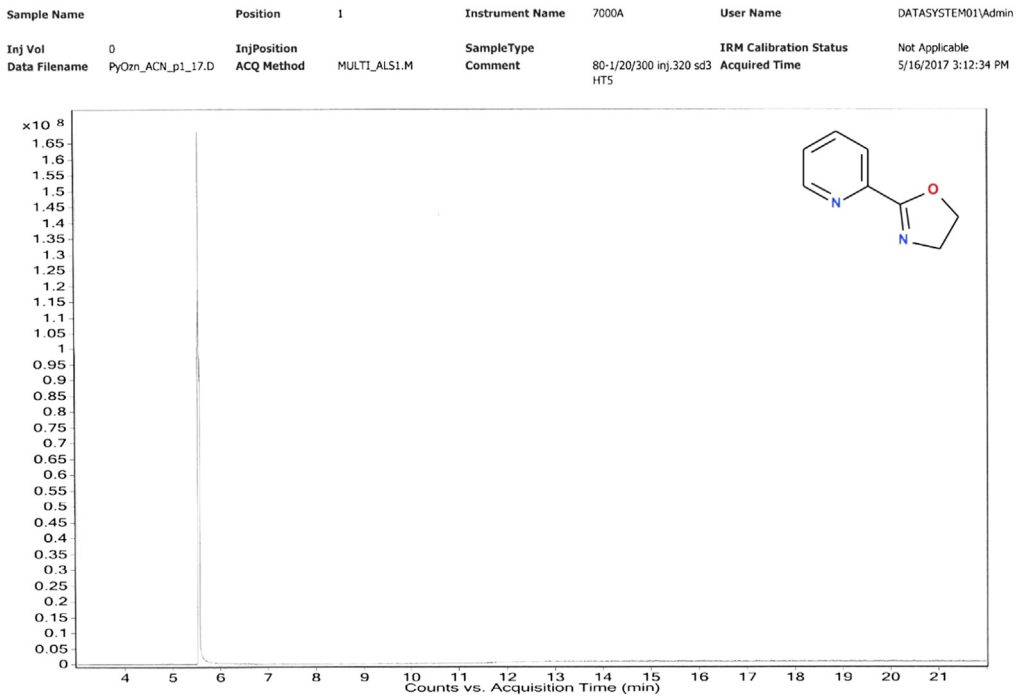


Fig. 8. GC analysis of 2-(1,3-oxazolin-2-yl)pyridine (Py-ox).

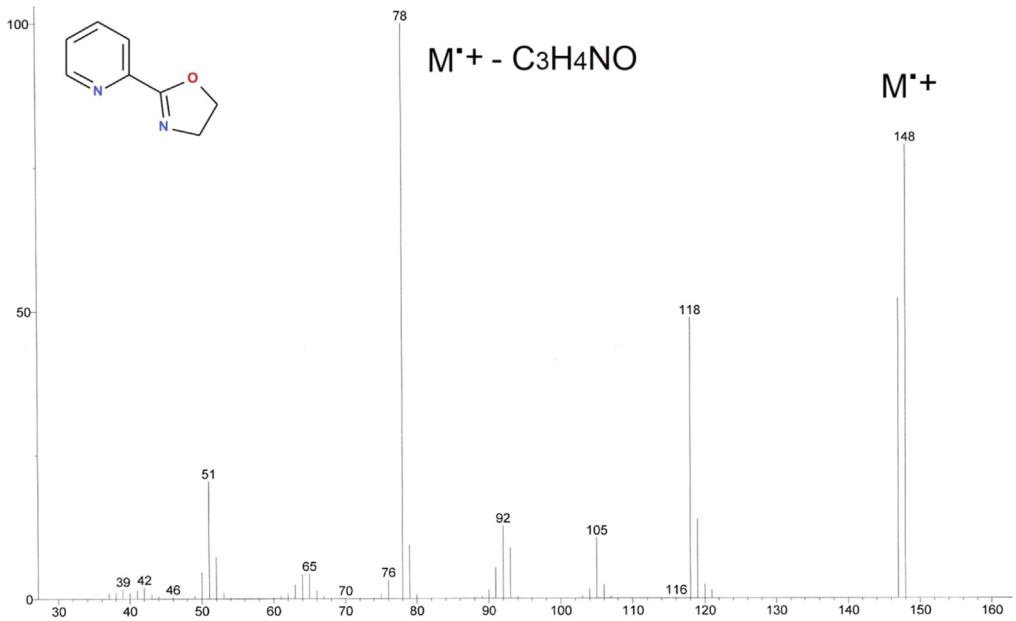


Fig. 9. MS analysis of 2-(1,3-oxazolin-2-yl)pyridine (Py-ox).

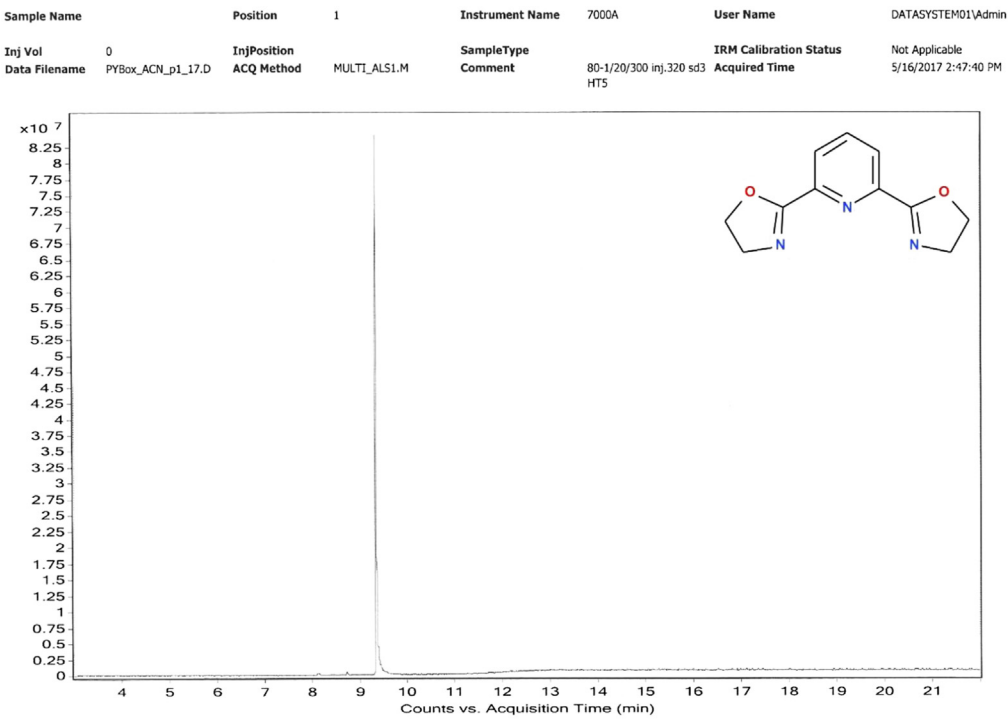


Fig. 10. GC analysis of 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box).

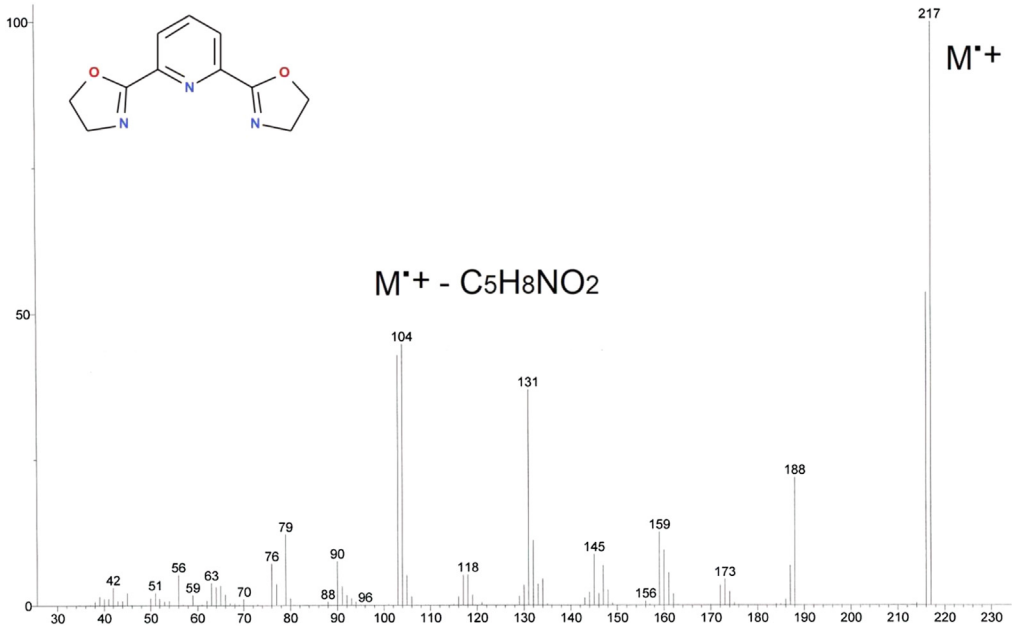


Fig. 11. MS analysis of 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box).

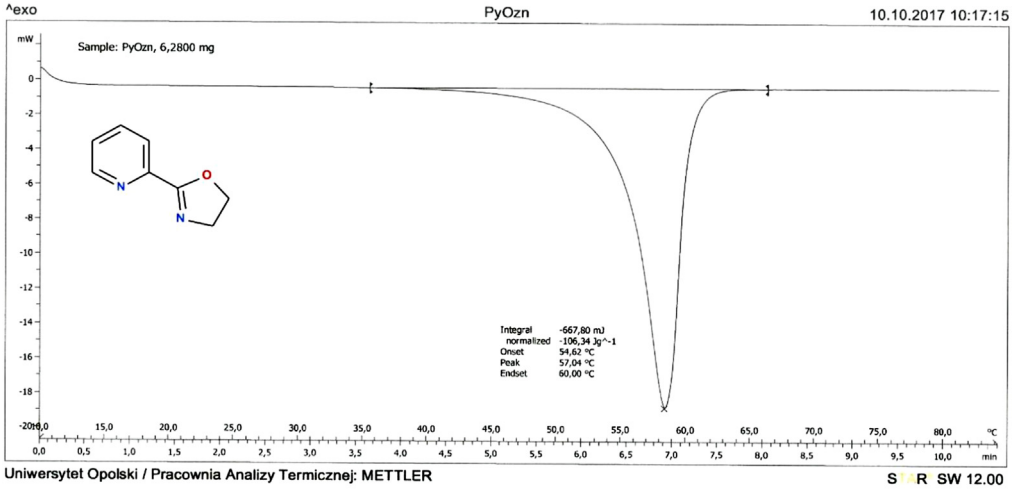


Fig. 12. DSC analysis of 2-(1,3-oxazolin-2-yl)pyridine (Py-ox).

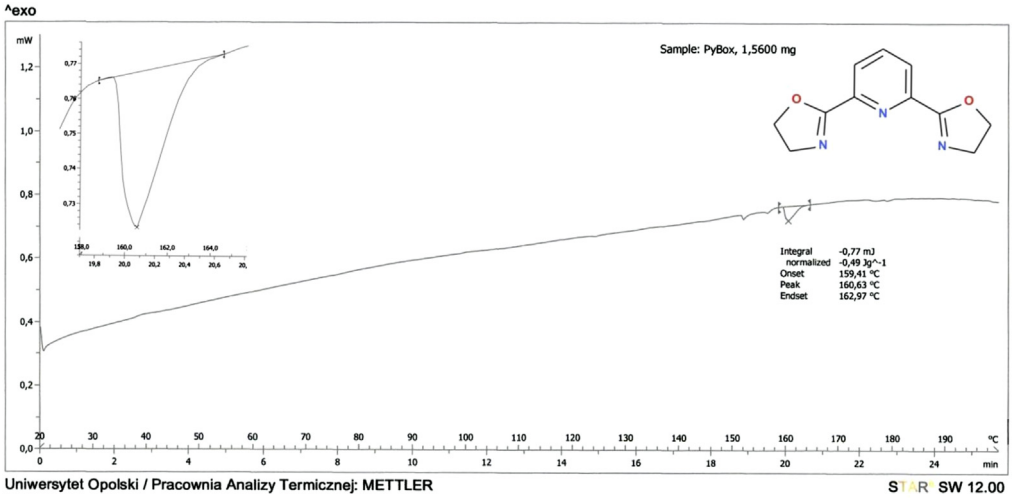


Fig. 13. DSC analysis of 2,6-bis(1,3-oxazolin-2-yl)pyridine (Py-box).

Transparency document. Supporting information

Transparency data associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2018.09.129.

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