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Retraction of articles by T. Liu *et al.*

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A series of 29 papers by Liu *et al.* are retracted.

As a result of problems with the data sets and incorrect atom assignments, 29 papers by Liu *et al.* are retracted. Full details of all the articles are given in Table 1.

Table 1
Details of articles to be retracted, in order of publication.

Title	Reference	DOI	Refcode
Tetrakis(pyrazine-κN)bis(thiocyanato-κN)manganese(II)	Liu & Xie (2007*a*)	10.1107/S1600536807026852	EDUMAS
(Dihydroxyglyoxime-κ^2N,N')bis(1,10-phenanthroline-κ^2N,N')copper(II) dinitrate dihydrate	Liu, Wang, Wang & Xie (2007*b*)	10.1107/S1600536807028255	EDUVAB
Tetrakis(pyrazine-κN)bis(thiocyanato-κN)zinc(II)	Liu & Xie (2007*b*)	10.1107/S1600536807028735	RIGQAA
Tetrakis(μ-2-pyridyloxyacetato)bis[(1,10-phenanthroline)(2-pyridyloxyacetato)-lanthanum(III)]	Liu, Wang, Wang & Xie (2007*c*)	10.1107/S1600536807030917	UDUMIQ
Polymeric $KNOF_2$	Liu Wang, Wang & Xie (2007*a*)	10.1107/S1600536807027195	ICSD 240891
(Dihydroxyglyoxime-κ^2N,N')bis(1,10-phenanthroline-κ^2N,N')cobalt(II) dinitrate dihydrate	Liu, Wang, Wang & Xie (2007*d*)	10.1107/S1600536807031224	WIHJED
Tetrakis(μ-2-pyridyloxyacetato)bis[(1,10-phenanthroline)(2-pyridyloxyacetato)-praseodymium(III)]	Liu, Wang, Wang & Xie (2007*e*)	10.1107/S1600536807032679	WIHQEK
Tetrakis[μ-(2-pyridyloxy)acetato-$\kappa^2O:O'$]bis{(1,10-phenanthroline-κ^2N,N')-[(2-pyridyloxy)acetato-κO]neodymium(III)}	Liu, Wang, Wang & Xie (2007*f*)	10.1107/S1600536807035349	TIGDAP
(Dihydroxyglyoxime-κ^2N,N')bis(1,10-phenanthroline-κ^2N,N')manganese(II) dinitrate dihydrate	Liu, Wang, Wang & Xie (2007*g*)	10.1107/S1600536807035076	TIGDET
2-Amino-3,5-dinitrobenzoic acid–ammonia (1/1)	Liu & Zhu (2007*j*)	10.1107/S1600536807040068	KIKQAX
2-Hydroxy-3,5-dinitrobenzamide monohydrate	Liu & Zhu (2007*k*)	10.1107/S1600536807039712	KIKQEB
2-(1-Hydroxy-2-pyridyl)acetamide monohydrate	Liu & Zhu (2007*l*)	10.1107/S1600536807040652	CIKQOD
Bis(2,2′-bipyridine-κN,N′)bis(thiocyanato-κN)iron(II)	Liu & Zhu (2007*a*)	10.1107/S1600536807043486	XIFXOA
catena-Poly[hexakis(μ_2-anilinoacetamide)bis(1,10-phenanthroline)disamarium(III]	Liu & Zhu (2007*b*)	10.1107/S1600536807045485	XILNAI
3-Hydroxy-2,4,6-trinitropyridine monohydrate	Liu & Zhu (2007*m*)	10.1107/S1600536807045230	PILNOO
catena-Poly[hexakis(μ_2-anilinoacetamide)bis(1,10-phenanthroline)-dipraseodymium(III)]	Liu & Zhu (2007*c*)	10.1107/S1600536807047733	SILZET
catena-Poly[[tetra-μ-anilinoacetamidato-bis(1,10-phenanthroline)dicerium(III)]-di-μ-anilinoacetamidato]	Liu & Zhu (2007*d*)	10.1107/S1600536807050969	GIMZOS
Tetrakis(pyridine-κN)bis(thiocyanato-κN)chromium(II)	Liu & Zhu (2007*e*)	10.1107/S1600536807051756	WINFAB
2-Ammonio-3-carboxy-5-nitrobenzoate monohydrate	Liu & Zhu (2007*n*)	10.1107/S1600536807048477	GINFEP
2-(Benzoylhydrazinocarbonyl)benzoic acid	Liu & Zhu (2007*o*)	10.1107/S160053680705204X	TINZIA
Tetrakis(pyridine-κN)bis(thiocyanato-κN)vanadium(II)	Liu & Zhu (2007*f*)	10.1107/S1600536807054529	HIPZIQ
catena-Poly[[(nitrato-κO)(1,10-phenanthroline-κ^2N,N')nickel(II)]-μ-acetamido-$\kappa^2O:N$]	Liu & Zhu (2007*g*)	10.1107/S1600536807056504	XIRGIP
catena-Poly[[(nitrato-κO)(1,10-phenanthroline-κ^2N,N')copper(II)]-μ-acetamido-$\kappa^2O:N$]	Liu & Zhu (2007*h*)	10.1107/S1600536807059077	HIQROP
catena-Poly[[(nitrato-κO)(1,10-phenanthroline-κ^2N,N')cobalt(II)]-μ-acetamidato-$\kappa^2O:N$]	Liu & Zhu (2007*i*)	10.1107/S1600536807060631	YIQMER
N′-Benzoyl-4-nitronicotinohydrazide	Liu & Zhu (2007*p*)	10.1107/S1600536807053068	CIPVON
N′-(3-Nitro-4-pyridylcarbonyl)pyridine-4-carbohydrazide	Liu & Zhu (2007*q*)	10.1107/S1600536807054876	RIRWEV

 doi:10.1107/S1600536809049976

Table 1 (continued)

Title	Reference	DOI	Refcode
Ethylenediammonium sulfate	Liu & Zhu (2007*r*)	10.1107/S1600536807056280	ETDAMS03
Ethylenediammonium perchlorate	Liu & Zhu (2007*s*)	10.1107/S1600536807059909	HIRYEN
catena-Poly[[(nitrato-κO)(1,10-phenanthroline-κ^2N,N')manganese(II)]-μ-nitrato-$\kappa^2O:O'$]	Liu & Zhu (2008)	10.1107/S160053680706254X	MIRROV

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Polymeric $KNOF_2$

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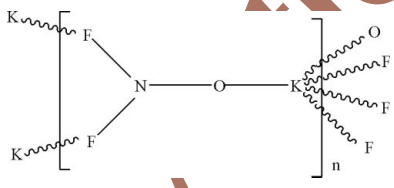
Key indicators: single-crystal X-ray study; T = 273 K; mean σ(O–N) = 0.004 Å; R factor = 0.039; wR factor = 0.163; data-to-parameter ratio = 13.3.

The title compound, poly[μ-difluoridooxidonitrato-potassium], $[KNOF_2]_n$, crystallizes in the orthorhombic system and adopts the ordered KNO_3 structure type. A crystallographic mirror plane passes through N, O and K. In the crystal structure, the polymer chains are linked by weak bonds into an infinite three-dimensional framework.

Related literature

For related literature, see: Ben Hamida & Wickleder (2005); Berdonosov *et al.* (2000); Christensen *et al.* (1996); Lipp & Schleid (2005); Nimmo & Lucas (1976); Ruck & Schmidt (2003); Soltzberg *et al.* (1994); Swaminathan & Srinivasan (1975).



Experimental

Crystal data

$KNOF_2$
M_r = 107.11
Orthorhombic, *Pnma*
a = 6.429 (4) Å
b = 5.417 (3) Å
c = 9.164 (5) Å
V = 319.1 (3) Å^3
Z = 4
Mo $K\alpha$ radiation
μ = 1.51 mm^{-1}
T = 273 (2) K
0.27 × 0.10 × 0.06 mm

Data collection

Bruker APEXII area-detector diffractometer
Absorption correction: multi-scan (*SADABS*; Sheldrick, 1996)
T_{min} = 0.686, T_{max} = 0.915
2043 measured reflections
372 independent reflections
304 reflections with $I > 2\sigma(I)$
R_{int} = 0.018

Refinement

$R[F^2 > 2\sigma(F^2)]$ = 0.039
$wR(F^2)$ = 0.163
S = 1.06
372 reflections
28 parameters
$\Delta\rho_{max}$ = 0.37 e Å^{-3}
$\Delta\rho_{min}$ = −0.55 e Å^{-3}

Table 1
Selected geometric parameters (Å, °).

K1—O1	2.840 (3)	K1—F1^{ii}	2.876 (2)
O1—N1	1.235 (4)	K1—F1^{iii}	2.889 (2)
N1—F1	1.251 (3)	K1—O1^{iv}	2.9185 (18)
K1—F1^{i}	2.839 (2)		
F1^{i}—K1—O1	142.45 (5)	O1—K1—F1^{ii}	99.29 (8)

Symmetry codes: (i) $-x+\frac{3}{2}, -y+2, z+\frac{1}{2}$; (ii) $-x+1, -y+2, -z+1$; (iii) $x+\frac{1}{2}, -y+\frac{3}{2}, -z+\frac{1}{2}$; (iv) $-x+1, -y+1, -z+1$.

Data collection: *APEX2* (Bruker, 2005); cell refinement: *SAINT* (Siemens, 1996); data reduction: *SAINT*; program(s) used to solve structure: *SHELXS97* (Sheldrick, 1997); program(s) used to refine structure: *SHELXL97* (Sheldrick, 1997); molecular graphics: *SHELXTL* (Siemens, 1996); software used to prepare material for publication: *SHELXTL*.

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Supplementary data and figures for this paper are available from the IUCr electronic archives (Reference: HK2267).

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supplementary materials

Acta Cryst. (2007). E**63**, i170 [**doi:10.1107/S1600536807027195**]

Polymeric $KNOF_2$

T. Liu, Z.-W. Wang, Y.-X. Wang and Z.-P. Xie

Comment

Inorganic compounds with various anions attract attention because of the features of their crystal chemistry (Berdonosov *et al.*, 2000; Ruck & Schmidt, 2003; Lipp & Schleid, 2005; Ben Hamida & Wickleder, 2005)·The first probable crystallographic path in single crystals of KNO_3 was reported by Swaminathan *et al.* in 1975. In the following years, the compounds KNO_3 were synthesized and characterized by Nimmo & Lucas (1976), Soltzberg *et al.* (1994) and Christensen *et al.* (1996). We herein report the crystal structure of the title compound, (I).

In the molecule of (I), the bond lengths and angles (Table 1) are within normal ranges. One of F atoms in $KNOF_2$ (Fig. 1) is symmetry related with symmetry code (x, $-y + 3/2$, z). $KNOF_2$ crystallizes in the orthorhombic system and adopts the ordered KNO_3 structure type. The $[KNOF_2]_n$ structure is a coordination network polymer, in which K^+ cations are connected by the anions coordinated through F and O atoms.

Experimental

Crystals of the title compound were synthesized using solid-state reaction method. KF (58 mg, 1 mmol), $NaNO_3$ (170 mg, 2 mmol), corresponding to a molar ratio of 1:2, were heated in a graphite crucible under a static atmosphere of a (98/2)% mixture of N_2/H_2 up to 1173 K over the course of 6 h. This temperature was held for 2 h and then decreased to 773 K within 20 h. After cooling to room temperature, the solidified melt was leached with demineralized water. From the remaining residue, colourless plates of $KNOF_2$ could be isolated.

Figures

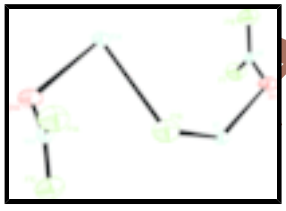

Fig. 1. The molecular structure of the title molecule, with the atom-numbering scheme. Displacement ellipsoids are drawn at the 30% probability level [symmetry code (A): $-x + 1$, $-y + 1$, $-z + 1$; (C): $-x + 1$, $-y + 2$, $-z + 1$; (E): x, $-y + 3/2$, z; (G): $-x + 3/2$, $-y + 2$, $z + 1/2$].

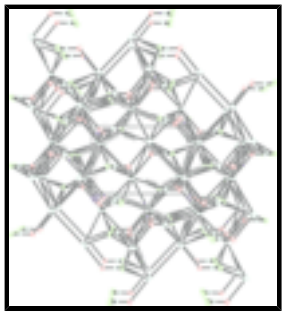

Fig. 2. A packing diagram for (I).

poly[μ-difluoridooxidonitrato-potassium]

Crystal data

$KNOF_2$	$F_{000} = 208$
$M_r = 107.11$	$D_x = 2.229$ Mg m^{-3}
Orthorhombic, *Pnma*	Mo *K*α radiation λ = 0.71073 Å
Hall symbol: -P 2ac 2n	Cell parameters from 1198 reflections
a = 6.429 (4) Å	θ = 4.4–28.3°
b = 5.417 (3) Å	μ = 1.51 mm^{-1}
c = 9.164 (5) Å	*T* = 273 (2) K
V = 319.1 (3) Å^3	Block, colourless
Z = 4	0.27 × 0.10 × 0.06 mm

Data collection

Bruker APEXII area-detector diffractometer	372 independent reflections
Radiation source: fine-focus sealed tube	304 reflections with $I > 2\sigma(I)$
Monochromator: graphite	$R_{int} = 0.018$
T = 273(2) K	$\theta_{max} = 27.0°$
φ and ω scans	$\theta_{min} = 3.9°$
Absorption correction: multi-scan (SADABS; Sheldrick, 1996)	*h* = −7→8
$T_{min} = 0.686$, $T_{max} = 0.915$	*k* = −6→6
2043 measured reflections	*l* = −11→11

Refinement

Refinement on F^2	Primary atom site location: structure-invariant direct methods
Least-squares matrix: full	Secondary atom site location: difference Fourier map
$R[F^2 > 2\sigma(F^2)] = 0.039$	$w = 1/[\sigma^2(F_o^2) + (0.128P)^2 + 0.1109P]$ where $P = (F_o^2 + 2F_c^2)/3$
$wR(F^2) = 0.163$	$(\Delta/\sigma)_{max} < 0.001$
S = 1.06	$\Delta\rho_{max} = 0.37$ e Å^{-3}
372 reflections	$\Delta\rho_{min} = -0.55$ e Å^{-3}
28 parameters	Extinction correction: none

Special details

Geometry. All e.s.d.'s (except the e.s.d. in the dihedral angle between two l.s. planes) are estimated using the full covariance matrix. The cell e.s.d.'s are taken into account individually in the estimation of e.s.d.'s in distances, angles and torsion angles; correlations between e.s.d.'s in cell parameters are only used when they are defined by crystal symmetry. An approximate (isotropic) treatment of cell e.s.d.'s is used for estimating e.s.d.'s involving l.s. planes.

Refinement. Refinement of F^2 against ALL reflections. The weighted *R*-factor *wR* and goodness of fit S are based on F^2, conventional *R*-factors *R* are based on F, with F set to zero for negative F^2. The threshold expression of $F^2 > 2\text{sigma}(F^2)$ is used only for calculating *R*-factors(gt) *etc*. and is not relevant to the choice of reflections for refinement. *R*-factors based on F^2 are statistically about twice as large as those based on F, and R– factors based on ALL data will be even larger.

Fractional atomic coordinates and isotropic or equivalent isotropic displacement parameters (Å^2)

	x	*y*	*z*	U_{iso}*/U_{eq}
K1	0.75494 (11)	0.7500	0.58346 (8)	0.0285 (5)
O1	0.4098 (5)	0.7500	0.3901 (3)	0.0392 (8)
N1	0.4145 (5)	0.7500	0.2554 (3)	0.0244 (8)
F1	0.4144 (3)	0.9496 (4)	0.1866 (2)	0.0554 (8)

Atomic displacement parameters (Å^2)

	U^{11}	U^{22}	U^{33}	U^{12}	U^{13}	U^{23}
K1	0.0334 (8)	0.0254 (8)	0.0267 (7)	0.000	−0.0009 (3)	0.000
O1	0.051 (2)	0.0380 (19)	0.0285 (14)	0.000	−0.0061 (13)	0.000
N1	0.0198 (17)	0.0232 (16)	0.0303 (16)	0.000	0.0008 (12)	0.000
F1	0.0757 (17)	0.0402 (13)	0.0502 (13)	−0.0044 (10)	0.0045 (11)	0.0050 (8)

Geometric parameters (Å, °)

K1—O1	2.840 (3)	K1—N1^{ii}	3.272 (2)
O1—N1	1.235 (4)	K1—N1^{iv}	3.272 (2)
N1—F1	1.251 (3)	O1—K1^{iv}	2.9185 (18)
K1—F1^{i}	2.839 (2)	O1—K1^{ii}	2.9185 (18)
K1—F1^{ii}	2.876 (2)	N1—F1^{viii}	1.251 (3)
K1—F1^{iii}	2.889 (2)	N1—K1^{ix}	3.270 (4)
K1—O1^{iv}	2.9185 (18)	N1—K1^{ii}	3.272 (2)
K1—F1^{v}	2.839 (2)	N1—K1^{iv}	3.272 (2)
K1—F1^{vi}	2.876 (2)	F1—K1^{x}	2.839 (2)
K1—F1^{vii}	2.889 (2)	F1—K1^{ii}	2.876 (2)
K1—O1^{ii}	2.9185 (18)	F1—K1^{ix}	2.889 (2)
K1—N1^{vii}	3.270 (4)		
F1^{i}—K1—O1	142.45 (5)	O1—K1—N1^{ii}	91.24 (7)
O1—K1—F1^{ii}	99.29 (8)	F1^{ii}—K1—N1^{ii}	22.32 (7)
F1^{i}—K1—F1^{v}	69.95 (10)	F1^{vi}—K1—N1^{ii}	90.68 (8)
F1^{v}—K1—O1	142.45 (5)	F1^{iii}—K1—N1^{ii}	144.56 (7)
F1^{i}—K1—F1^{ii}	73.45 (6)	F1^{vii}—K1—N1^{ii}	101.25 (7)
F1^{v}—K1—F1^{ii}	111.33 (6)	O1^{iv}—K1—N1^{ii}	127.59 (8)
F1^{i}—K1—F1^{vi}	111.33 (6)	O1^{ii}—K1—N1^{ii}	22.07 (8)
F1^{v}—K1—F1^{vi}	73.45 (6)	N1^{vii}—K1—N1^{ii}	122.21 (6)

O1—K1—F1^{vi}	99.29 (8)	F1^{i}—K1—N1^{iv}	124.99 (8)
F1^{ii}—K1—F1^{vi}	68.92 (10)	F1^{v}—K1—N1^{iv}	67.94 (7)
F1^{i}—K1—F1^{iii}	103.54 (5)	O1—K1—N1^{iv}	91.24 (7)
F1^{v}—K1—F1^{iii}	78.76 (7)	F1^{ii}—K1—N1^{iv}	90.68 (8)
O1—K1—F1^{iii}	75.08 (8)	F1^{vi}—K1—N1^{iv}	22.32 (7)
F1^{ii}—K1—F1^{iii}	166.82 (9)	F1^{iii}—K1—N1^{iv}	101.25 (7)
F1^{vi}—K1—F1^{iii}	123.38 (4)	F1^{vii}—K1—N1^{iv}	144.56 (7)
F1^{i}—K1—F1^{vii}	78.76 (7)	O1^{iv}—K1—N1^{iv}	22.07 (8)
F1^{v}—K1—F1^{vii}	103.54 (5)	O1^{ii}—K1—N1^{iv}	127.59 (8)
O1—K1—F1^{vii}	75.08 (8)	N1^{vii}—K1—N1^{iv}	122.21 (6)
F1^{ii}—K1—F1^{vii}	123.38 (4)	N1^{ii}—K1—N1^{iv}	111.77 (10)
F1^{vi}—K1—F1^{vii}	166.82 (9)	N1—O1—K1	127.2 (2)
F1^{iii}—K1—F1^{vii}	43.96 (10)	N1—O1—K1^{iv}	95.27 (9)
F1^{i}—K1—O1^{iv}	140.90 (7)	K1—O1—K1^{iv}	103.40 (6)
F1^{v}—K1—O1^{iv}	73.27 (8)	N1—O1—K1^{ii}	95.27 (9)
O1—K1—O1^{iv}	76.60 (6)	K1—O1—K1^{ii}	103.40 (6)
F1^{ii}—K1—O1^{iv}	109.08 (8)	K1^{iv}—O1—K1^{ii}	136.28 (12)
F1^{vi}—K1—O1^{iv}	43.67 (8)	O1—N1—F1^{viii}	120.23 (17)
F1^{iii}—K1—O1^{iv}	81.53 (8)	O1—N1—F1	120.23 (17)
F1^{vii}—K1—O1^{iv}	123.18 (7)	F1^{viii}—N1—F1	119.5 (3)
F1^{i}—K1—O1^{ii}	73.27 (8)	O1—N1—K1^{ix}	160.3 (2)
F1^{v}—K1—O1^{ii}	140.90 (7)	F1^{viii}—N1—K1^{ix}	61.43 (17)
O1—K1—O1^{ii}	76.60 (6)	F1—N1—K1^{ix}	61.43 (17)
F1^{ii}—K1—O1^{ii}	43.67 (8)	O1—N1—K1^{ii}	62.66 (9)
F1^{vi}—K1—O1^{ii}	109.08 (8)	F1^{viii}—N1—K1^{ii}	160.5 (2)
F1^{iii}—K1—O1^{ii}	123.18 (7)	F1—N1—K1^{ii}	60.79 (13)
F1^{vii}—K1—O1^{ii}	81.53 (8)	K1^{ix}—N1—K1^{ii}	108.92 (7)
O1^{iv}—K1—O1^{ii}	136.28 (12)	O1—N1—K1^{iv}	62.66 (9)
F1^{i}—K1—N1^{vii}	94.67 (7)	F1^{viii}—N1—K1^{iv}	60.79 (13)
F1^{v}—K1—N1^{vii}	94.67 (7)	F1—N1—K1^{iv}	160.5 (2)
O1—K1—N1^{vii}	69.66 (9)	K1^{ix}—N1—K1^{iv}	108.92 (7)
F1^{ii}—K1—N1^{vii}	144.52 (5)	K1^{ii}—N1—K1^{iv}	111.77 (10)
F1^{vi}—K1—N1^{vii}	144.52 (5)	N1—F1—K1^{x}	131.51 (18)
F1^{iii}—K1—N1^{vii}	22.36 (5)	N1—F1—K1^{ii}	96.89 (17)
F1^{vii}—K1—N1^{vii}	22.36 (5)	K1^{x}—F1—K1^{ii}	101.71 (7)
O1^{iv}—K1—N1^{vii}	101.11 (6)	N1—F1—K1^{ix}	96.21 (18)
O1^{ii}—K1—N1^{vii}	101.11 (6)	K1^{x}—F1—K1^{ix}	101.24 (7)
F1^{i}—K1—N1^{ii}	67.94 (7)	K1^{ii}—F1—K1^{ix}	134.83 (8)
F1^{v}—K1—N1^{ii}	124.99 (8)		

Symmetry codes: (i) −*x*+3/2, −*y*+2, *z*+1/2; (ii) −*x*+1, −*y*+2, −*z*+1; (iii) *x*+1/2, −*y*+3/2, −*z*+1/2; (iv) −*x*+1, −*y*+1, −*z*+1; (v) −*x*+3/2, *y*−1/2, *z*+1/2; (vi) −*x*+1, *y*−1/2, −*z*+1; (vii) *x*+1/2, *y*, −*z*+1/2; (viii) *x*, −*y*+3/2, *z*; (ix) *x*−1/2, *y*, −*z*+1/2; (x) −*x*+3/2, −*y*+2, *z*−1/2.

Fig. 1

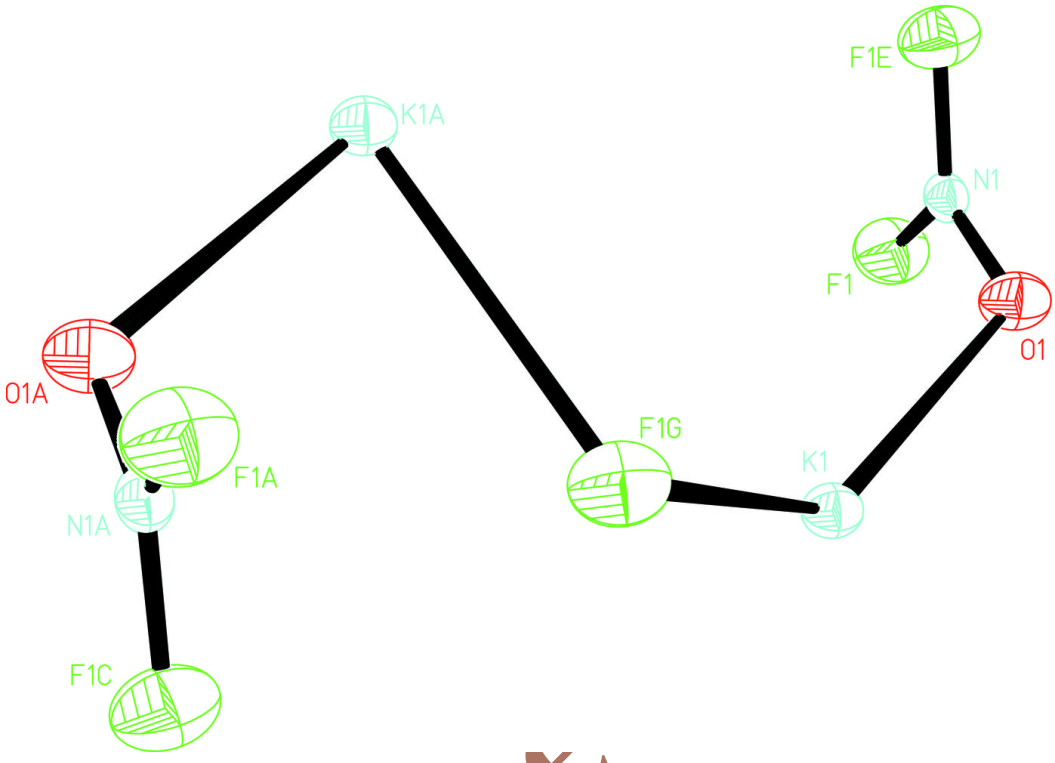

Fig. 2