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Title: Neptunium and Uranium Reduction Chemistry

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Intended for: Report

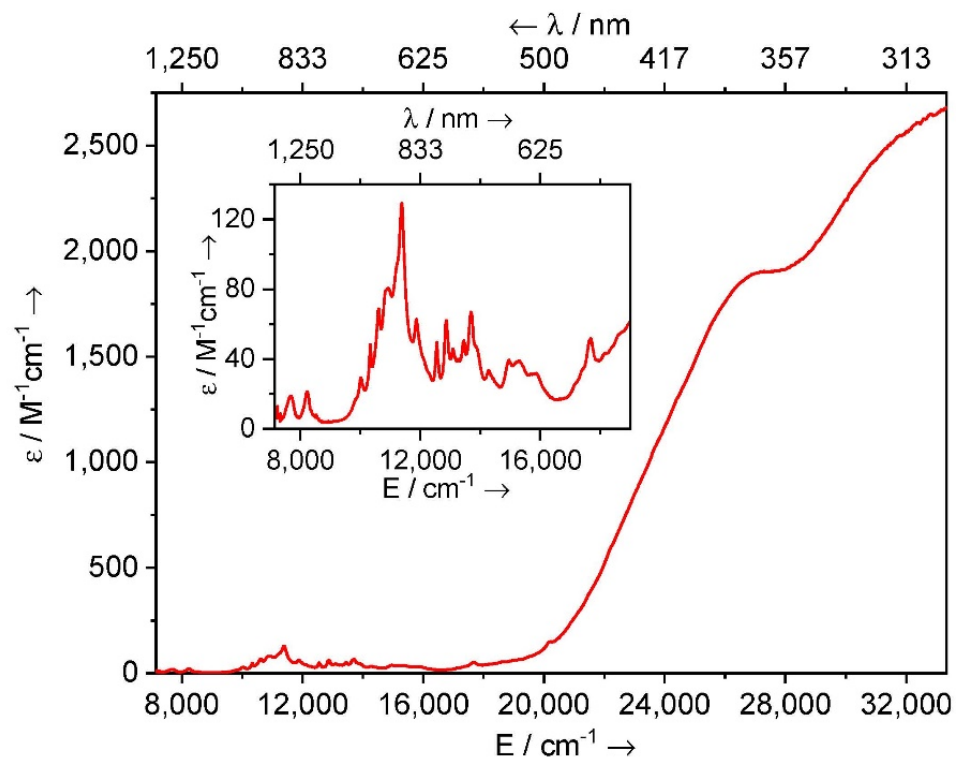
Issued: 2020-06-26

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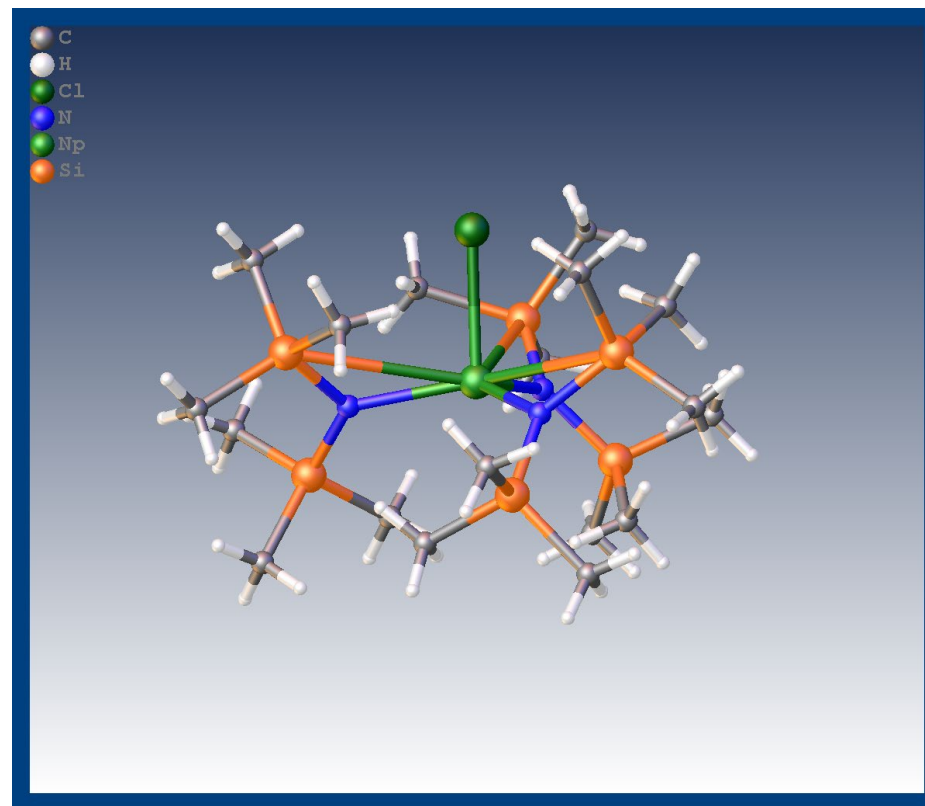
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Neptunium and Uranium Reduction Chemistry

Np(IV)ClN*₃: characterization



UV-vis

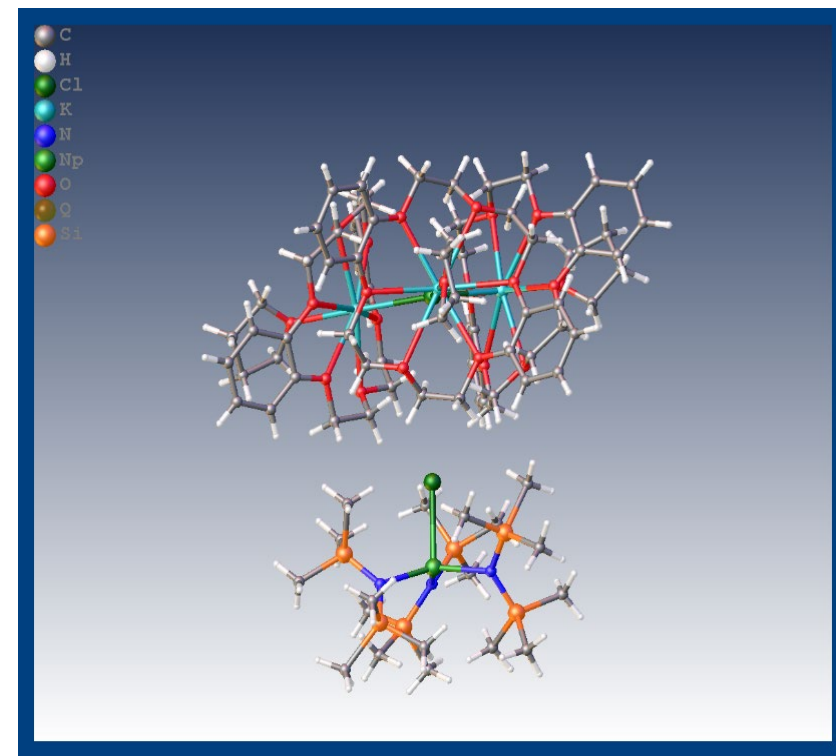
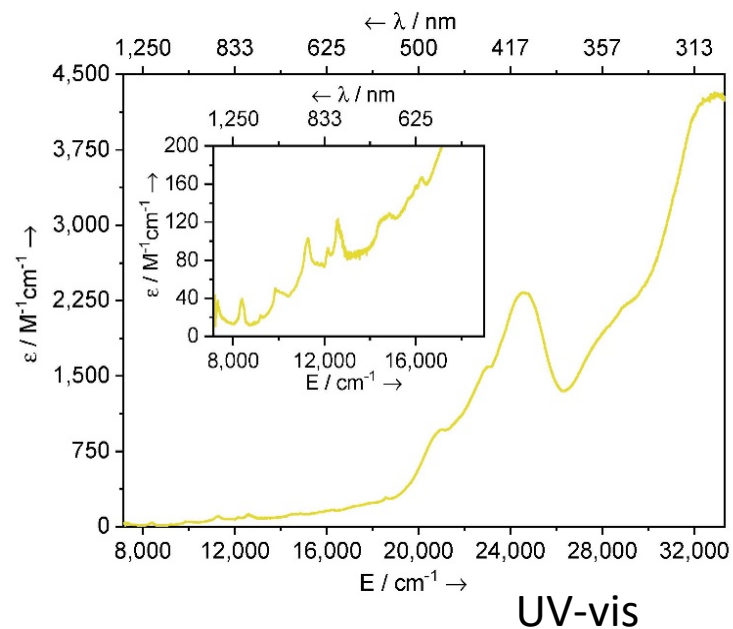
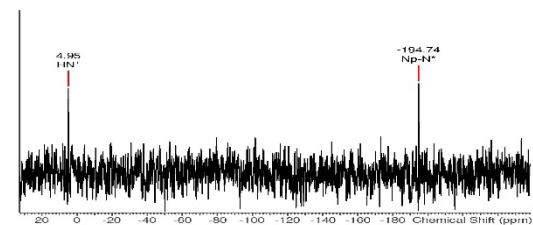
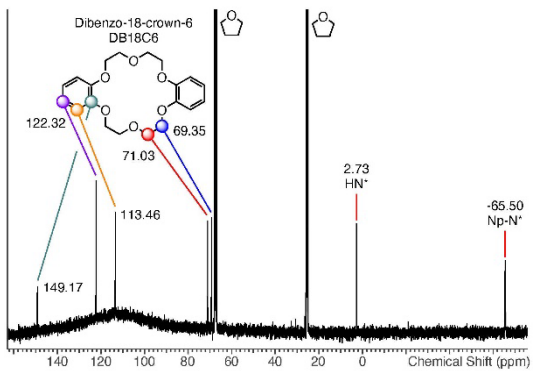
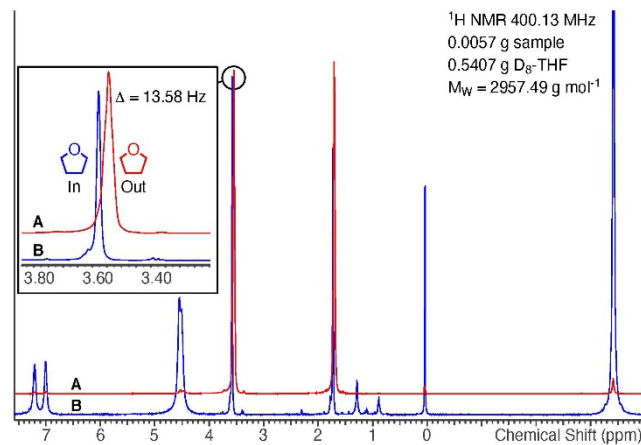
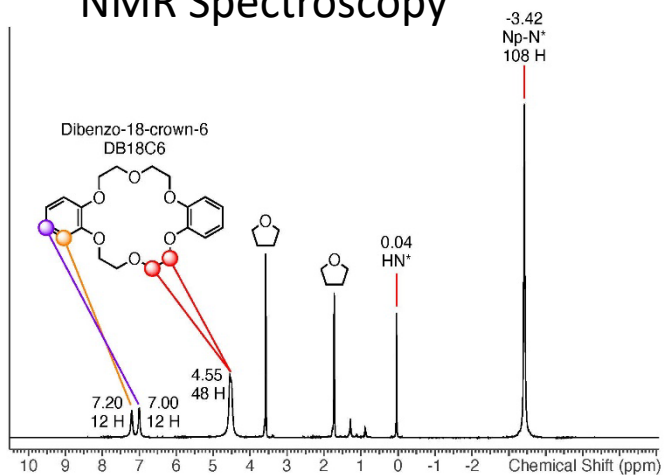


Solid-state molecular structure

NMR Spectroscopy: similar to previous neptunium complexes

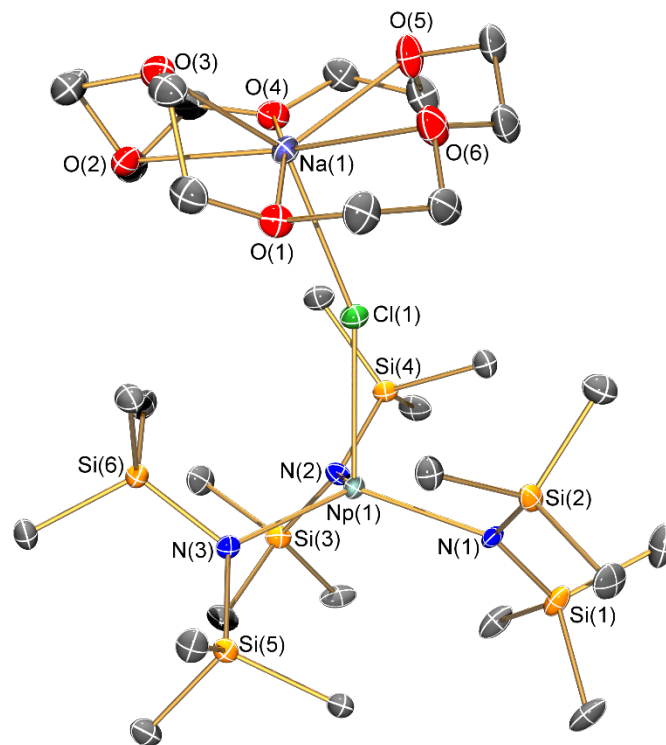
Np(III)ClN*₃[(KDB18-c-6)₃Cl]: characterization

NMR Spectroscopy



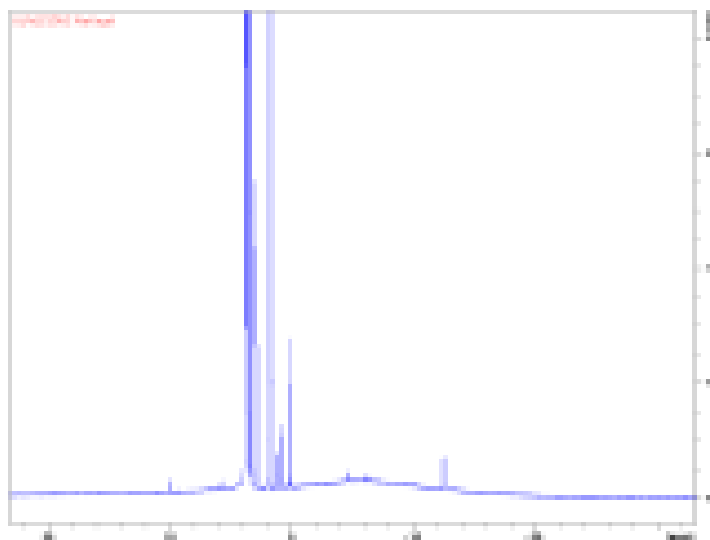
Solid-state molecular structure

Np(III)(N^{*}₃Cl)(Na(crown)):

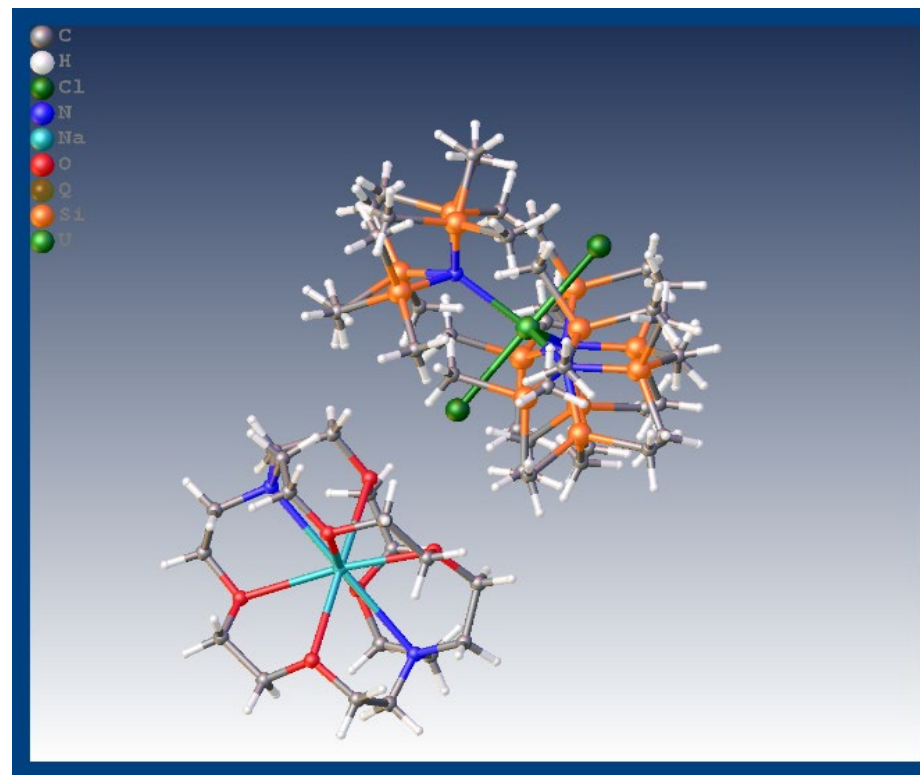


Solid-state molecular
structure

$U(Cl)_2N^*_3(Nacrypt)$: characterization



NMR Spectroscopy



Solid-state molecular structure



SUBMISSION FORM

SLS-91

SAMPLE IDENTIFICATION

Name: Selena Staur
 Institution: Los Alamos National Lab
 Lab Group: Aaron Tardieu
 Results email: sstaur@lanl.gov

Invoice email: cmbarela@lanl.gov
 Invoice Address:
 PO#

Analysis	Theory	% Found	
C	36.35%		
H	7.63%		
N	5.89%		

Single Duplicate Triplicate

Molecular Formula: $C_{36}H_{42}Cl_2N_3NaO_2SiU$

M.P. / B.P. _____

Air Sensitive: Yes No

Explosive: Yes No

Hazardous: Yes No

Drying: Yes No Temp. _____ °C
 Time _____ H _____ M

Sample Return: Yes No Shipping Address:

Comments: Air sensitive and depleted
 Uranium sample

Midwest Microlab
 7212 N. Shadeland Ave., Suite 110
 Indianapolis, IN 46250
 Phone: 317-849-6506
 Fax: 317-849-8524
 Website: <http://midwestlab.com>

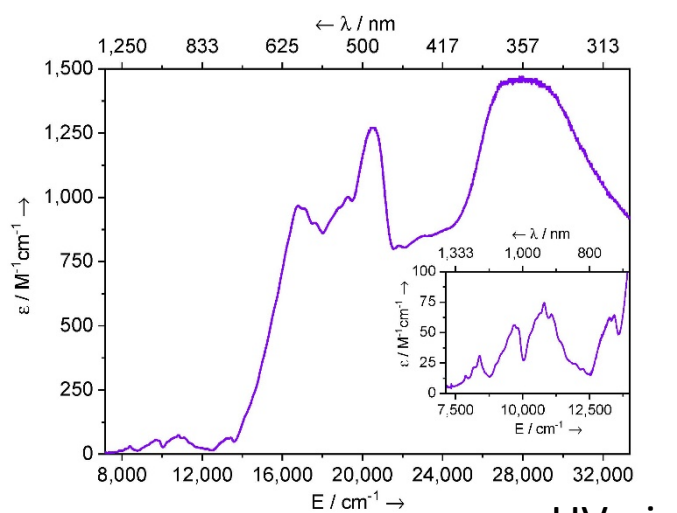
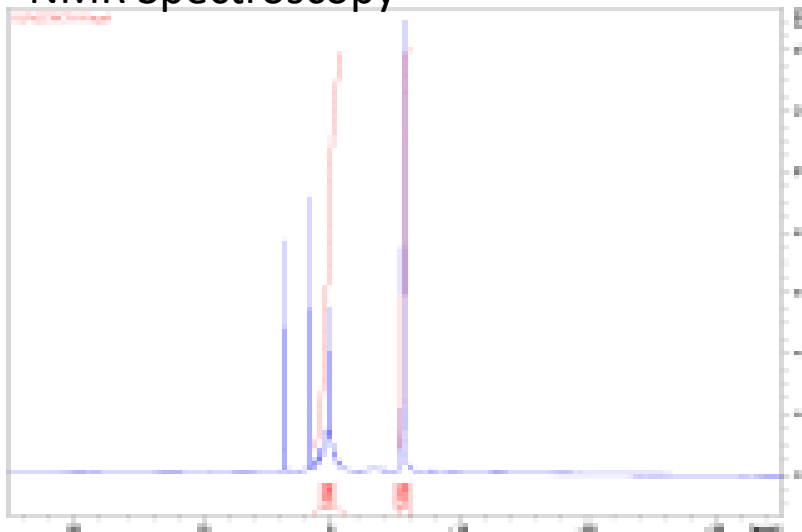
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Elemental Analysis

UCIN*₃(Kcrypt): characterization

NMR Spectroscopy



UV-vis



SUBMISSION FORM

SLS-96

SAMPLE IDENTIFICATION

Name: Selena Staur
 Institution: Los Alamos National Lab
 Lab Group: Aaron Tardieu
 Results email: SStaur@lanl.gov

Invoice email: cmbarela@lanl.gov
 Invoice Address:
 PO#

Analysis	Theory	% Found
C	38.67%	
H	7.95%	
N	5.69%	

Single Duplicate Triplicate

Molecular Formula: $C_{40}H_{48}ClK_2N_2O_4Si_6U$

M.P. / B.P. _____

Air Sensitive: Yes No

Explosive: Yes No

Hazardous: Yes No

Drying: Yes No Temp. _____ °C
 Time _____ H _____ M

Sample Return: Yes No Shipping Address: _____

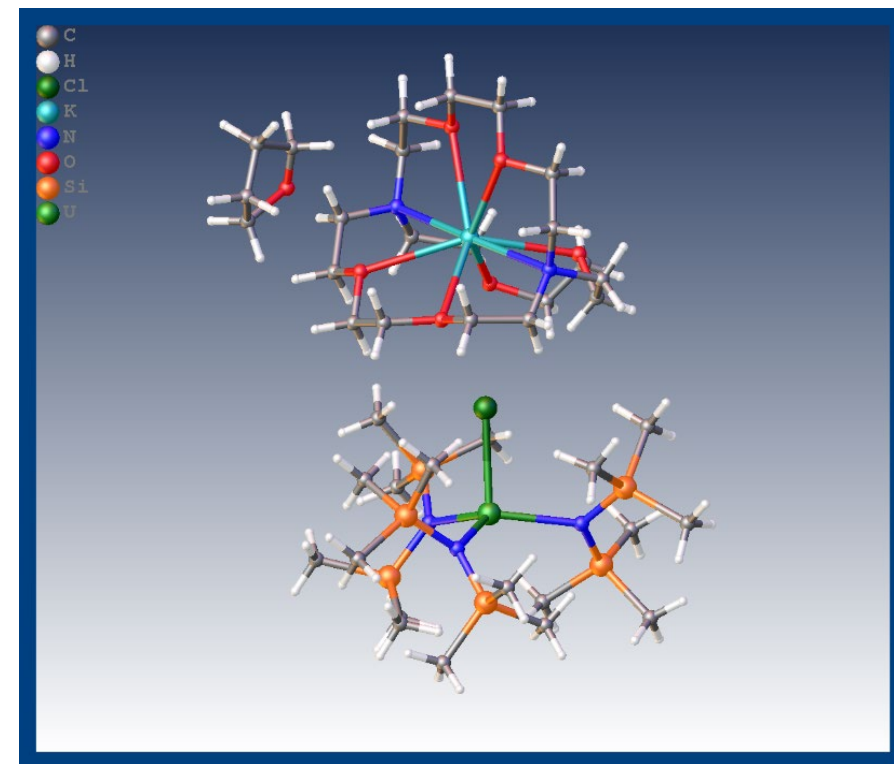
Comments: air sensitive and depleted uranium sample

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 7212 N. Shadeland Ave., Suite 110
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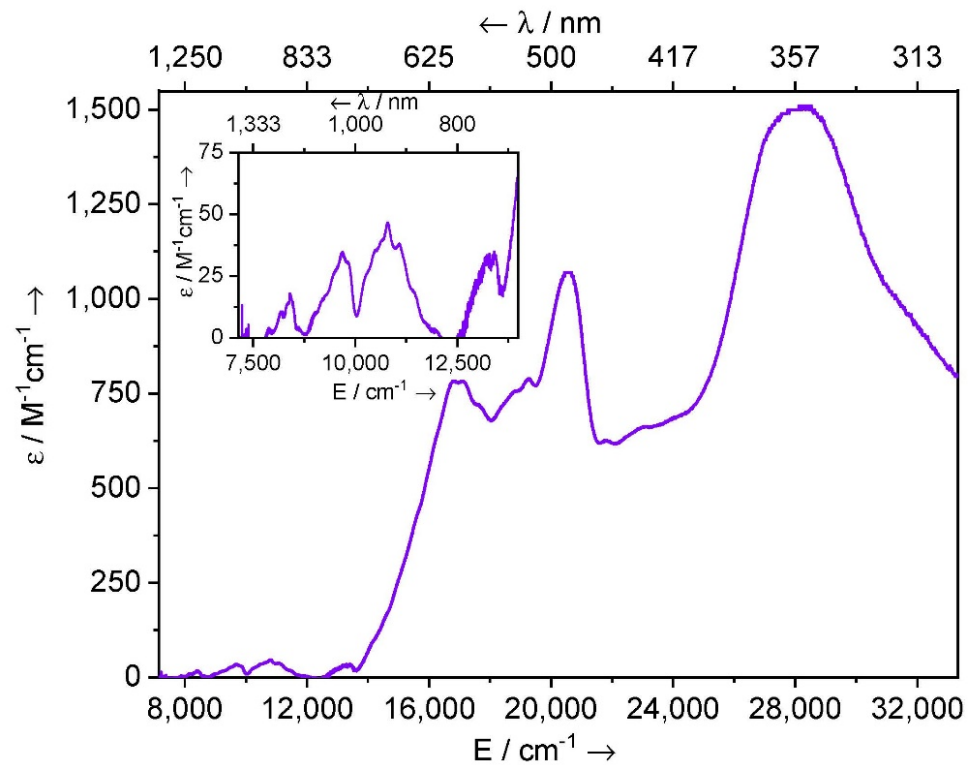
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Elemental Analysis

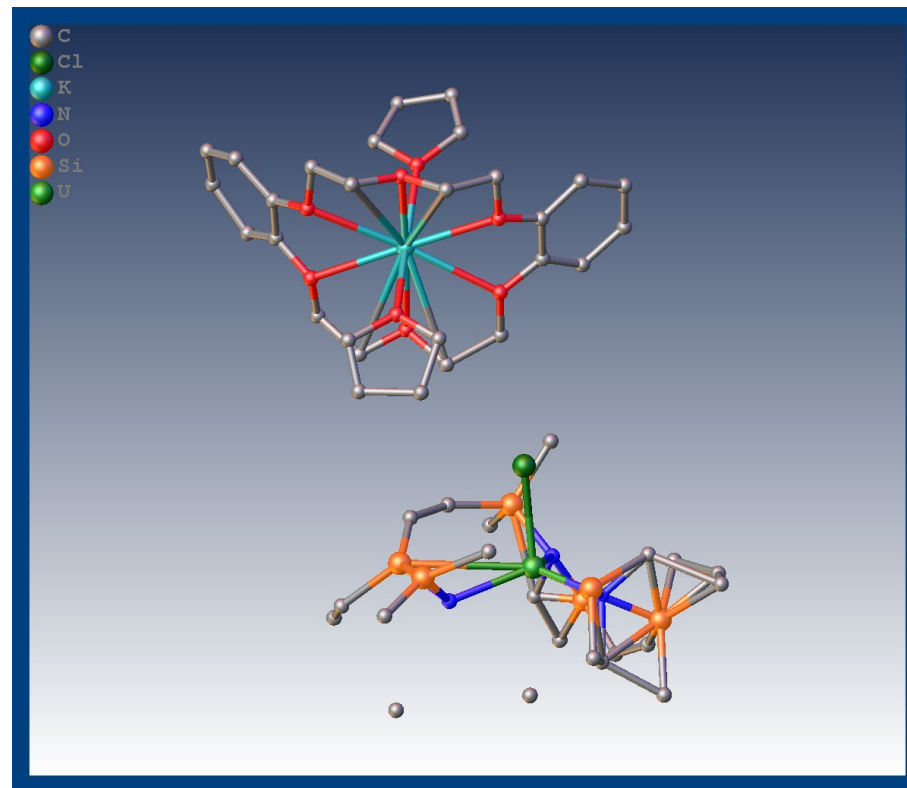


Solid-state molecular structure

UCIN*₃(KDB18-c-6)(THF)₂: characterization



UV-vis



Solid-state molecular structure

NMR Spectroscopy: similar to previous uranium complexes