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Title: Neptunium and Uranium Reduction Chemistry-A

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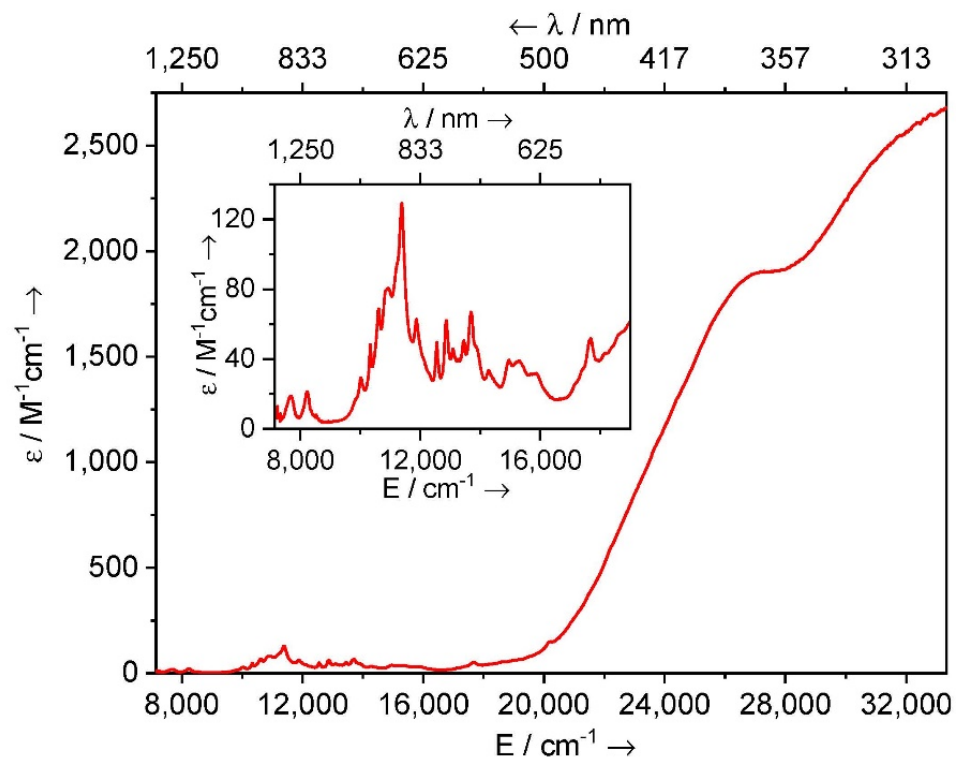
# Neptunium and Uranium Reduction Chemistry-A

Selena Staun 332373

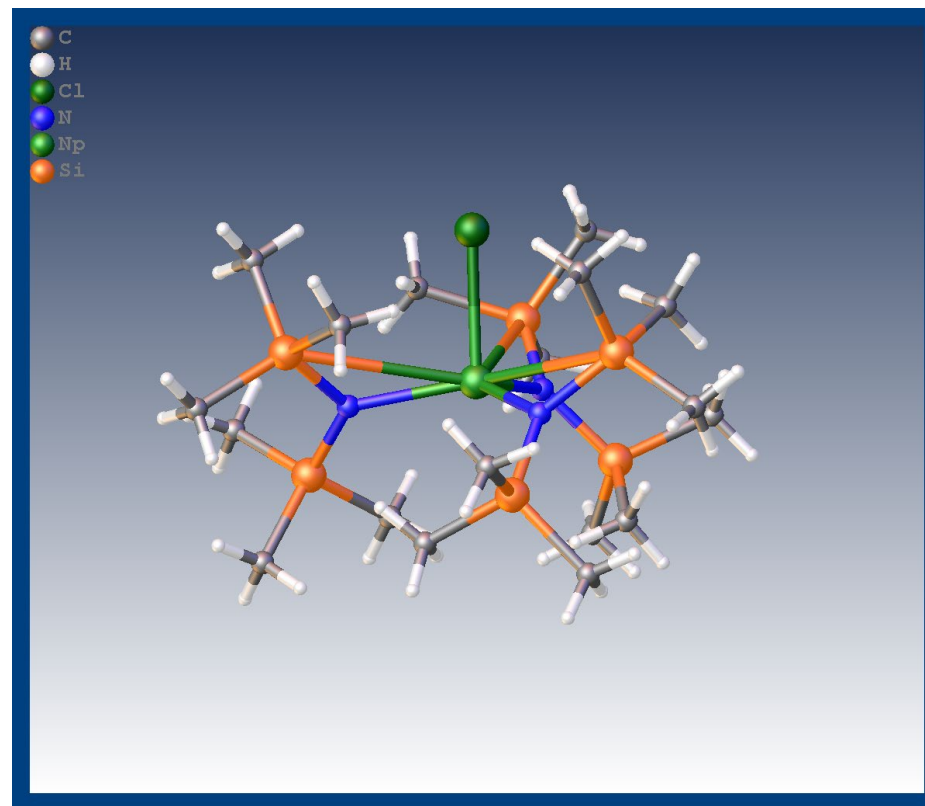
Andrew Gaunt 185633

Material to share with mentor back at UCSB

# Np(IV)ClN\*<sub>3</sub>: characterization



UV-vis

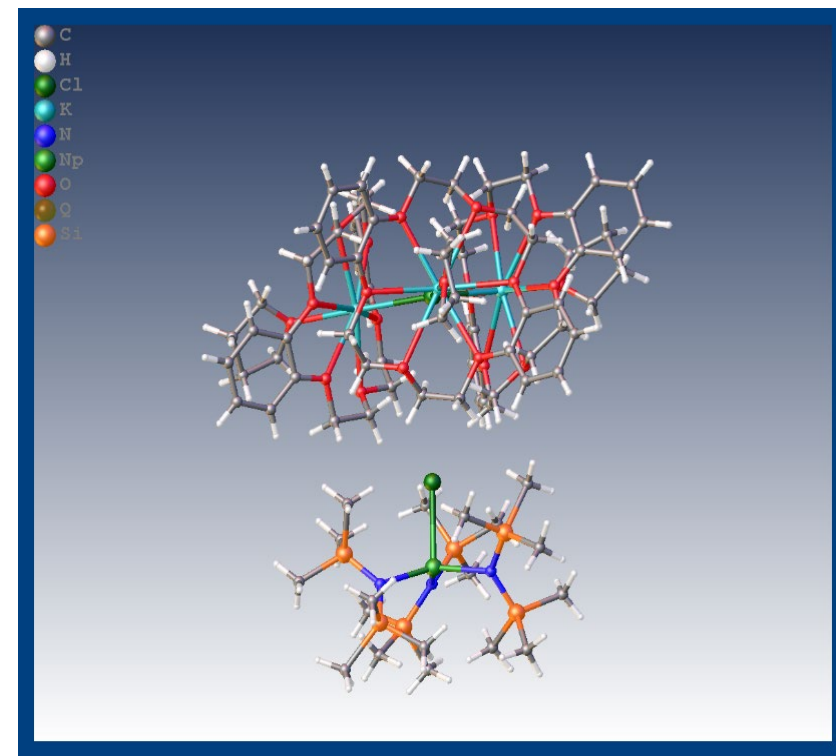
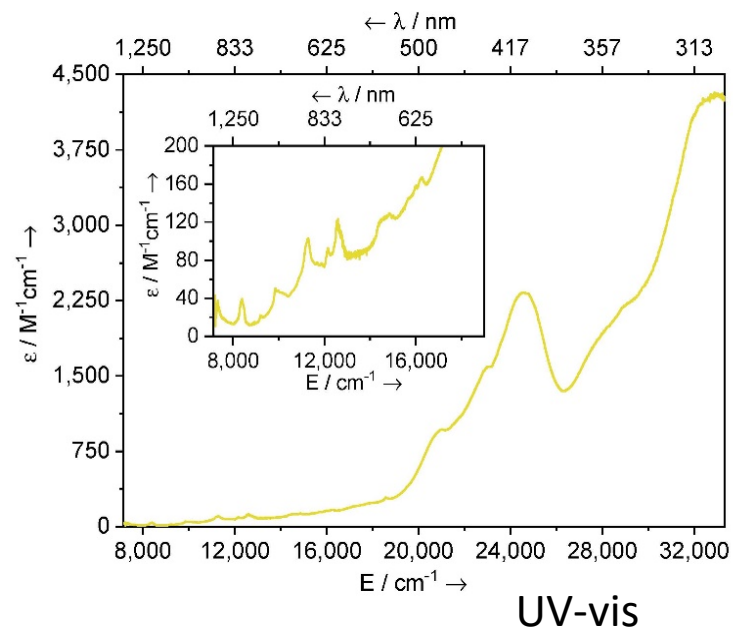
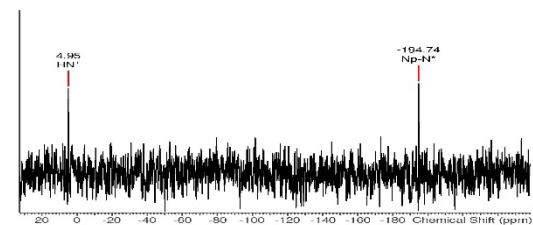
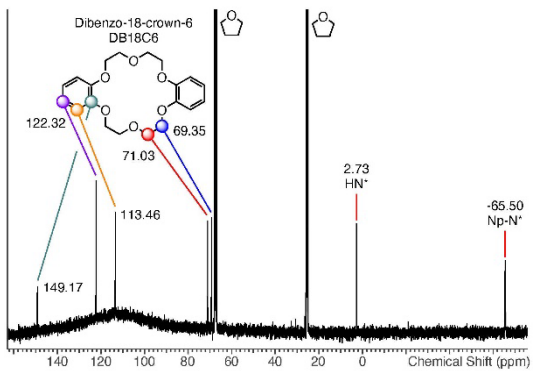
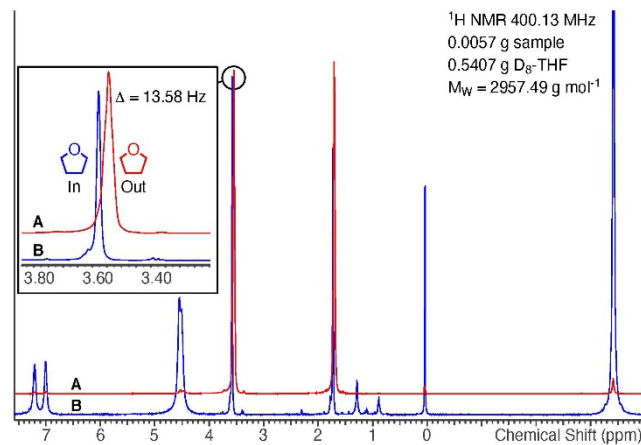
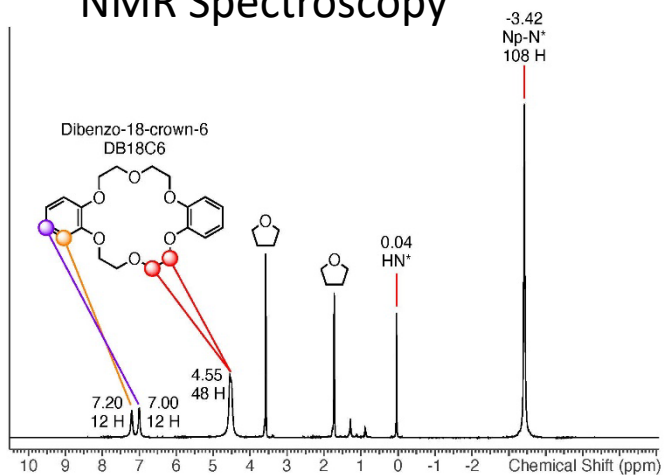


Solid-state molecular structure

NMR Spectroscopy: similar to previous neptunium complexes

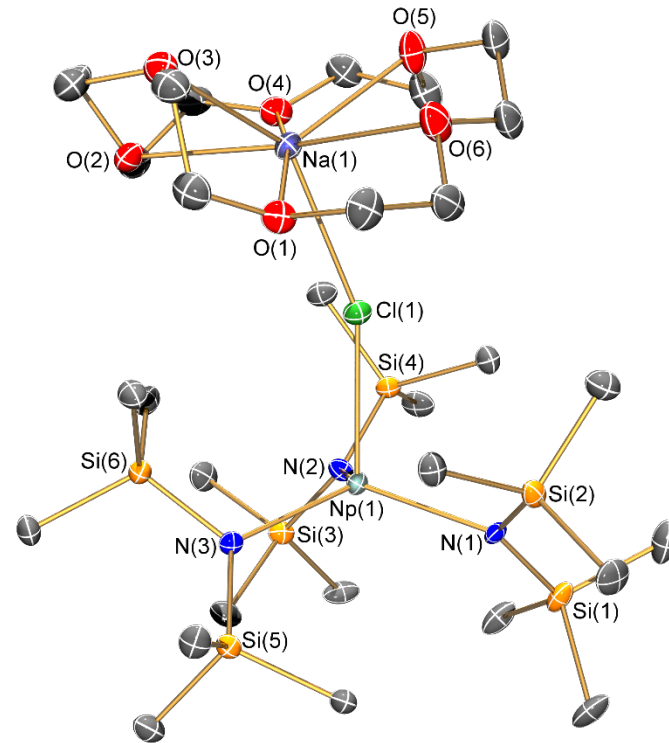
# Np(III)ClN\*<sub>3</sub>[(KDB18-c-6)<sub>3</sub>Cl]: characterization

## NMR Spectroscopy



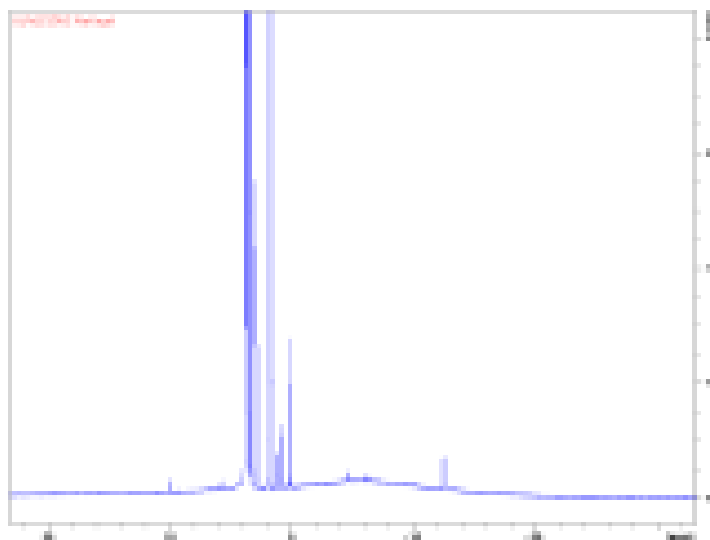
Solid-state molecular structure

# Np(III)(N<sup>\*</sup><sub>3</sub>Cl)(Na(crown)):

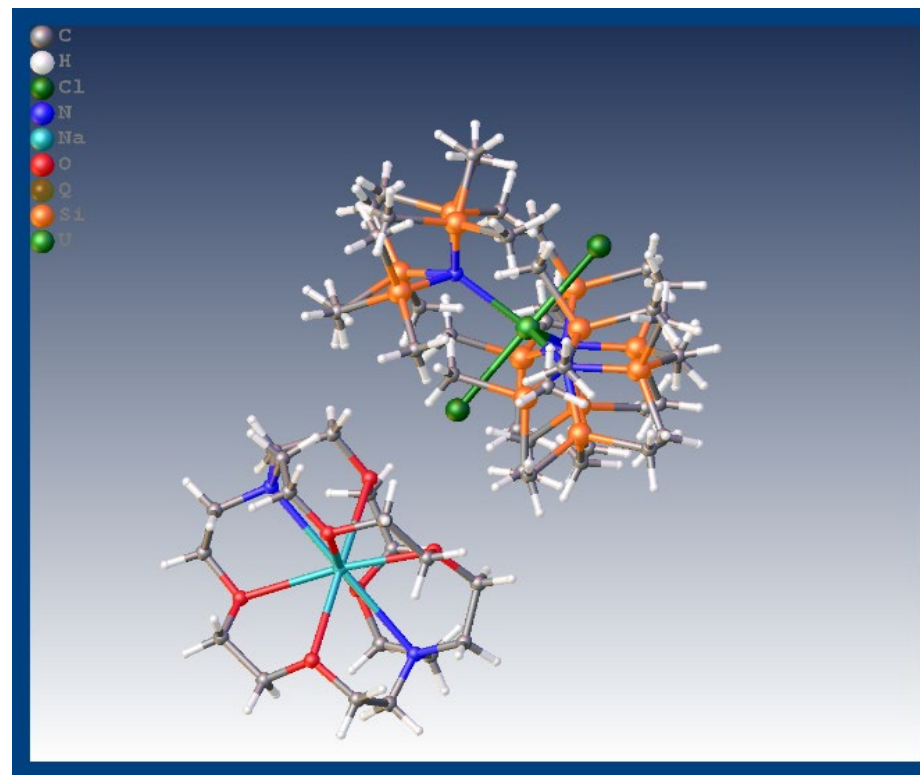


Solid-state molecular  
structure

# $U(Cl)_2N^*_3(Nacrypt)$ : 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>

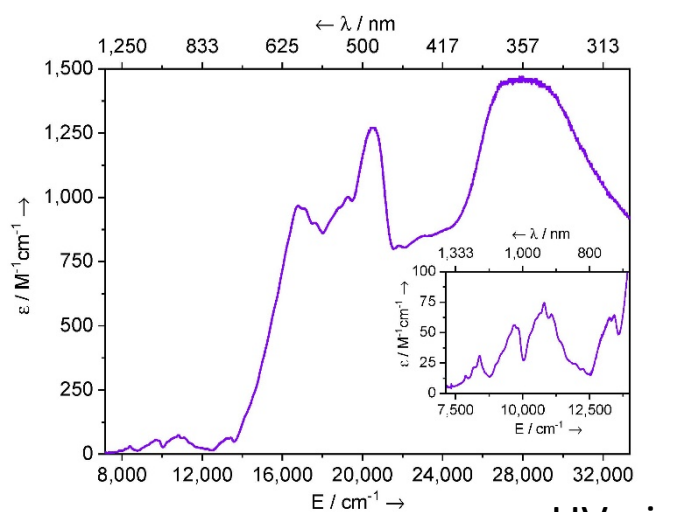
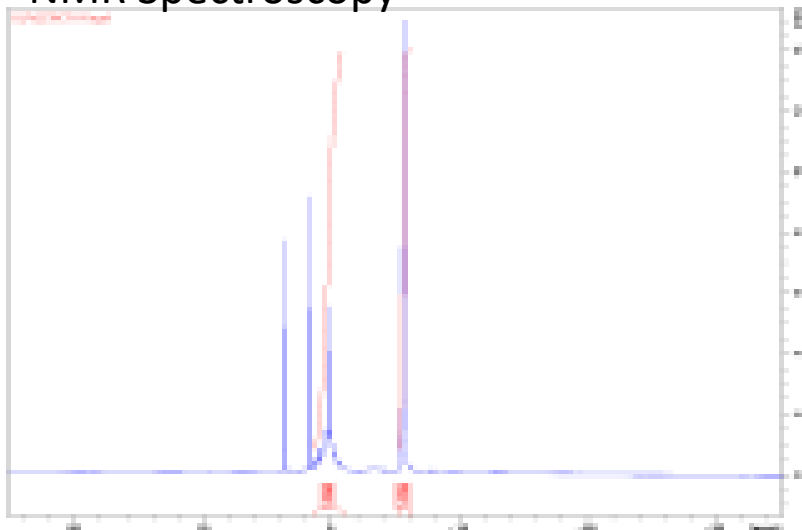
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We appreciate your business.

Elemental Analysis

# UCIN\*<sub>3</sub>(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: \_\_\_\_\_

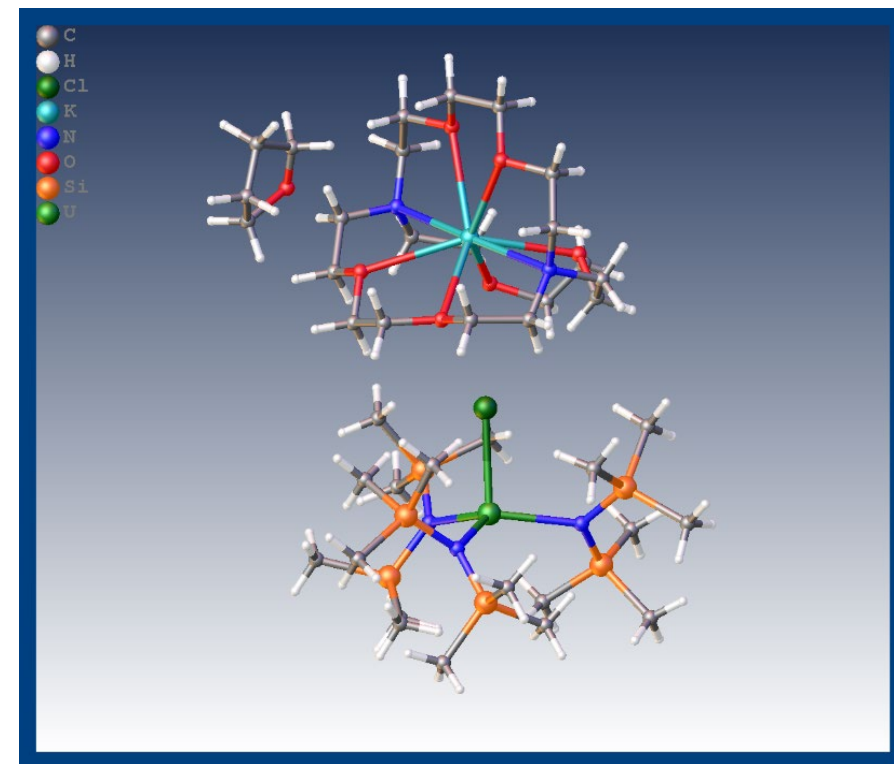
Comments: air sensitive and depleted uranium sample

Midwest Micro Lab  
 7212 N. Shadeland Ave., Suite 110  
 Indianapolis, IN 46250  
 Phone: 317-699-6006  
 Fax: 317-849-8534  
 Website: <http://midwestlab.com>

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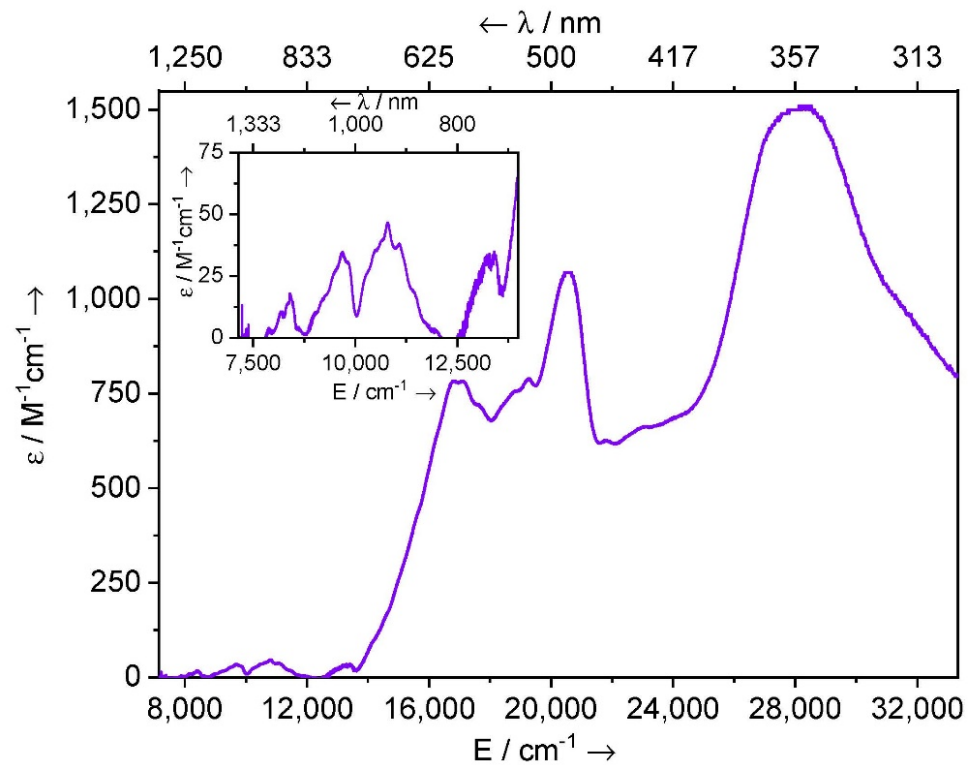
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Elemental Analysis

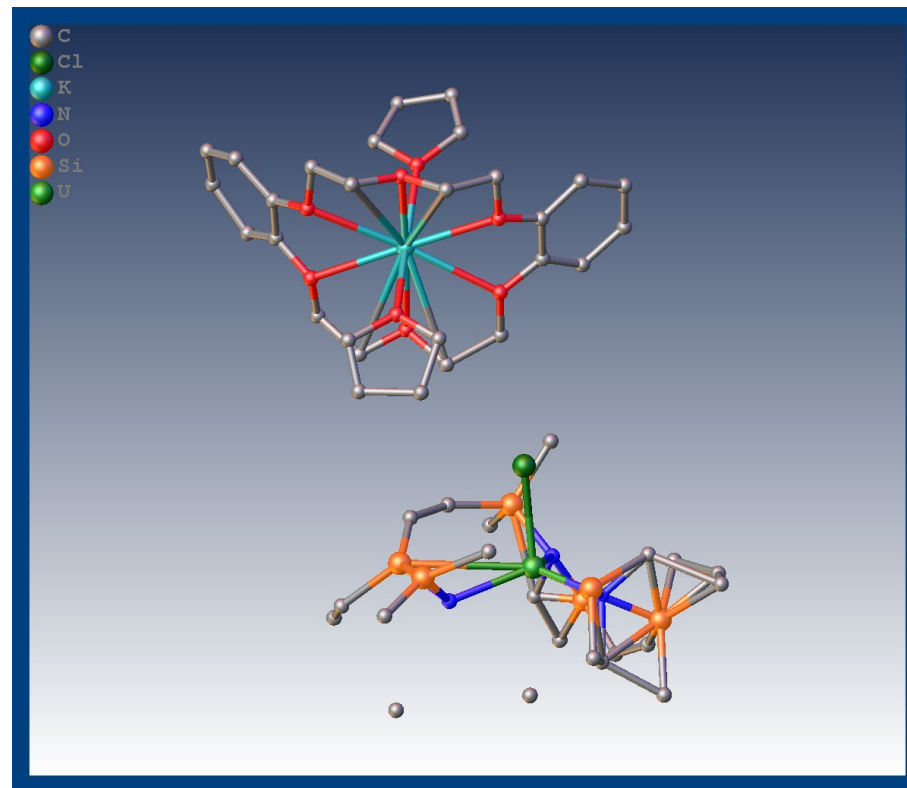


Solid-state molecular structure

# UCIN\*<sub>3</sub>(KDB18-c-6)(THF)<sub>2</sub>: characterization



UV-vis



Solid-state molecular structure

NMR Spectroscopy: similar to previous uranium complexes