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Title: U5+ Complexes and Uranium Nitrido Chemistry

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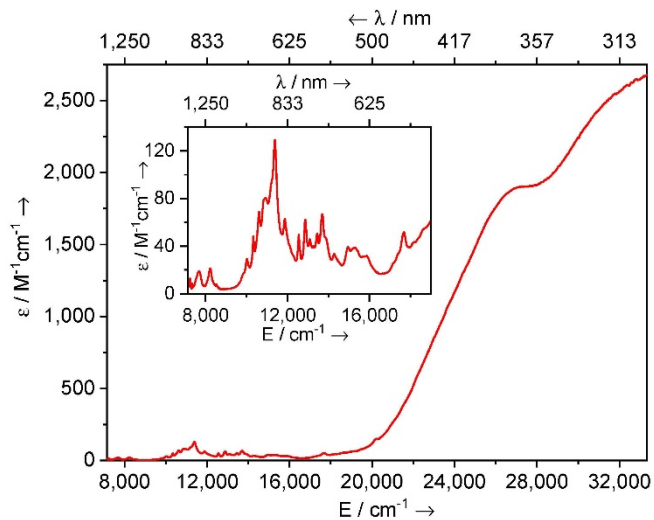
U5+ Complexes and Uranium Nitrido Chemistry

Selena Staun 332373

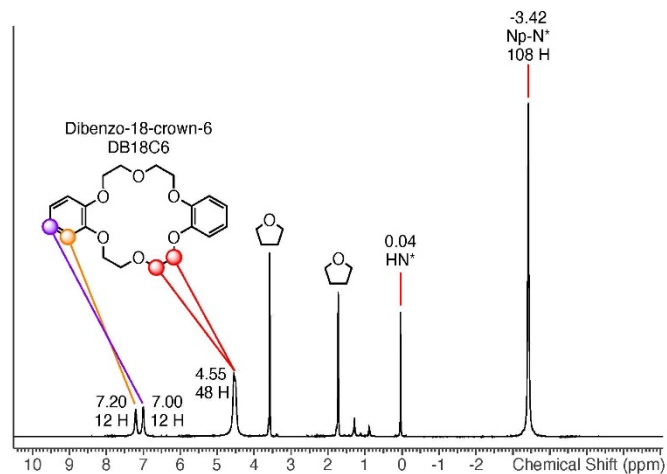
Andrew Gaunt 185633

Material to share with mentor at UCSB

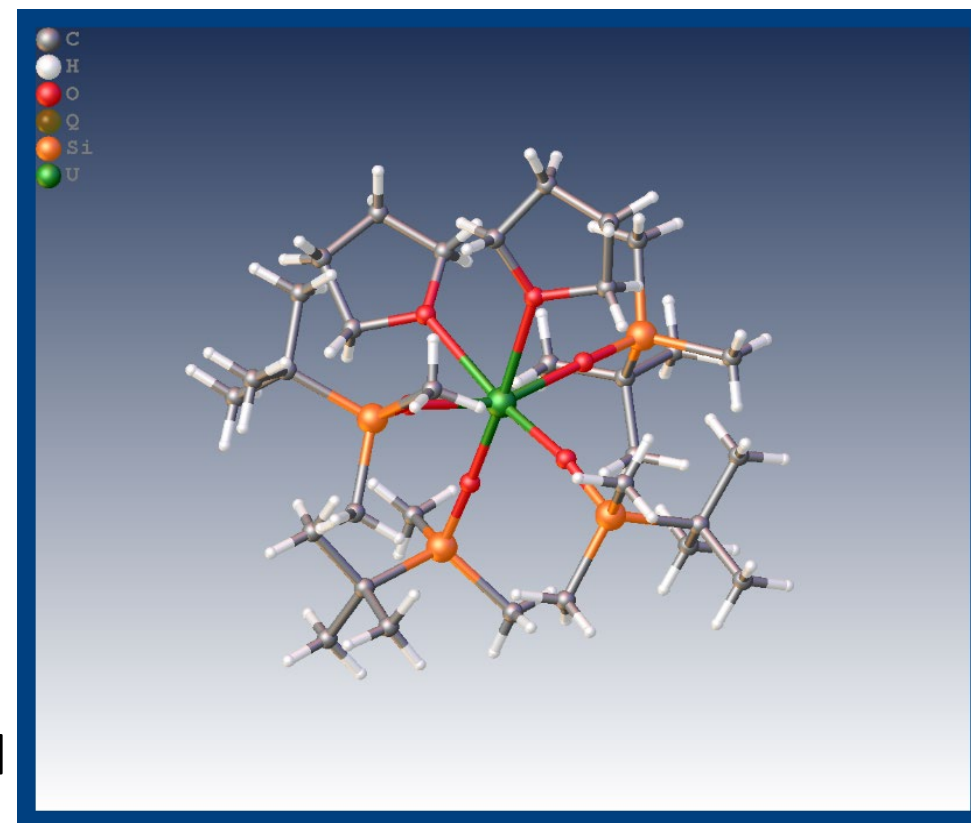
$\text{Np(IV)(OSiMe}_2\text{tbu)}_4(\text{THF})_2$



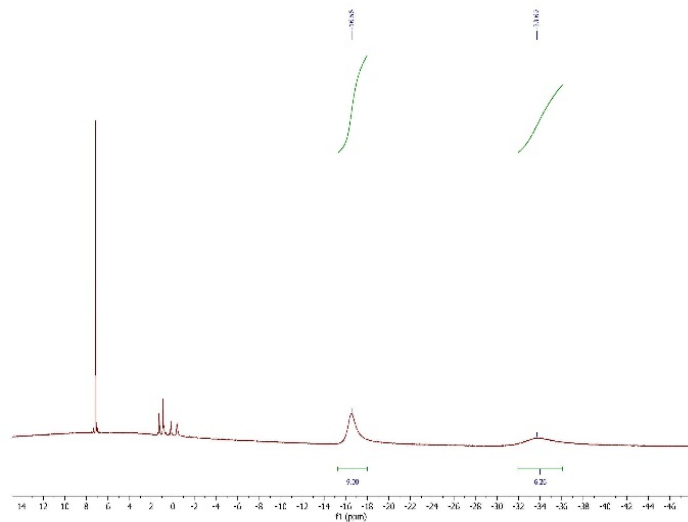
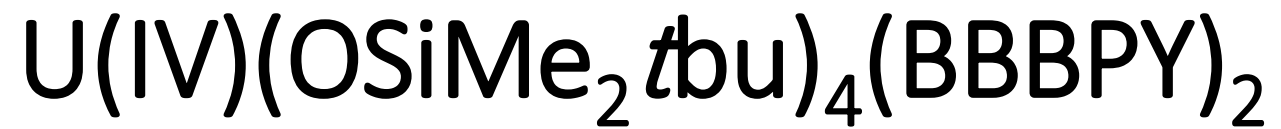
UV-vis: similar to Np(IV)CIN^*_3



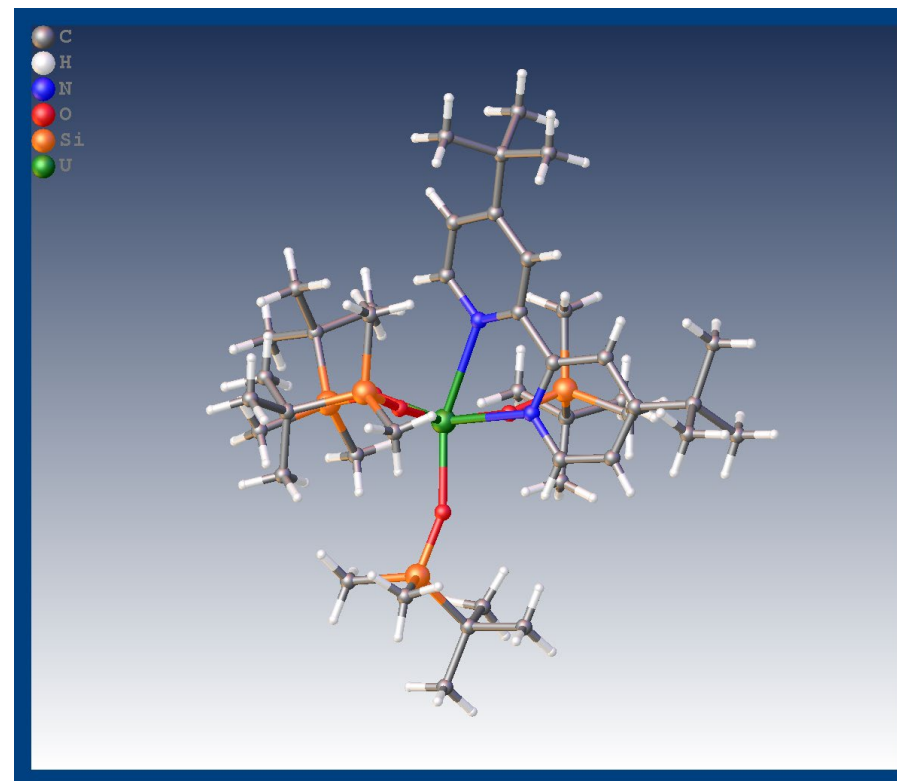
NMR: similar to $\text{Np(III)CIN}^*_3[\text{((DB-18-c-6)K)}_3\text{Cl}]$



X-ray structure: similar to $\text{U(IV)(OSiMe}_2\text{tbu)}_4(\text{THF})_2$

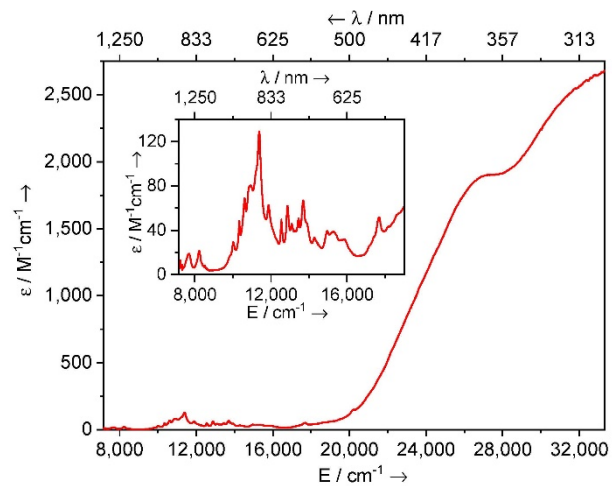


NMR: similar to $\text{U(IV)(OSiMe}_2\text{tbu)}_4(\text{THF})_2$

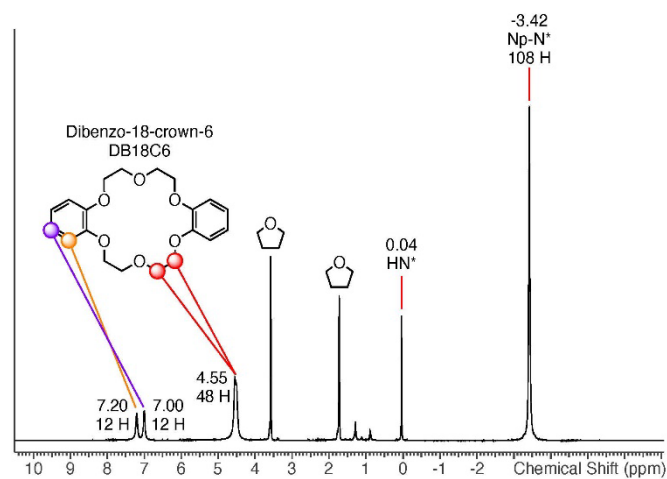


X-ray structure

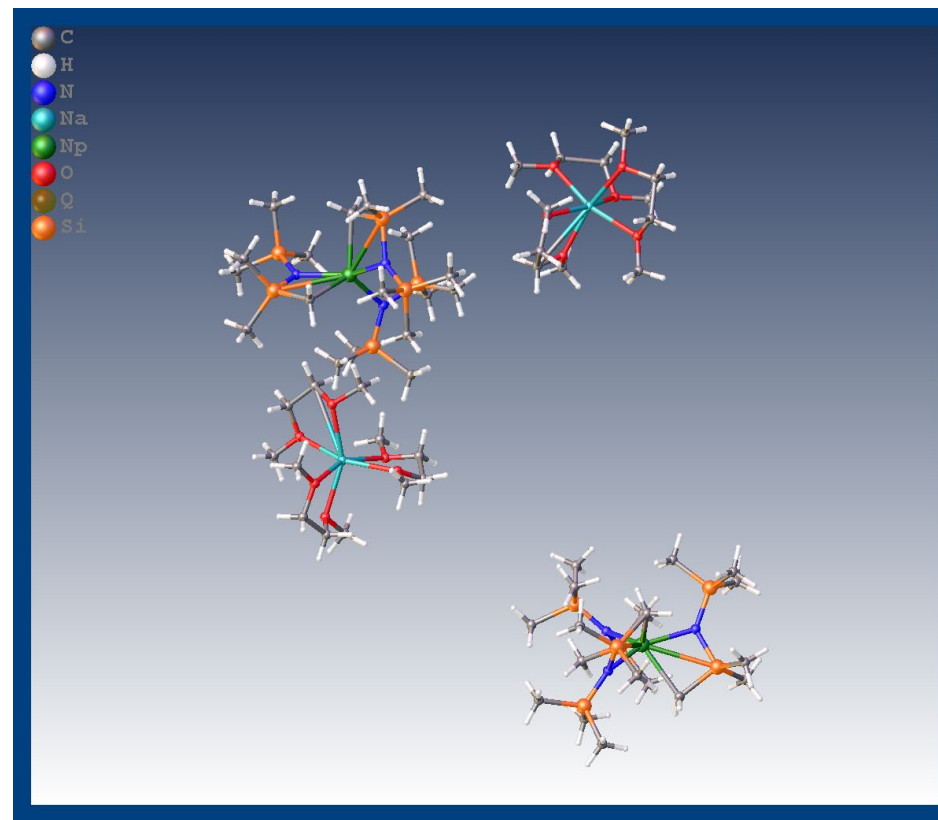
Np(IV)(MC)₂[Na(DME)₃]



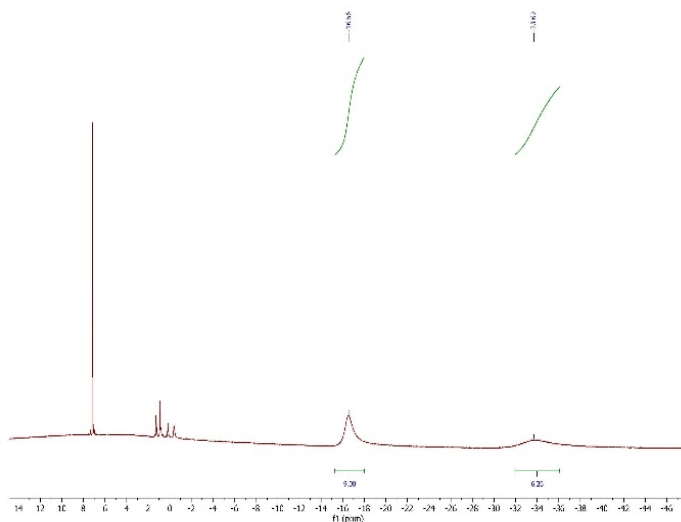
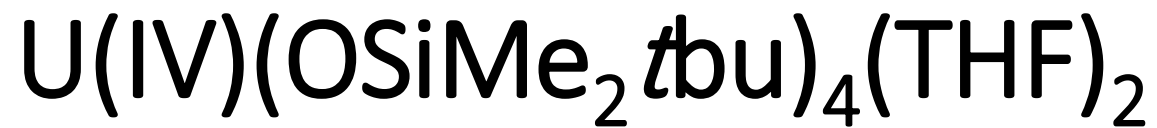
UV-vis: similar to Np(IV)CIN*₃



NMR: similar to Np(III)CIN*₃[((DB-18-c-6)K)₃Cl]



X-ray structure



NMR



SUBMISSION FORM

SLS-116

SAMPLE IDENTIFICATION

Name: Selina Stann
 Institution: Los Alamos National Lab
 Lab Group: Arvon Tondreau
 Results email: SStann@lanl.gov

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

Analysis	Theory	% Found
C	42.36%	
H	8.94%	
N	—	

Single Duplicate Triplicate

Molecular Formula: C₂₂H₂₆O₆Si₄U

M.P. / B.P. _____

Air Sensitive: Yes No

Explosive: Yes No

Hazardous: Yes No

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

Sample Return: Yes No Shipping Address:

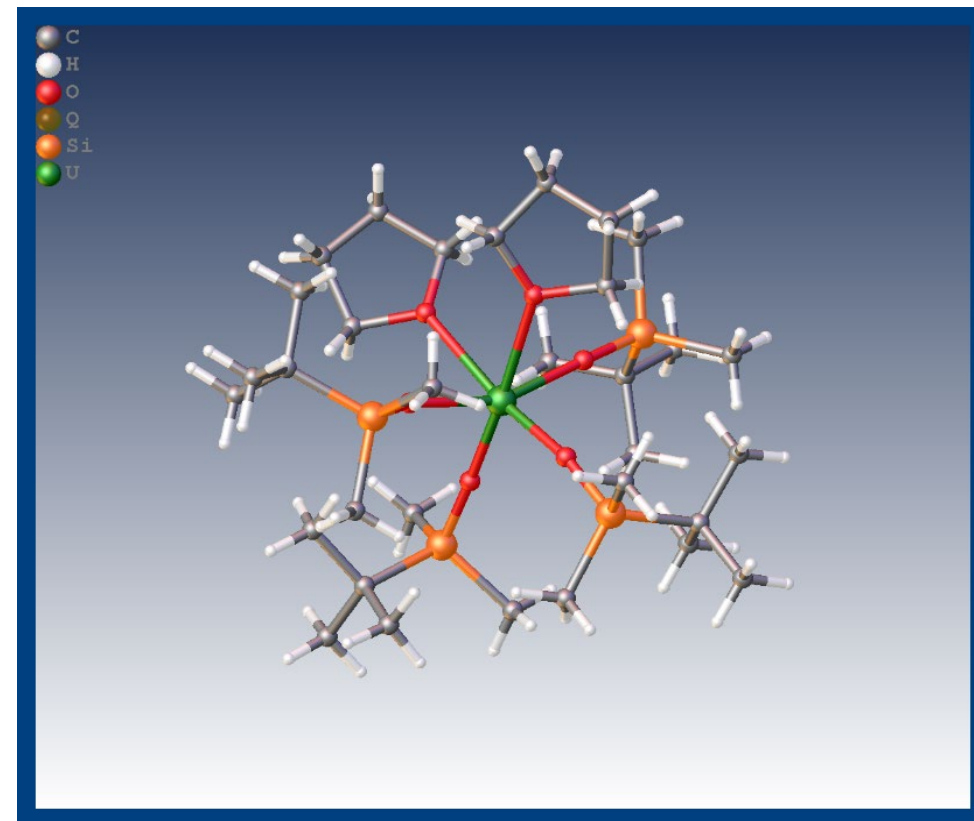
Comments: air sensitive and depleted Uranium sample

Midwest Micro Lab
 7213 N. Shadeland Ave., Suite 110
 Indianapolis, IN 46250
 Phone: 317-848-8600
 Fax: 317-849-8534
 Website: http://midwestlab.com

RECEIVED MAR 05 2010

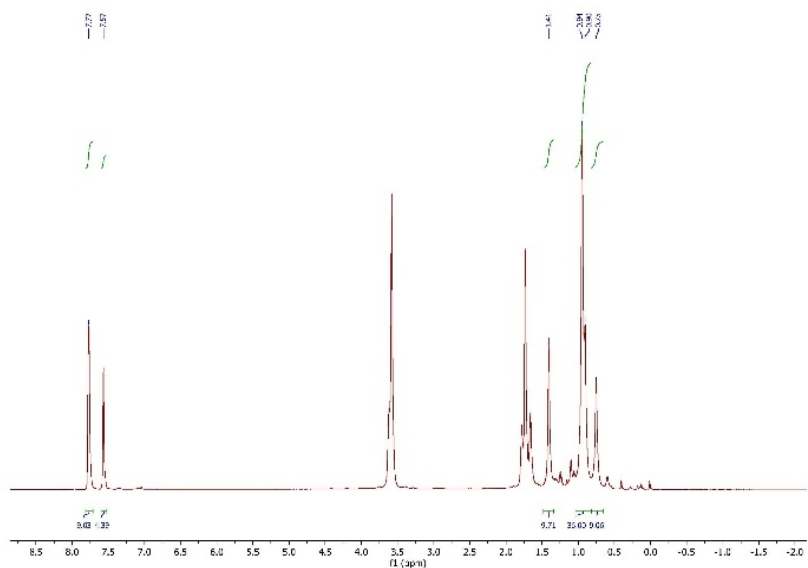
We appreciate your business.

EA



X-ray structure

U(V)(OSiMe₂tbu)₄(THF)₂[BArF]



NMR



SUBMISSION FORM

SLS-115
SAMPLE IDENTIFICATION

Analysis	Theory	% Found
C	43.42%	
H	5.01%	
N	—	

Name: Selena Stamm
Institution: Los Alamos National Lab
Lab Group: Aaron Tondreau
Results email: sstamm@lanl.gov

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

Single Duplicate Triplicate
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:

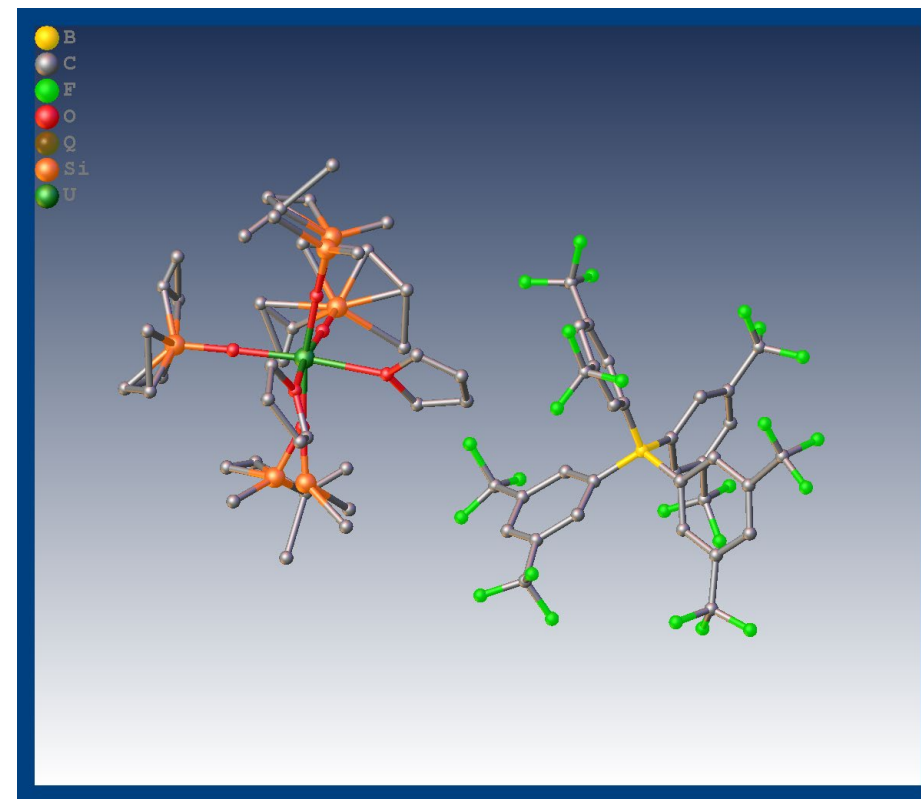
Comments: Air sensitive and depleted uranium sample

Midwest Microb
7312 N. Shevard Ave., Suite 110
Indianapolis, IN 46250
Phone: 317-849-9406
Fax: 317-849-9534
Website: <http://midwestlab.com>

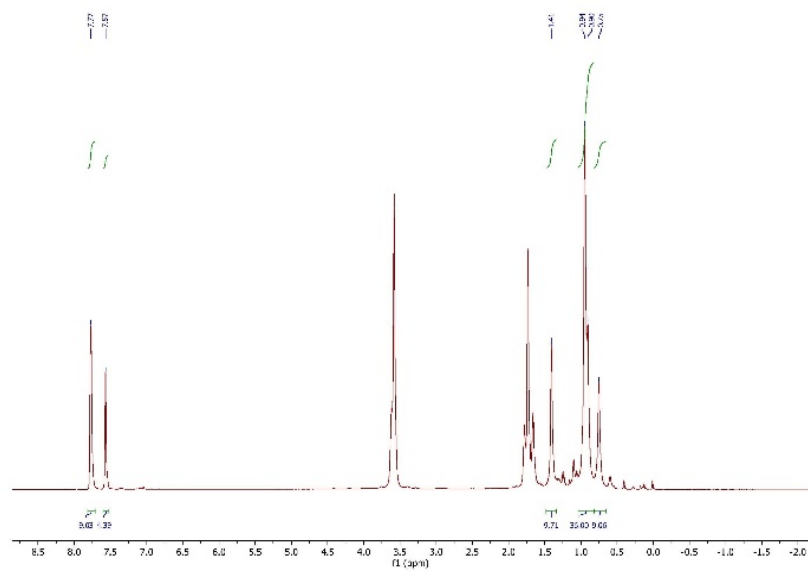
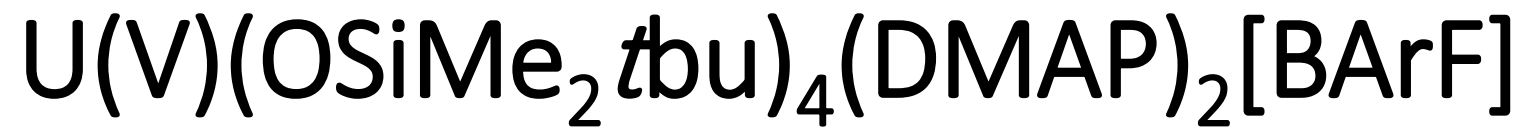
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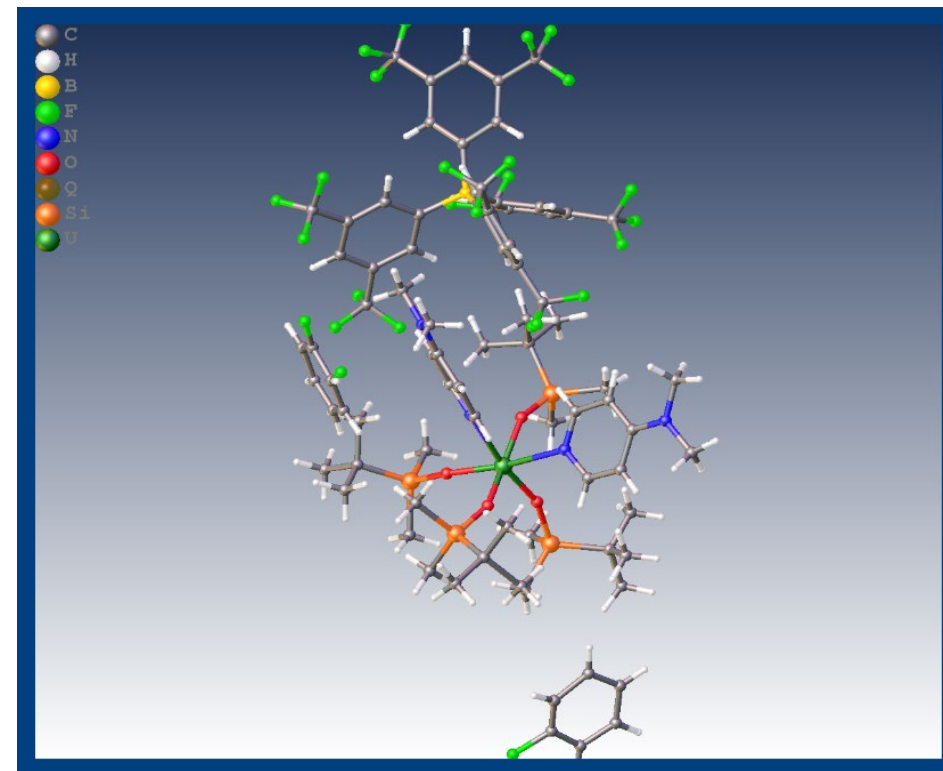
EA



X-ray structure

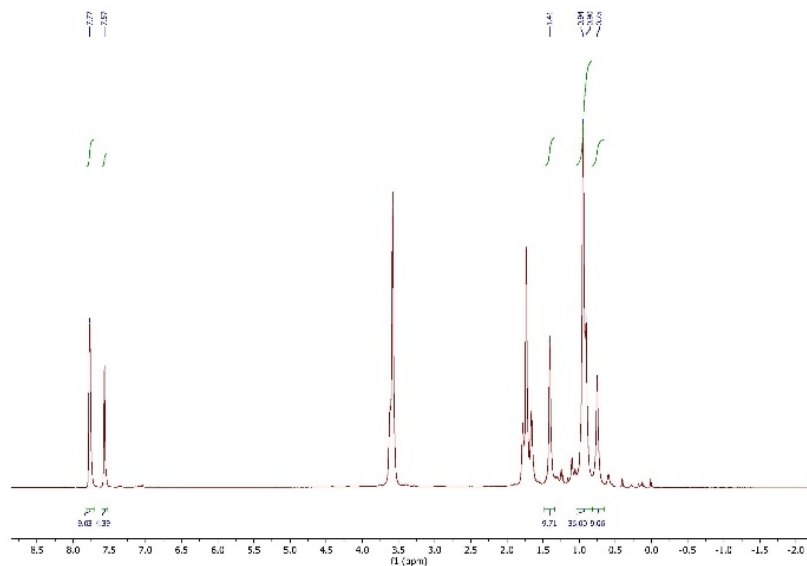


NMR: similar to $\text{U(IV)}(\text{OSiMe}_2\text{tbu})_4(\text{THF})_2[\text{BArF}]$

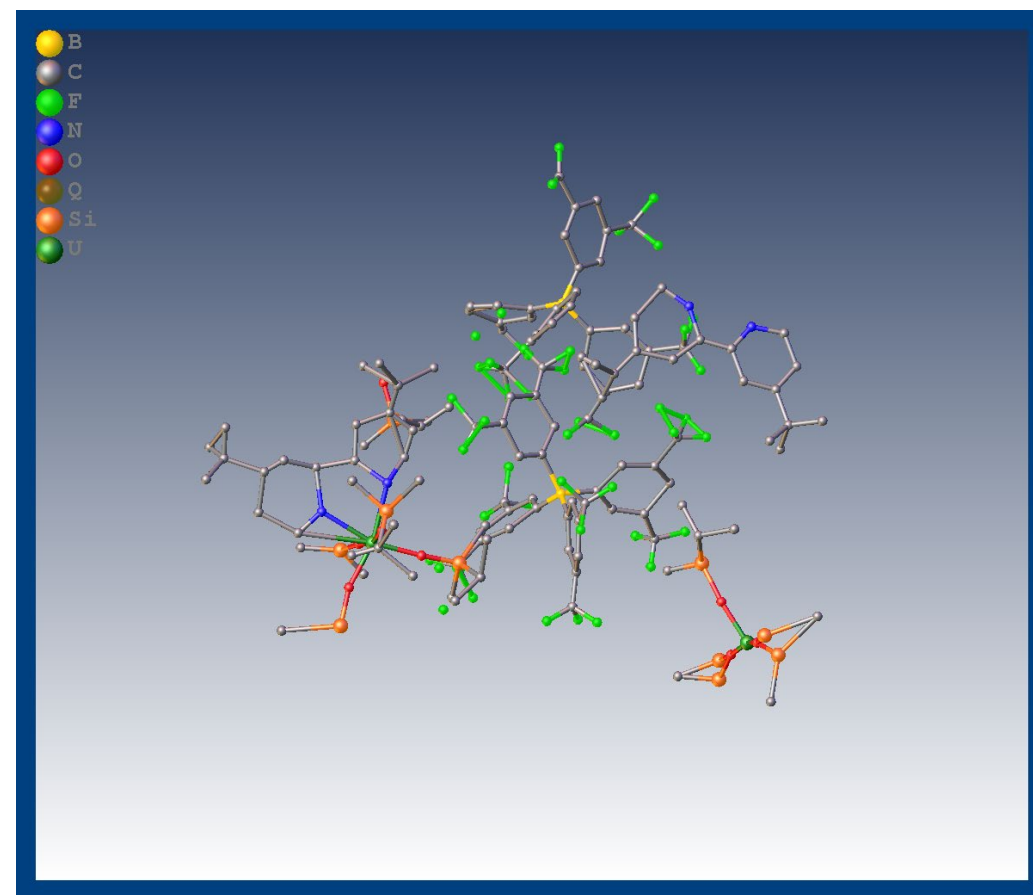


X-ray structure

$\text{U(V)}(\text{OSiMe}_2\text{tbu})_4(\text{BBBPY})_2[\text{BArF}]$

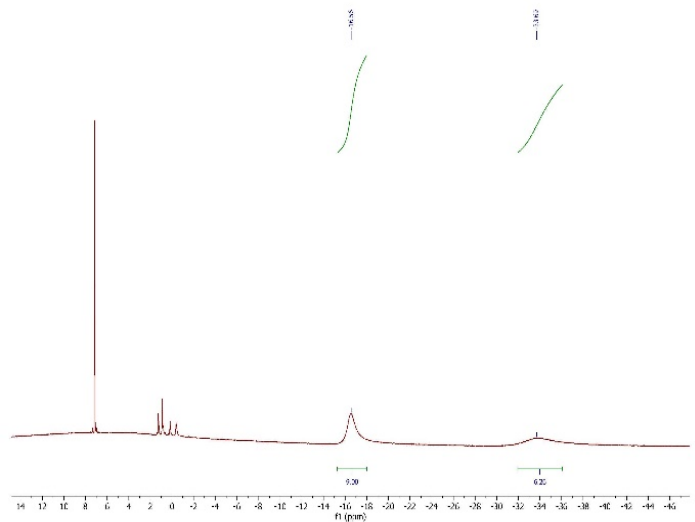


NMR: similar to $\text{U(IV)}(\text{OSiMe}_2\text{tbu})_4(\text{THF})_2[\text{BArF}]$

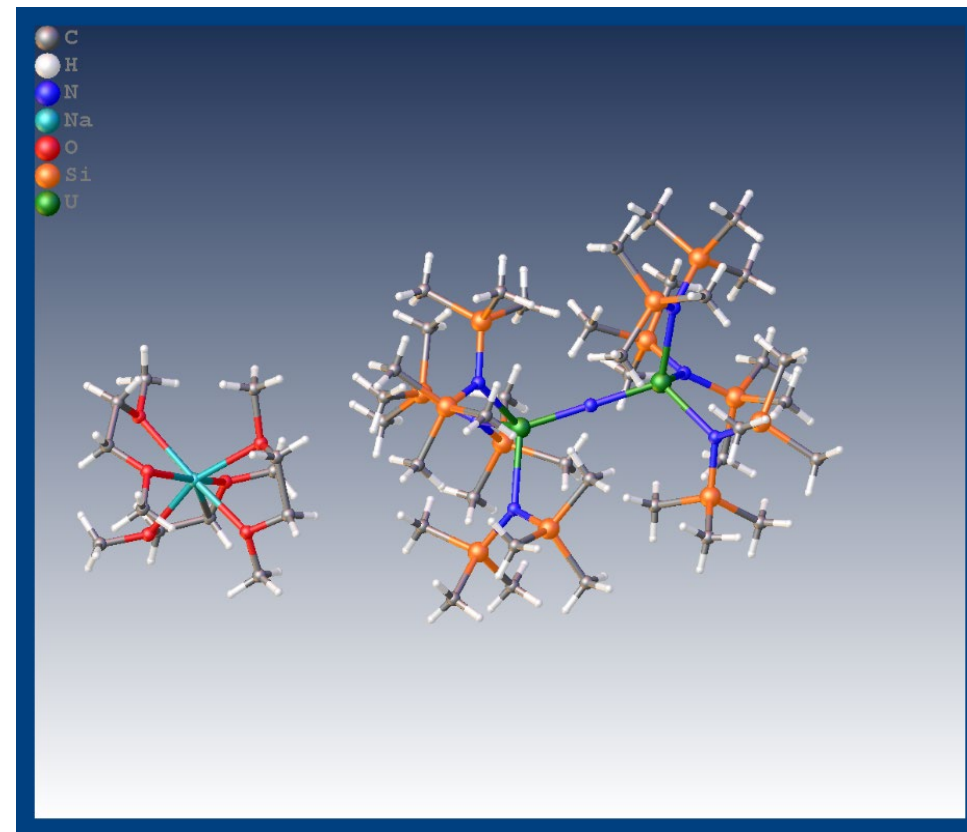


X-ray structure

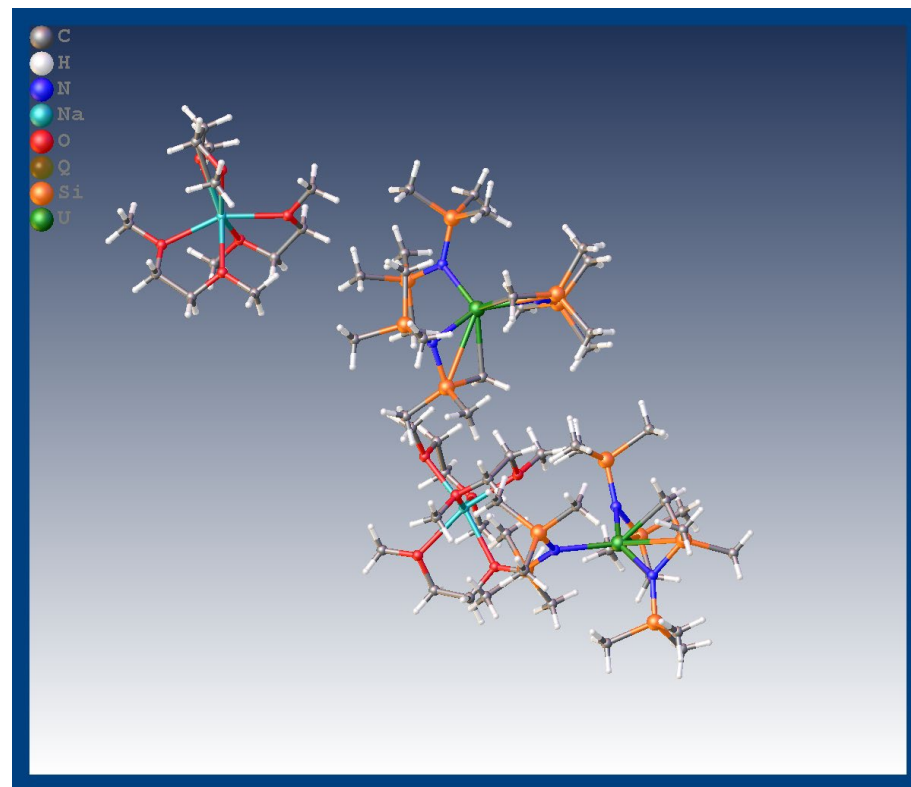
U(bridged-nitride)



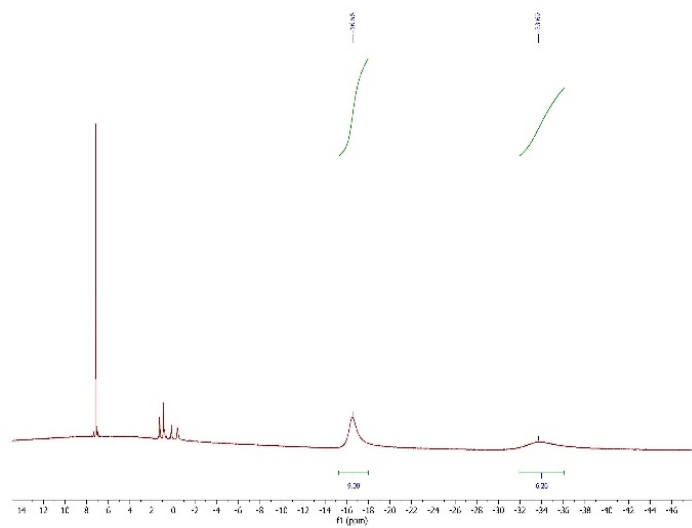
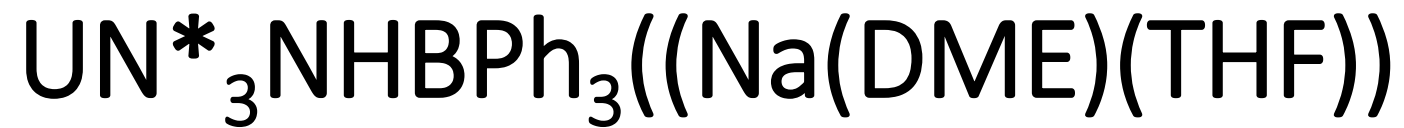
NMR: similar to $\text{U(IV)(OSiMe}_2\text{tbu)}_4(\text{THF})_2$



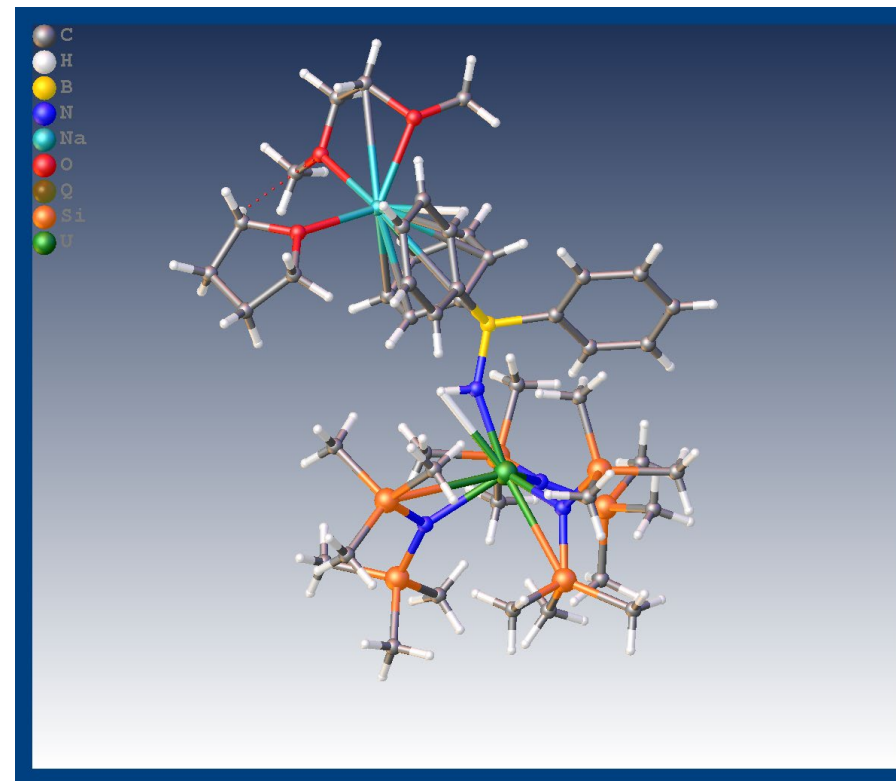
X-ray structure



X-ray structure



NMR: similar to $\text{U}(\text{IV})(\text{OSiMe}_2\text{tbu})_4(\text{THF})_2$



X-ray structure