Electronic Supporting Information (ESI)

Table of Contents

Description of $SiH_3OH_2^+SiH_4$-Ar isomers

$SiH_3OH_2^+SiH_4$-Ar(**I-IV**) isomers are calculated for each $SiH_3OH_2^+SiH_4$(**I-IV**) isomer, which are shown in Figures S4-S7 along with their spectra compared to the experimental $SiH_3OH_2^+SiH_4$-Ar spectrum and the spectrum of their untagged $SiH_3OH_2^+SiH_4$ isomer. The vibrational assignment is listed in Table S3 and all relevant energies are listed in Tables S5-S9. In the respective most stable (**I-IV**)-Ar(**I**) structures, Ar is bound to the free OH group at distances of 2.228, 2.223, 2.226, and 2.287 Å, with binding energies of D_0=13.99, 13.79, 13.45 and 11.28 kJ mol^{-1}. This leads to slight elongations of the involved O-H bonds by 7, 8, 8, and 6 mÅ and contractions of the adjacent O-H bonds by 5, 5, 4, and 1 mÅ for **I**-Ar(**I**), **II**-Ar(**I**) **III**-Ar(**I**) and **IV**-Ar(**I**), respectively. As a result, the ν_{OH}^f/ν_{OH}^s modes of (**I-IV**)-Ar(**I**) are redshifted to 3448, 3442, 3442, and 3482 cm^{-1} and the ν_{OH}^b/ν_{OH}^a modes of (**I-IV**)-Ar(**I**) are blueshifted by 76, 74, 73, and 46 cm^{-1} to 2934, 2925, 2958, and 3633 cm^{-1}, respectively. In the case of (**I-III**)-Ar(**I**), Ar attachment leads to a weaking of the dihydrogen bridges, whose binding distances are increased by 16, 25, and 26 mÅ, respectively. In the (**I/II**)-Ar(**II**) isomers (E_0=5.64 and 5.85 kJ mol^{-1}), Ar is bound almost perpendicularly (ϕ_{OHAr}=96.5°, 101.1°) to the H atom of the H_2O moiety in the dihydrogen bridge with bond distances of 3.206 and 3.247 Å and binding energies of D_0=8.34 and 8.26 kJ mol^{-1}, respectively. As a result, the O-H bonds are slightly shortened by 1 and 2 mÅ, leading to small blueshifts of the corresponding ν_{OH}^b modes by 12 and 18 cm^{-1} to 2870 and 2869 cm^{-1}. A corresponding computational approach for a **III**-Ar(**II**) isomer, where Ar is also bonded almost perpendicularly to the H atom of the H_2O group in the DHB, leads to a rotation of the SiH_3/SiH_4 groups and converges to the **II**-Ar(**II**) isomer. In **IV**-Ar(**II**) (E_0=5.61 kJ mol^{-1}), Ar is bound to the other free OH group with a binding energy of D_0=11.02 kJ mol^{-1}, resulting in a similar elongation of the involved O-H bond by 1 mÅ and corresponding redshift of the ν_{OH}^s modes to 3482 cm^{-1} and blueshift of the ν_{OH}^a mode to 3634 cm^{-1} as for **IV**-Ar(**I**). In (**I-III**)-Ar(**III**) (E_0=6.33, 6.03, 5.56 kJ mol^{-1}), Ar is bound to the SiH_3 moiety with the same binding distance to Si of R_{SiAr}=3.311 Å and binding energies of D_0=7.65, 7.76, and 7.89 kJ mol^{-1}. As a result, the involved O-H bonds of the dihydrogen bridges are slightly shortened by 3 mÅ leading to blueshifts of the ν_{OH}^b modes by 43, 45, and 45 cm^{-1} to 2901, 2896, and 2930 cm^{-1}, respectively. In (**IV**)-Ar(**III**) (E_0=7.30 kJ mol^{-1}), Ar is bound almost perpendicularly (ϕ_{SiHAr}=91.5°) to the bridging H atom of the Si-H-Si bridge with a bond distance to H of R_{HAr}=3.396 Å and binding energies of D_0=5.89 kJ mol^{-1}. This affects the Si-H-Si bridge by shortening the Si-H and Si-H...Si bonds by 2 and 3 mÅ, respectively, but has almost no effect on the O-H bonds and their vibrational modes. In (**I-III**)-Ar(**IV**) (E_0=10.09, 9.88, 9.86 kJ mol^{-1}), Ar is bound to SiH_4 with binding distances to Si of R_{SiAr}=3.617, 3.617, and 3.627 Å and binding energies of D_0=3.90, 3.91, and 3.59 kJ mol^{-1}, respectively. This leads to a slight elongation of the O-H bonds involved in the dihydrogen bridge by 1, 2, and 2 mÅ, resulting in small redshifts of the corresponding ν_{OH}^b modes of 31, 29, and 28 cm^{-1} to 2827, 2822, and 2857 cm^{-1}, respectively. In (**IV**)-Ar(**IV**) (E_0=7.30 kJ mol^{-1}), Ar is also bound to SiH_4 with a bond distance to Si of R_{SiAr}=3.563 Å and a binding energy of D_0=3.99 kJ mol^{-1}. However, because SiH_4 is bound to the SiH_3 group here, Ar tagging has almost no effect on the O-H bonds and their vibrational modes.

Table S1. Computed vibrational frequencies (in cm^{-1}, B3LYP-D3/aug-cc-pVTZ) of $SiH_3OH_2^+$ and $SiH_3OH_2^+$-Ar compared to experimental values. The experimental values are given with peak width (fwhm in parenthesis) and are assigned to the most dominant vibrations.[a]

Mode	$SiH_3OH_2^+$	$SiH_3OH_2^+$-Ar(H)	$SiH_3OH_2^+$-Ar(Si)	Exp
$\nu_{OH}^{b(Ar)}$		3369 (984)		**C1** 3400 (21)
ν_{OH}^{s}	3550 (232)		3556 (237)	
ν_{OH}^{f}		3602 (314)		**E** 3600 (30)
ν_{OH}^{a}	3626 (319)		3632 (304)	

[a]Data taken from George et al., *Angew. Chem. Int. Ed.* 2018, **57**, 2919.

Table S2. Computed vibrational frequencies (in cm^{-1}, B3LYP-D3/aug-cc-pVTZ) of $SiH_3OH_2^+SiH_4$(**I**-**IV**) compared to experimental values of $SiH_3OH_2^+SiH_4$ (Figure 3). The experimental values are given with peak width (fwhm in parenthesis) and are assigned to the most dominant vibrations.

Mode	**I**	**II**	**III**	**IV**	Exp
$\nu_{OH}^{b(SiH4)}$	2858 (2284)				**A1** 2830 (60)
$\nu_{OH}^{b(SiH4)}$		2851 (2195)			
$\nu_{OH}^{b(SiH4)}$			2885 (2011)		**A2** 2872 (50)
$2\beta_{OH}$	3212	3222	3216	3228	**B** 3194 (40)
ν_{OH}^{s}				3587 (183)	**D** 3578 (20)
ν_{OH}^{f}	3608 (233)				**E** 3602 (30)
ν_{OH}^{f}		3605 (269)			
ν_{OH}^{f}			3611 (287)		
ν_{OH}^{a}				3662 (239)	**F** 3695 (10)

Table S3. Computed vibrational frequencies (in cm^{-1}, B3LYP-D3/aug-cc-pVTZ) of $SiH_3OH_2^+SiH_4$(**I**-**IV**)-Ar(**I**-**IV**) compared to experimental values of $SiH_3OH_2^+SiH_4$-Ar (Figure 4). The experimental values are given with peak width (fwhm in parenthesis) and are assigned to the most dominant vibrations.

Mode	$\nu_{OH}^{b(SiH4)}$	$\nu_{OH}^{b(SiH4)}$	$2\beta_{OH}$	$\nu_{OH}^{b(Ar)}$	$\nu_{OH}^{b(Ar)}$	ν_{OH}^{s}	ν_{OH}^{f}	ν_{OH}^{a}
I-Ar(**I**)		2934 (2195)	3216	3448 (839)				
I-Ar(**II**)	2870 (2119)		3214				3615 (233)	
I-Ar(**III**)		2901 (2270)	3214				3611 (232)	
I-Ar(**IV**)	2827 (2413)		3210				3609 (226)	
II-Ar(**I**)		2925 (2125)	3216	3442 (921)				
II-Ar(**II**)	2869 (2034)		3222				3611 (276)	
II-Ar(**III**)		2896 (2162)	3222				3609 (270)	
II-Ar(**IV**)	2822 (2298)		3220				3605 (273)	
III-Ar(**I**)		2958 (1928)	3216	3442 (974)				
III-Ar(**II**)	n.a.		n.a.					n.a.
III-Ar(**III**)		2930 (1949)	3222				3614 (288)	
III-Ar(**IV**)	2857 (2085)		3218				3613 (293)	
IV-Ar(**I**)			3224		3482 (664)		3633 (283)	
IV-Ar(**II**)			3226		3482 (671)		3634 (279)	
IV-Ar(**III**)			3226			3579 (181)		3663 (235)
IV-Ar(**IV**)			3228			3580 (181)		3664 (234)
EXP	**A1** 2869 (20)	**A2** 2910 (70)	**B** 3232 (45)	**C1** 3456 (20)	**C2** 3495 (20)		**E** 3629 (15)	

Table S4. Various energies of the $SiH_3OH_2^+SiH_4$(**I-IV**) isomers calculated at the B3LYP-D3/aug-cc-pVTZ level. Energies are given in kJ mol^{-1}.

Isomer	E_0	E_e	G_0	$D_0(SiH_4)$
I	0.00	0.00	0.00	38.86
II	0.13	-0.12	1.56	38.73
III	0.40	-0.19	3.59	38.46
IV	2.64	1.37	4.14	36.23

Table S5. Various energies of the $SiH_3OH_2^+SiH_4$(**I**)-Ar(**I-IV**) isomers calculated at the B3LYP-D3/aug-cc-pVTZ level. Energies are given in kJ mol^{-1}.

	E_0	E_e	G_0	D_0(Ar)
I-Ar(**I**)	0.00	0.00	0.00	13.99
I-Ar(**II**)	5.64	5.91	12.18	8.34
I-Ar(**III**)	6.33	6.25	11.33	7.65
I-Ar(**IV**)	10.09	10.39	11.08	3.90

Table S6. Various energies of the $SiH_3OH_2^+SiH_4$(**II**)-Ar(**I-IV**) isomers calculated at the B3LYP-D3/aug-cc-pVTZ level. Energies are given in kJ mol^{-1}.

	E_0	E_e	G_0	D_0(Ar)
II-Ar(**I**)	0.00	0.00	0.00	13.79
II-Ar(**II**)	5.53	5.46	16.55	8.26
II-Ar(**III**)	6.03	6.16	11.65	7.76
II-Ar(**IV**)	9.88	10.30	13.41	3.91

Table S7. Various energies of the $SiH_3OH_2^+SiH_4$(**III**)-Ar(**I-IV**) isomers calculated at the B3LYP-D3/aug-cc-pVTZ level. Energies are given in kJ mol^{-1}.

	E_0	E_e	G_0	D_0(Ar)
III-Ar(**I**)	0.00	0.00	0.00	13.45
III-Ar(**II**)	n.a.	n.a.	n.a.	n.a.
III-Ar(**III**)	5.56	6.21	4.80	7.89
III-Ar(**IV**)	9.86	10.38	8.64	3.59

Table S8. Various energies of the $SiH_3OH_2^+SiH_4$(**IV**)-Ar(**I-IV**) isomers calculated at the B3LYP-D3/aug-cc-pVTZ level. Energies are given in kJ mol^{-1}.

	E_0	E_e	G_0	D_0(Ar)
IV-Ar(**I**)	0.00	0.00	0.00	11.28
IV-Ar(**II**)	0.27	0.03	1.68	11.02
IV-Ar(**III**)	5.39	5.82	9.13	5.89
IV-Ar(**IV**)	7.30	7.54	8.98	3.99

Table S9. Various energies of the $SiH_3OH_2^+SiH_4$(**I**-**IV**)-Ar(**I**-**IV**) isomers calculated at the B3LYP-D3/aug-cc-pVTZ level. Energies are given in kJ mol^{-1}.

	E_0^{tot}	E_e^{tot}	G_0^{tot}	D_0(Ar)
I-Ar(**I**)	0.00	0.00	0.00	13.99
II-Ar(**I**)	0.33	-0.02	-0.41	13.79
III-Ar(**I**)	0.94	-0.29	8.83	13.45
IV-Ar(**I**)	5.34	3.70	9.55	11.28
IV-Ar(**II**)	5.61	3.74	11.23	11.02
I-Ar(**II**)	5.64	5.91	12.18	8.34
II-Ar(**II**)	5.85	5.45	16.14	8.26
III-Ar(**II**)	n.a.	n.a.	n.a.	n.a.
I-Ar(**III**)	6.33	6.25	11.33	7.65
II-Ar(**III**)	6.35	6.14	11.24	7.76
III-Ar(**III**)	6.50	5.93	13.63	7.89
I-Ar(**IV**)	10.09	10.39	11.08	3.90
II-Ar(**IV**)	10.21	10.29	13.00	3.91
IV-Ar(**III**)	10.73	9.52	18.69	5.89
III-Ar(**IV**)	10.80	10.09	17.47	3.59
IV-Ar(**IV**)	12.63	11.24	18.53	3.99

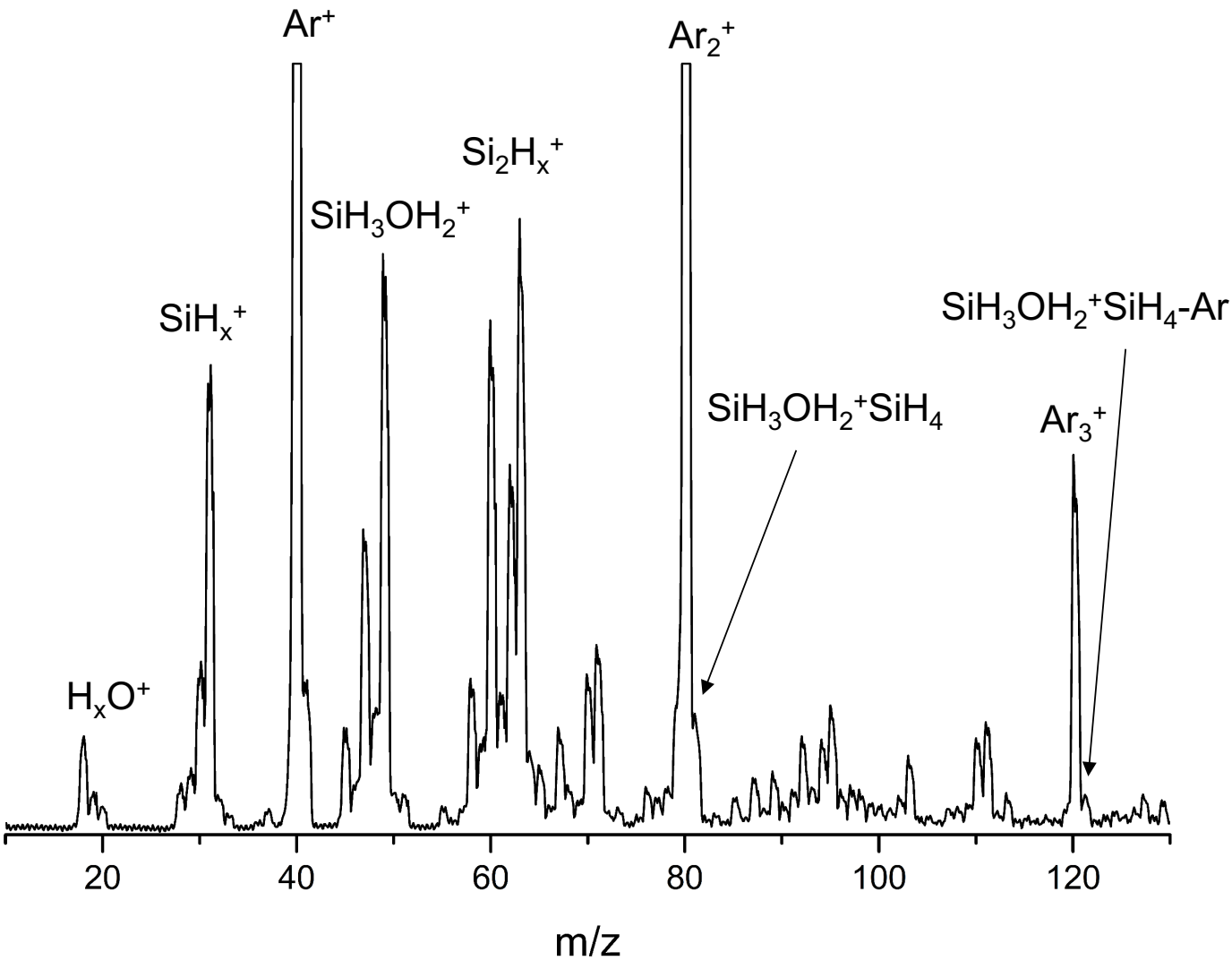

Ar+
Ar2+
Si2Hx+
SiH3OH2+
SiHx+
SiH3OH2+SiH4-Ar
SiH3OH2+SiH4
Ar3+
HxO+
20
40
60
80
100
120
m/z

Figure S1

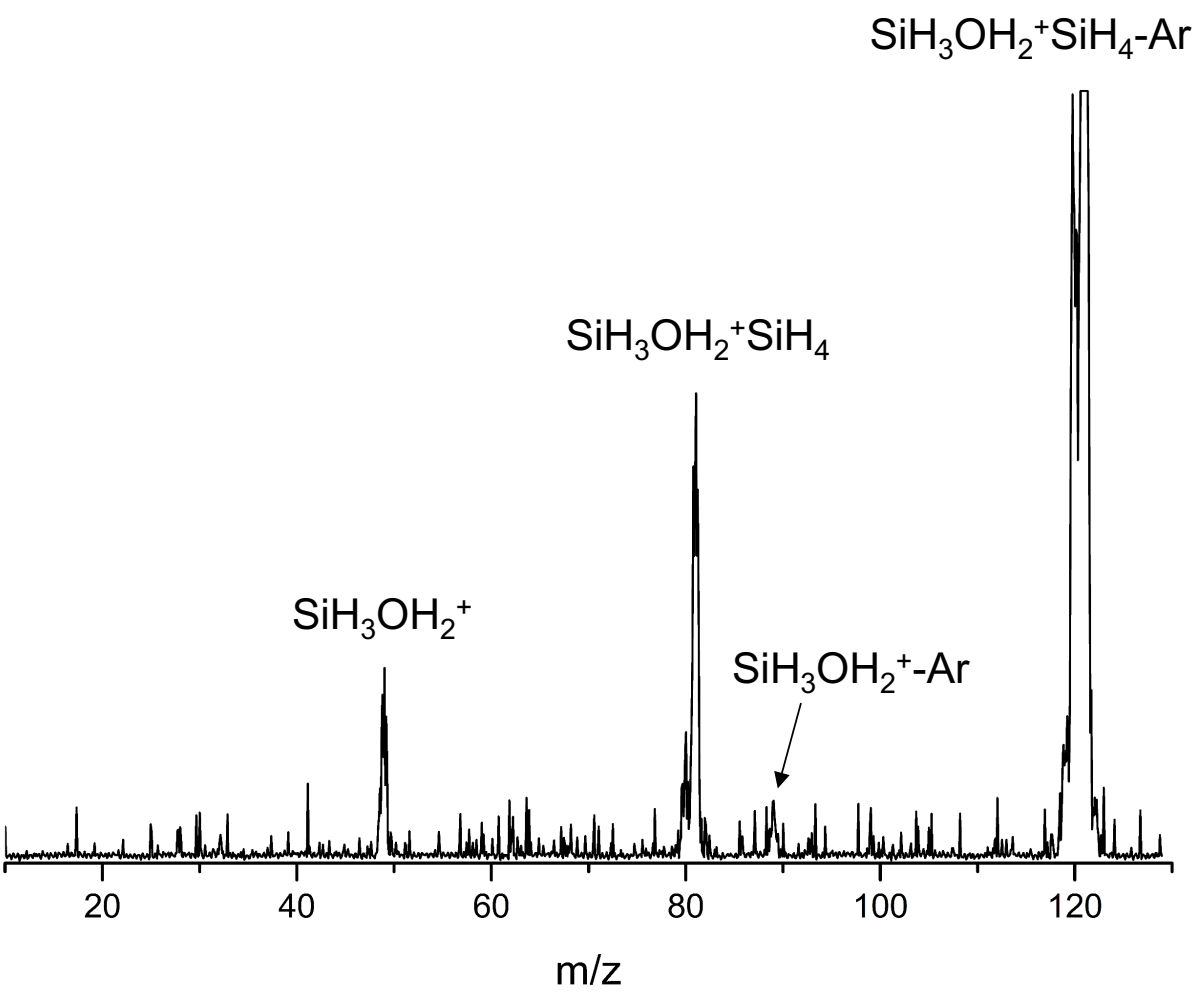

$SiH_3OH_2^+SiH_4$-Ar
$SiH_3OH_2^+SiH_4$
$SiH_3OH_2^+$
$SiH_3OH_2^+$-Ar
20
40
60
80
100
120
m/z

Figure S2

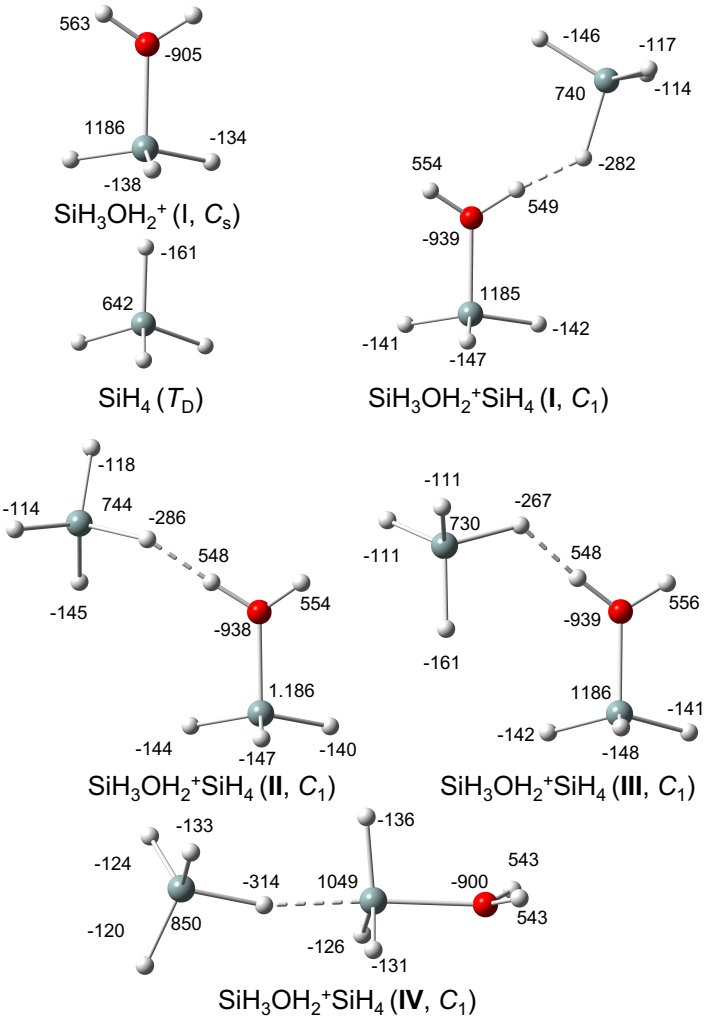

563
-905
1186
-134
-138
SiH3OH2+ (I, Cs)
-161
642
SiH4 (TD)
-146
-117
740
-114
554
-282
549
-939
1185
-142
-141
-147
SiH3OH2+SiH4 (I, C1)
-118
-114
744
-286
548
-145
554
-938
1.186
-144
-147
-140
SiH3OH2+SiH4 (II, C1)
-111
-267
730
-111
548
556
-939
-161
1186
-141
-142
-148
SiH3OH2+SiH4 (III, C1)
-133
-124
-136
543
-314
1049
-900
-120
850
543
-126
-131
SiH3OH2+SiH4 (IV, C1)

Figure S3

Figure S4

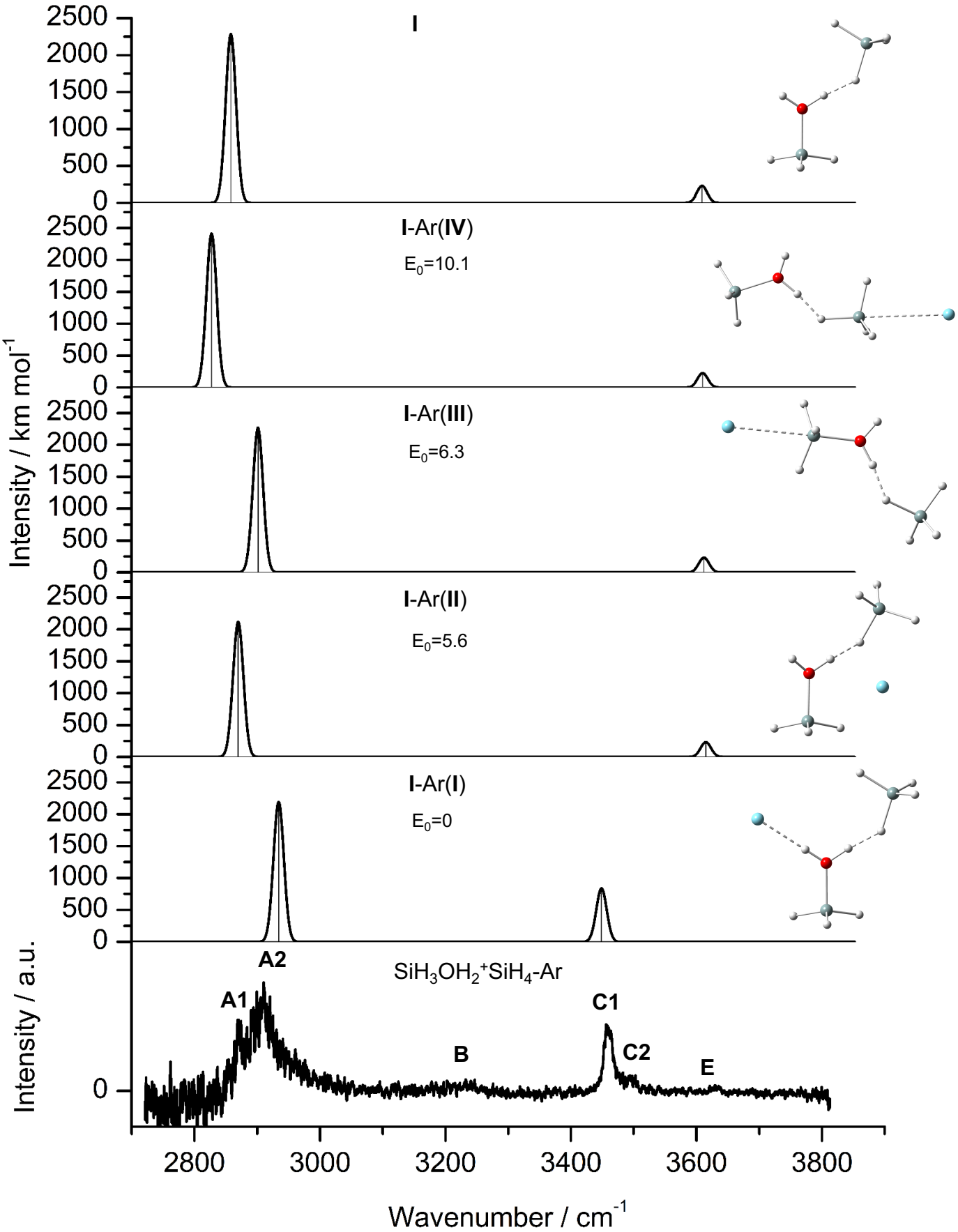

I
I-Ar(IV)
E0=10.1
I-Ar(III)
E0=6.3
I-Ar(II)
E0=5.6
I-Ar(I)
E0=0
Intensity / km mol-1
SiH3OH2+SiH4-Ar
A1
A2
B
C1
C2
E
Intensity / a.u.
Wavenumber / cm-1

Figure S5

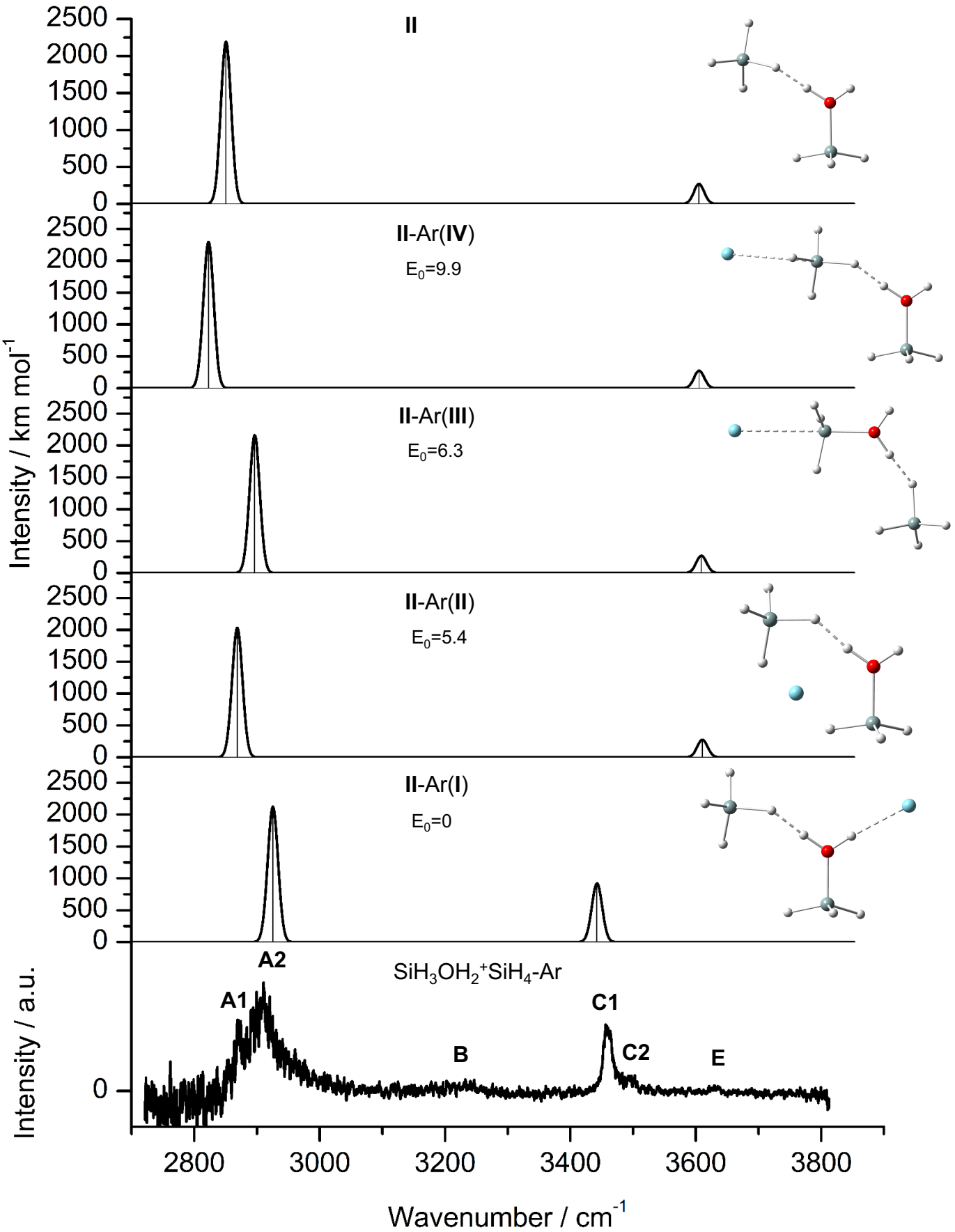

II
II-Ar(IV)
E0=9.9
II-Ar(III)
E0=6.3
II-Ar(II)
E0=5.4
II-Ar(I)
E0=0
Intensity / km mol-1
2500
2000
1500
1000
500
0
SiH3OH2+SiH4-Ar
A1
A2
B
C1
C2
E
Intensity / a.u.
2800
3000
3200
3400
3600
3800
Wavenumber / cm-1

Figure S6

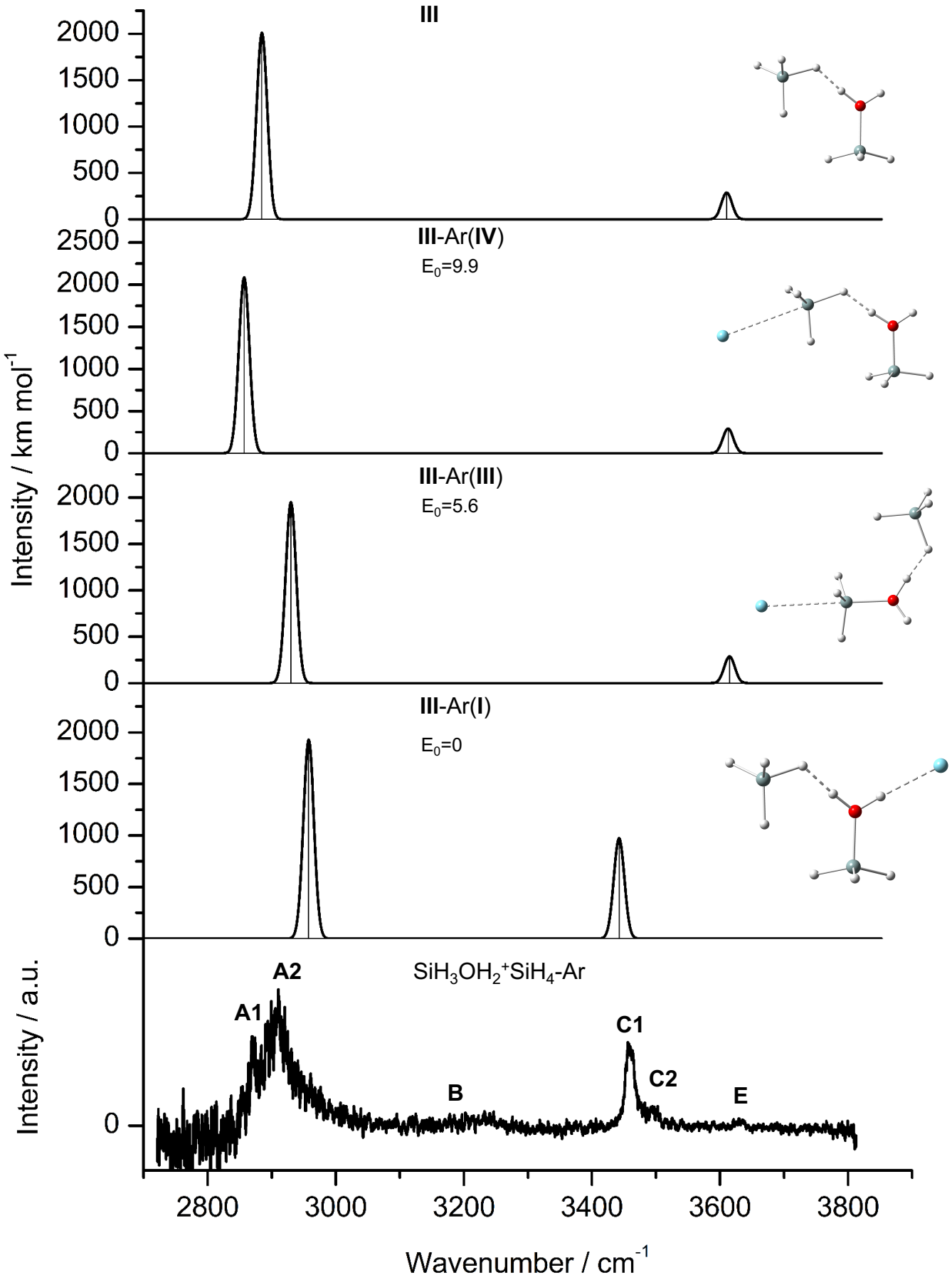

III
III-Ar(IV)
E0=9.9
III-Ar(III)
E0=5.6
III-Ar(I)
E0=0
Intensity / km mol-1
SiH3OH2+SiH4-Ar
A1
A2
B
C1
C2
E
Intensity / a.u.
Wavenumber / cm-1

Figure S7

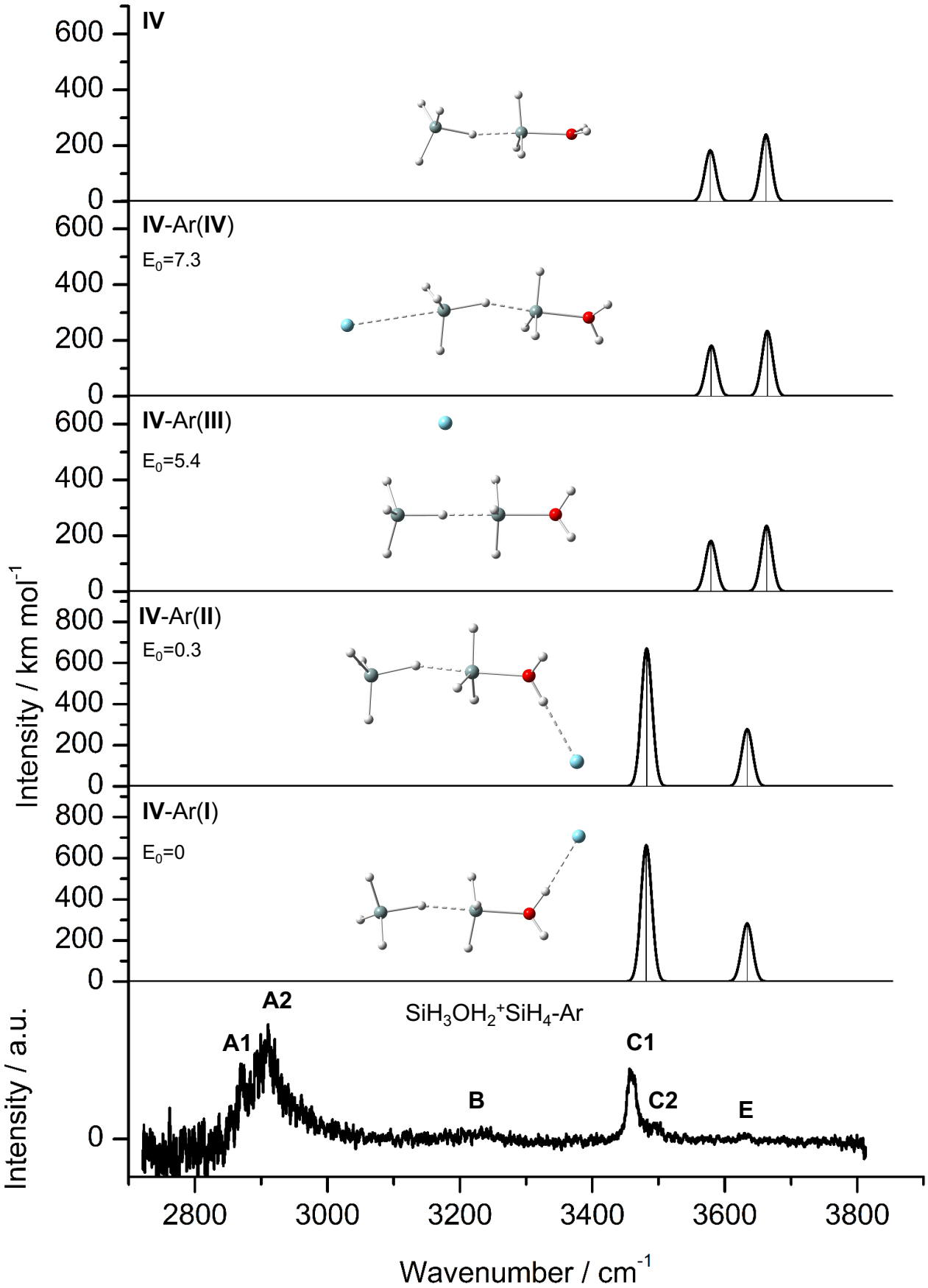
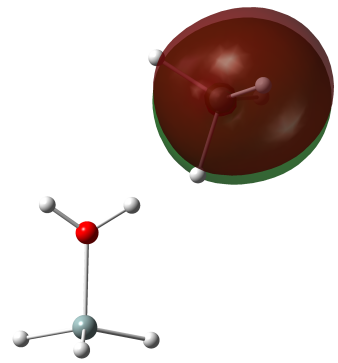
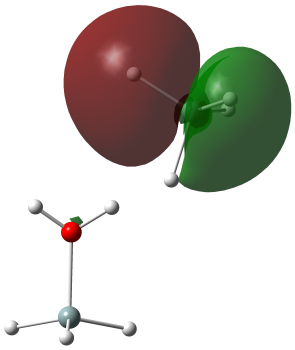

IV
IV-Ar(IV)
E0=7.3
IV-Ar(III)
E0=5.4
IV-Ar(II)
E0=0.3
IV-Ar(I)
E0=0
Intensity / km mol-1
SiH3OH2+SiH4-Ar
A1
A2
B
C1
C2
E
Intensity / a.u.
Wavenumber / cm-1

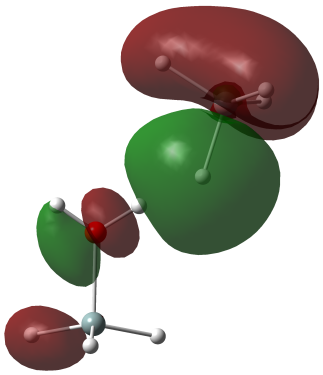
Figure S8



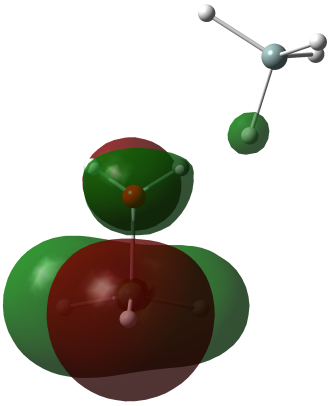
MO 22 (HOMO)



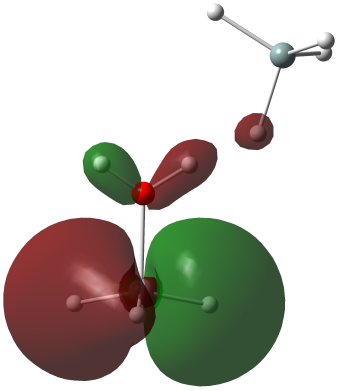
MO 21



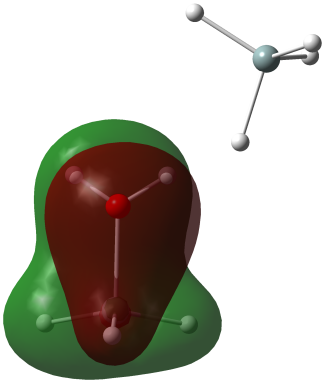
MO 20



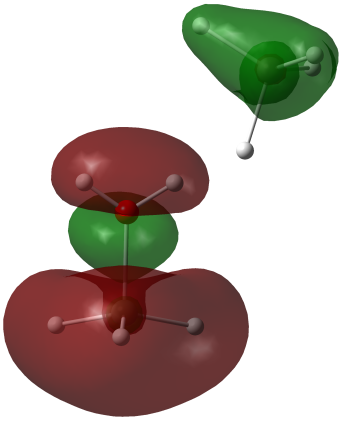
MO 19



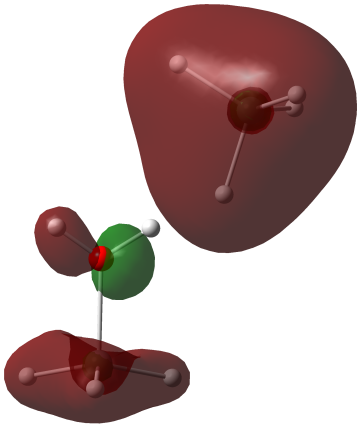
MO 18



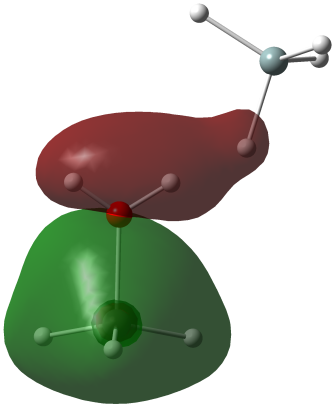
MO 17



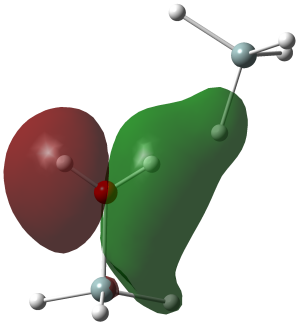
MO 16



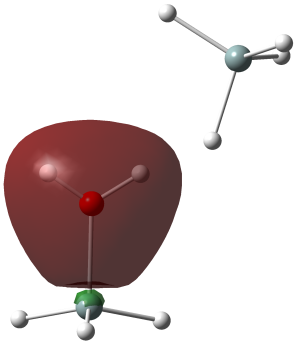
MO 15



MO 14



MO 13



MO 12

Cartesian coordinates (in Å) and energies (in hartree) of all relevant structures

Ar
Electronic energy= -527.560002

SiH_4

1	14	0	0.000000	0.000000	0.000000
2	1	0	0.856604	0.856604	0.856604
3	1	0	-0.856604	-0.856604	0.856604
4	1	0	-0.856604	0.856604	-0.856604
5	1	0	0.856604	-0.856604	-0.856604

Sum of electronic and zero-point Energies= -291.888507
Sum of electronic and thermal Energies= -291.885447
Sum of electronic and thermal Enthalpies= -291.884503
Sum of electronic and thermal Free Energies= -291.907719

$SiH_3OH_2^+$

1	14	0	0.010328	-0.695118	0.000000
2	1	0	0.733137	-0.928005	-1.254189
3	1	0	-1.416518	-1.035795	0.000000
4	1	0	0.733137	-0.928005	1.254189
5	8	0	0.010328	1.156158	0.000000
6	1	0	-0.138482	1.687099	-0.799132
7	1	0	-0.138482	1.687099	0.799132

Sum of electronic and zero-point Energies= -367.472638
Sum of electronic and thermal Energies= -367.467928
Sum of electronic and thermal Enthalpies= -367.466984
Sum of electronic and thermal Free Energies= -367.498222

$SiH_3OH_2^+SiH_4$(I)

1	14	0	-2.376994	-0.276955	0.003662
2	1	0	-3.241372	0.551669	-0.843685
3	1	0	-2.744533	-0.323739	1.424024
4	1	0	-1.905128	-1.540581	-0.572619
5	8	0	-0.828782	0.670833	-0.034528
6	1	0	-0.787322	1.623898	0.135889
7	1	0	0.079229	0.241899	0.063900
8	14	0	2.714461	-0.110385	-0.001686
9	1	0	3.138967	-0.840971	-1.208364
10	1	0	3.400961	-0.517020	1.236364
11	1	0	2.707743	1.355356	-0.197579
12	1	0	1.257163	-0.494414	0.210627

Sum of electronic and zero-point Energies= -659.375932
Sum of electronic and thermal Energies= -659.367093
Sum of electronic and thermal Enthalpies= -659.366149
Sum of electronic and thermal Free Energies= -659.411831

$SiH_3OH_2^+SiH_4$(II)

1	14	0	2.161284	-0.404064	-0.001122
2	1	0	2.651111	-0.430758	1.382425
3	1	0	3.120509	0.077511	-1.000936
4	1	0	1.311746	-1.533289	-0.394824
5	8	0	0.924166	0.923577	-0.021881
6	1	0	1.155071	1.860441	0.071271
7	1	0	-0.049950	0.768268	0.193008
8	14	0	-2.563248	-0.146421	-0.010148
9	1	0	-3.390605	0.866137	-0.688949
10	1	0	-3.204898	-0.781170	1.153948
11	1	0	-1.979052	-1.126705	-0.949387
12	1	0	-1.379753	0.617747	0.566268

Sum of electronic and zero-point Energies= -659.375883
Sum of electronic and thermal Energies= -659.367141

Sum of electronic and thermal Enthalpies= -659.366196
Sum of electronic and thermal Free Energies= -659.411236

$SiH_3OH_2^+SiH_4$(III)

1	14	0	2.003314	-0.455886	0.003373
2	1	0	3.310474	0.171178	-0.222542
3	1	0	1.449109	-1.239761	-1.104939
4	1	0	1.791363	-1.021667	1.340935
5	8	0	0.937456	1.013411	-0.036823
6	1	0	1.258564	1.895729	0.202868
7	1	0	-0.069058	0.976561	-0.028497
8	14	0	-2.419601	-0.151687	0.003592
9	1	0	-3.189533	-0.102693	-1.250506
10	1	0	-3.216666	0.001563	1.232226
11	1	0	-1.520783	-1.328669	0.063150
12	1	0	-1.485097	1.046477	-0.035625

Sum of electronic and zero-point Energies= -659.375778
Sum of electronic and thermal Energies= -659.367076
Sum of electronic and thermal Enthalpies= -659.366132
Sum of electronic and thermal Free Energies= -659.410464

$SiH_3OH_2^+SiH_4$(IV)

1	14	0	0.893595	0.060105	-0.037657
2	1	0	0.921960	1.374991	-0.683796
3	1	0	0.682877	-0.014545	1.411212
4	1	0	0.764833	-1.163855	-0.832522
5	8	0	2.838112	-0.060021	-0.002396
6	1	0	3.401973	0.688495	0.241901
7	1	0	3.307864	-0.889188	0.169974
8	1	0	-2.537258	-1.325553	0.706490
9	14	0	-2.485362	-0.023854	0.016869
10	1	0	-3.050559	-0.041058	-1.343204
11	1	0	-2.922822	1.110549	0.848633
12	1	0	-0.989024	0.232824	-0.208488

Sum of electronic and zero-point Energies= -659.374928
Sum of electronic and thermal Energies= -659.365826
Sum of electronic and thermal Enthalpies= -659.364882
Sum of electronic and thermal Free Energies= -659.410253

$SiH_3OH_2^+SiH_4$(I)-Ar(I)

1	14	0	1.296506	2.239831	0.038317
2	1	0	2.476062	1.968292	-0.790904
3	1	0	1.557480	2.355191	1.478397
4	1	0	0.321741	3.193030	-0.503251
5	8	0	0.372611	0.699321	-0.140892
6	1	0	0.783462	-0.184885	-0.093279
7	1	0	-0.627412	0.646079	-0.069493
8	14	0	-3.160973	-0.304444	0.015900
9	1	0	-3.989646	0.043221	-1.151371
10	1	0	-3.843400	-0.152807	1.313006
11	1	0	-2.500130	-1.619573	-0.126171
12	1	0	-2.034946	0.713922	0.032700
13	18	0	1.721024	-2.202914	0.015470

Sum of electronic and zero-point Energies= -1186.941261
Sum of electronic and thermal Energies= -1186.930066
Sum of electronic and thermal Enthalpies= -1186.929122
Sum of electronic and thermal Free Energies= -1186.985282

$SiH_3OH_2^+SiH_4$(I)-Ar(II)

1	14	0	-2.419642	-0.580650	0.273942
2	1	0	-3.337428	-1.715876	0.128203
3	1	0	-2.795210	0.627539	-0.468538
4	1	0	-1.859898	-0.366038	1.612451
5	8	0	-0.929159	-1.164434	-0.576142
6	1	0	-0.884920	-1.348273	-1.526057
7	1	0	-0.010162	-1.122722	-0.163951
8	14	0	2.612214	-0.884592	0.123416
9	1	0	3.351050	-2.122061	0.427315
10	1	0	3.049952	0.294846	0.889350
11	1	0	2.526434	-0.615352	-1.328429
12	1	0	1.183432	-1.145919	0.569605
13	18	0	0.195223	2.074596	-0.060768

Sum of electronic and zero-point Energies= -1186.939112
Sum of electronic and thermal Energies= -1186.927815
Sum of electronic and thermal Enthalpies= -1186.926871
Sum of electronic and thermal Free Energies= -1186.980642

$SiH_3OH_2^+SiH_4$(I)-Ar(III)

1	14	0	-0.804113	0.520499	0.017463
2	1	0	-1.449263	1.548570	-0.804413
3	1	0	-1.128689	0.550976	1.447578
4	1	0	-0.646790	-0.809641	-0.577431
5	8	0	0.931753	1.074921	-0.052272
6	1	0	1.200518	1.989250	0.122211
7	1	0	1.708382	0.443171	0.049184
8	14	0	4.188237	-0.551473	-0.001284
9	1	0	4.433110	-1.384183	-1.191738
10	1	0	4.751606	-1.090366	1.248567
11	1	0	4.541091	0.867952	-0.220097
12	1	0	2.681625	-0.567057	0.202286
13	18	0	-3.940186	-0.539689	-0.004693

Sum of electronic and zero-point Energies= -1186.938849
Sum of electronic and thermal Energies= -1186.927545
Sum of electronic and thermal Enthalpies= -1186.926601
Sum of electronic and thermal Free Energies= -1186.980966

$SiH_3OH_2^+SiH_4$(I)-Ar(IV)

1	14	0	-4.176413	0.127006	0.019353
2	1	0	-4.970401	-0.860933	0.758078
3	1	0	-4.519324	0.275489	-1.400306
4	1	0	-3.848628	1.369713	0.726279
5	8	0	-2.542777	-0.661910	0.013842
6	1	0	-2.403267	-1.587171	-0.237888
7	1	0	-1.679856	-0.136876	-0.026247
8	14	0	0.901284	0.428562	-0.029257
9	1	0	1.376035	0.986853	1.247648
10	1	0	1.444787	1.081883	-1.231461
11	1	0	1.003806	-1.045515	-0.082147
12	1	0	-0.592776	0.724560	-0.063761
13	18	0	4.465758	-0.182815	0.018763

Sum of electronic and zero-point Energies= -1186.937418
Sum of electronic and thermal Energies= -1186.926106
Sum of electronic and thermal Enthalpies= -1186.925162
Sum of electronic and thermal Free Energies= -1186.981062

$SiH_3OH_2^+SiH_4$(II)-Ar(I)

1	14	0	-0.224580	2.189787	0.022526
2	1	0	-0.529425	2.450325	1.434986
3	1	0	-1.301310	2.513023	-0.919973
4	1	0	1.138949	2.530095	-0.398427
5	8	0	-0.161299	0.390324	-0.115211
6	1	0	-0.963438	-0.165148	-0.069852
7	1	0	0.663055	-0.144064	0.094775
8	14	0	3.217926	-1.002122	0.005018
9	1	0	3.322319	-2.160716	-0.899328
10	1	0	3.995780	-1.129197	1.249710
11	1	0	3.460587	0.280355	-0.689626
12	1	0	1.765356	-0.956627	0.448114
13	18	0	-2.898240	-1.275998	0.015871

Sum of electronic and zero-point Energies= -1186.941137
Sum of electronic and thermal Energies= -1186.930031
Sum of electronic and thermal Enthalpies= -1186.929086
Sum of electronic and thermal Free Energies= -1186.985438

$SiH_3OH_2^+SiH_4$(II)-Ar(II)

1	14	0	2.225094	0.549170	-0.427776
2	1	0	2.719089	-0.751808	0.035780
3	1	0	3.214793	1.632479	-0.423991
4	1	0	1.300417	0.515633	-1.565116
5	8	0	1.081391	1.084141	0.872698
6	1	0	1.358245	1.280841	1.780129
7	1	0	0.077505	1.017953	0.806436
8	14	0	-2.411352	1.009582	-0.176632
9	1	0	-3.080815	2.315659	-0.049258
10	1	0	-3.261262	-0.148707	0.147683
11	1	0	-1.712190	0.855212	-1.470124
12	1	0	-1.317256	1.006981	0.877104
13	18	0	-0.296779	-2.123328	0.074527

Sum of electronic and zero-point Energies= -1186.939032
Sum of electronic and thermal Energies= -1186.927954
Sum of electronic and thermal Enthalpies= -1186.927010
Sum of electronic and thermal Free Energies= -1186.979134

$SiH_3OH_2^+SiH_4$(II)-Ar(III)

1	14	0	0.684723	0.737333	0.018331
2	1	0	1.131264	0.961133	1.397484
3	1	0	1.391366	1.501286	-1.013656
4	1	0	0.298731	-0.636483	-0.317030
5	8	0	-0.961719	1.516441	-0.042529
6	1	0	-1.095629	2.473347	0.031764
7	1	0	-1.811265	1.017461	0.163632
8	14	0	-3.761237	-0.822913	-0.009123
9	1	0	-4.887071	-0.293330	-0.798348
10	1	0	-4.159140	-1.575688	1.192999
11	1	0	-2.780186	-1.552611	-0.840333
12	1	0	-3.021170	0.396867	0.516418
13	18	0	3.649891	-0.734744	-0.006756

Sum of electronic and zero-point Energies= -1186.938842
Sum of electronic and thermal Energies= -1186.927605
Sum of electronic and thermal Enthalpies= -1186.926661
Sum of electronic and thermal Free Energies= -1186.981000

$SiH_3OH_2^+SiH_4$(II)-Ar(IV)

1	14	0	3.576302	-0.809940	0.075459
2	1	0	4.118631	-0.623530	1.426830
3	1	0	4.574157	-0.923929	-0.993777
4	1	0	2.405639	-1.688559	-0.020294
5	8	0	2.801249	0.778431	-0.331260
6	1	0	3.314011	1.577722	-0.525699
7	1	0	1.852102	1.012292	-0.072149
8	14	0	-0.803616	0.833095	0.190367
9	1	0	-1.456042	1.586768	-0.893362
10	1	0	-1.404481	1.021311	1.521230
11	1	0	-0.591318	-0.589251	-0.149775
12	1	0	0.593411	1.428877	0.310254
13	18	0	-4.146316	-0.519629	-0.093041

Sum of electronic and zero-point Energies= -1186.937374
Sum of electronic and thermal Energies= -1186.926154
Sum of electronic and thermal Enthalpies= -1186.925209
Sum of electronic and thermal Free Energies= -1186.980332

$SiH_3OH_2^+SiH_4$(III)-Ar(I)

1	14	0	0.019768	2.082282	0.054734
2	1	0	-1.352364	2.524963	-0.218608
3	1	0	1.035494	2.457147	-0.934435
4	1	0	0.447820	2.178479	1.455637
5	8	0	-0.154507	0.310002	-0.246975
6	1	0	-1.011624	-0.149690	-0.159177
7	1	0	0.612495	-0.335383	-0.231794
8	14	0	3.113765	-1.054825	0.035839
9	1	0	3.843400	-1.420299	-1.189930
10	1	0	3.462992	-1.848559	1.226198
11	1	0	3.172467	0.402202	0.304537
12	1	0	1.649688	-1.339339	-0.244216
13	18	0	-3.027432	-1.074107	0.038865

Sum of electronic and zero-point Energies= -1186.940904
Sum of electronic and thermal Energies= -1186.930027
Sum of electronic and thermal Enthalpies= -1186.929083
Sum of electronic and thermal Free Energies= -1186.981919

$SiH_3OH_2^+SiH_4$(III)-Ar(III)

1	14	0	-0.582102	0.773569	-0.004367
2	1	0	-1.473257	1.929779	0.134803
3	1	0	-0.454461	-0.111076	1.156553
4	1	0	-0.584073	0.111078	-1.312763
5	8	0	1.025903	1.632514	0.039851
6	1	0	1.124350	2.562957	-0.211169
7	1	0	1.911501	1.158639	0.033067
8	14	0	3.500971	-0.915622	-0.003705
9	1	0	4.221077	-1.227259	1.242306
10	1	0	4.265233	-1.152679	-1.240066
11	1	0	2.161881	-1.550371	-0.047907
12	1	0	3.221584	0.576378	0.035324
13	18	0	-3.525846	-0.742712	0.000225

Sum of electronic and zero-point Energies= -1186.938786
Sum of electronic and thermal Energies= -1186.927588
Sum of electronic and thermal Enthalpies= -1186.926643
Sum of electronic and thermal Free Energies= -1186.980090

$SiH_3OH_2^+SiH_4$(III)-Ar(IV)

1	14	0	3.159448	-0.992063	-0.005322
2	1	0	4.618638	-0.972471	-0.159576
3	1	0	2.383120	-1.437791	-1.166588
4	1	0	2.663332	-1.453878	1.296435
5	8	0	2.820072	0.790053	-0.007289
6	1	0	3.485862	1.446621	0.246392
7	1	0	1.892888	1.187737	-0.007568
8	14	0	-0.696375	1.120269	-0.011858
9	1	0	-1.362427	1.503458	-1.266980
10	1	0	-1.374884	1.556552	1.219186
11	1	0	-0.344825	-0.318903	0.021442
12	1	0	0.643962	1.840578	-0.019788
13	18	0	-3.869403	-0.637067	0.007549

Sum of electronic and zero-point Energies= -1186.937149
Sum of electronic and thermal Energies= -1186.926080
Sum of electronic and thermal Enthalpies= -1186.925136
Sum of electronic and thermal Free Energies= -1186.978627

$SiH_3OH_2^+SiH_4$(IV)-Ar(I)

1	14	0	0.605800	0.542147	-0.035207
2	1	0	0.235701	-0.509147	-0.986330
3	1	0	0.695873	0.204406	1.388635
4	1	0	1.241311	1.776947	-0.501880
5	8	0	-1.157481	1.304666	-0.018806
6	1	0	-1.958026	0.750046	0.008618
7	1	0	-1.346763	2.174454	0.361769
8	1	0	4.305686	0.456796	0.996466
9	14	0	3.853284	-0.548307	0.017131
10	1	0	4.446228	-0.381152	-1.321346
11	1	0	3.889042	-1.930487	0.526766
12	1	0	2.365849	-0.255165	-0.185239
13	18	0	-3.724568	-0.702099	0.006448

Sum of electronic and zero-point Energies= -1186.939228
Sum of electronic and thermal Energies= -1186.927915
Sum of electronic and thermal Enthalpies= -1186.926970
Sum of electronic and thermal Free Energies= -1186.981643

$SiH_3OH_2^+SiH_4$(IV)-Ar(II)

1	14	0	-0.650853	0.715506	-0.023311
2	1	0	-1.177762	2.025910	-0.413568
3	1	0	-0.731653	0.314862	1.384724
4	1	0	-0.409208	-0.319737	-1.031194
5	8	0	1.175703	1.311996	-0.027423
6	1	0	1.446259	2.159062	0.355316
7	1	0	1.924725	0.689104	-0.012595
8	1	0	-3.296802	-1.999429	0.371232
9	14	0	-3.780244	-0.653415	0.012105
10	1	0	-4.424491	-0.587216	-1.311310
11	1	0	-4.537139	0.008846	1.089075
12	1	0	-2.512978	0.189630	-0.140045
13	18	0	3.686044	-0.769237	0.004702

Sum of electronic and zero-point Energies= -1186.939126
Sum of electronic and thermal Energies= -1186.927867
Sum of electronic and thermal Enthalpies= -1186.926923
Sum of electronic and thermal Free Energies= -1186.981004

$SiH_3OH_2^+SiH_4$(IV)-Ar(III)

1	14	0	1.449089	-0.419081	0.008468
2	1	0	1.062074	0.244229	-1.238444
3	1	0	1.049227	0.178407	1.285376
4	1	0	1.950053	-1.796187	-0.002797
5	8	0	3.250313	0.325735	-0.049819
6	1	0	3.420753	1.257508	-0.251142
7	1	0	3.975450	-0.026787	0.486561
8	1	0	-2.295256	-1.280776	1.235841
9	14	0	-1.693162	-1.789626	-0.008342
10	1	0	-1.464602	-3.245217	-0.015617
11	1	0	-2.318503	-1.271044	-1.236928
12	1	0	-0.283520	-1.186432	-0.020186
13	18	0	-1.537842	1.969018	0.008563

Sum of electronic and zero-point Energies= -1186.937174
Sum of electronic and thermal Energies= -1186.925703
Sum of electronic and thermal Enthalpies= -1186.924759
Sum of electronic and thermal Free Energies= -1186.978164

$SiH_3OH_2^+SiH_4$(IV)-Ar(IV)

1	14	0	2.604398	0.063687	-0.000823
2	1	0	2.774786	1.491616	-0.283055
3	1	0	2.369977	-0.367325	1.380773
4	1	0	2.387772	-0.896392	-1.086086
5	8	0	4.536201	-0.241086	-0.009346
6	1	0	5.158967	0.370108	0.410479
7	1	0	4.925213	-1.127339	-0.039428
8	1	0	-0.911218	-1.206783	0.181433
9	14	0	-0.753570	0.240997	-0.041616
10	1	0	-1.212907	0.703673	-1.361457
11	1	0	-1.183331	1.076765	1.091677
12	1	0	0.769287	0.452157	-0.093441
13	18	0	-4.293319	-0.157409	0.026000

Sum of electronic and zero-point Energies= -1186.936449
Sum of electronic and thermal Energies= -1186.924967
Sum of electronic and thermal Enthalpies= -1186.924023
Sum of electronic and thermal Free Energies= -1186.978224