

The following table summarizes values of Hamaker constants for different systems measured at Beaudoin's group:

System \ Medium	Air ( $10^{-20}$ J)	Water ( $10^{-20}$ J)	IPA ( $10^{-20}$ J)
Si <sub>3</sub> N <sub>4</sub> -Cu	22.5	5	--
Si <sub>3</sub> N <sub>4</sub> -Au	32.5	14	--
Si <sub>3</sub> N <sub>4</sub> -CrO <sub>x</sub> N <sub>y</sub>	30	6.5	0.8
Si <sub>3</sub> N <sub>4</sub> -Ru	11	2.75	0.6
Si <sub>3</sub> N <sub>4</sub> -TaN	10	5	1-1.5
Si <sub>3</sub> N <sub>4</sub> -SiO <sub>2</sub>	27.5	6	--
Si <sub>3</sub> N <sub>4</sub> -Quartz	20	9.5	0.4
Si <sub>3</sub> N <sub>4</sub> -MoSi	30	--	0.5
SiO <sub>2</sub> -CrO <sub>x</sub> N <sub>y</sub>	50	--	1-1.5
SiO <sub>2</sub> -Ru	10-27.5	--	1
SiO <sub>2</sub> -TaN	20	--	1.5-2
SiO <sub>2</sub> -Quartz	35	--	0.5
SiO <sub>2</sub> -MoSi	20	--	1
Ag-Ag	38.2	--	--
Cu-Cu	27.3	--	--
SiO <sub>2</sub> -SiO <sub>2</sub>	7.2	--	--
Ag-Cu	32.6	--	--
Ag-SiO <sub>2</sub>	12.92	--	--
Ag-TiN	16.4	--	--
Ag-PTFE	13.7	--	--
Ag-Parylene-n	11.8	--	--
Ag-Cross linked Parylene-n	12.1	--	--
Cu-SiO <sub>2</sub>	14.1	--	--
Cu-TiN	12.3	--	--
Cu-PTFE	13.1	--	--
Cu-Parylene-n	9.8	--	--
Cu-Cross linked Parylene-n	11	--	--
SiO <sub>2</sub> -TiN	8.8	--	--
SiO <sub>2</sub> -PTFE	7.6	--	--
SiO <sub>2</sub> -Parylene-n	6.8	--	--
SiO <sub>2</sub> -Cross linked Parylene-n	6.9	--	--

† Hamaker constants for most of the pharmaceutical particles are on the order of  $10^{-19}$ - $10^{-20}$ J

(e.g.  $7.2 \times 10^{-20}$ J for lactose particle\*). Hamaker constant for pharma-particles can also be

measured in the same way using AFM as for other systems presented above.

\* Literature value