Diffusion of organic molecules on metals

System	E_m [meV]	E_d [meV]	D_o [cm^2/s]	θ	T [K]	Method	Ref.	E_b [eV]	Ref.
C_3H_8/Ru(0001)		130 ± 10	0.11	0.2	95-115	LITD	[1]	0.48	[1]
n-C_4H_{10}/Ru(0001)		150 ± 10	0.11	0.2	110-140	LITD	[1]	0.52	[1]
n-C_5H_{12}/Ru(0001)		200 ± 10	0.30	0.2	130-160	LITD	[1, 2]	0.60	[1]
n-C_6H_{14}/Ru(0001)		210 ± 10	0.16	0.2	140-190	LITD	[1]	0.65	[1]
isopentane/Ru(0001)		180 ± 10	$5.5 \times 10^{-2\pm0.1}$	0.1	130-160	LITD	[2]	0.59	[2]
cyclo-pentane/Ru(0001)		140 ± 10	$6.0 \times 10^{-4\pm0.1}$	0.1	130-160	LITD	[2]	0.52	[2]
neopentane/Ru(0001)		130 ± 10	$4.0 \times 10^{-2\pm0.1}$	0.1	130-160	LITD	[2]	0.46	[2]
perfluoro-n-pentane/Ru(0001)		130 ± 10	$5.9 \times 10^{-2\pm0.2}$	< 0.1	95-120	LITD	[3]	0.56	[3]
tetramethylsilane/Ru(0001)		140 ± 5	$5.9 \times 10^{-2\pm0.1}$	0.4	100-130	LITD	[4]	0.53	[4]
C_2H_2/Pd(110)	~ 570		$\{8 \times 10^{-4}\}$	monomer	250-260	STM	[5]	–	
C_2H_2/Pd(111)	~ 180		$\{2 \times 10^{-3}\}$	monomer	65-70	STM	[6]	0.36	[6]
C_6H_6/Pd(110)	~ 570 ⊥		$\{8 \times 10^{-4}\}$	monomer	210-230	STM	[7]	1.1±0.2	[8]
PVBA/Pd(110)	830±30 ‖		$7.6 \times 10^{-6\pm0.4}$	monomer	330-370	STM	[9]	–	
C_{60}/Pd(110)	~ 1500		–	monomer	440-480	STM	[10, 11]	–	
C_2H_2/Cu(001)	530±10		$1.6 \times 10^{-2.4\pm0.2}$	monomer	180-210	STM	[12]	–	
CH_4/Pt(111)		~ 23	$\{3.3 \times 10^{-4}\}$	low	45	LITD	[13]	0.16	[13]

θ is given in terms of the respective saturation coverage; estimates from original authors in {};
‖ is the [1-10] and ⊥ the [001] direction on a fcc(110) substrate.

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