Hydrogen diffusion on metals

System	E_m [meV]	E_d [meV]	D_o [cm^2/s]	θ	T [K]	D_T [cm^2/s]	T_t [K]	Method	Ref.	E_b [eV]	Ref.
^{1}H/W(110)		177 ± 4	1.7×10^{-7}	0.1	150 - 180	2×10^{-13}	160	FEM	[1]	3.0	[2]
^{2}H/W(110)		170 ± 9	3.5×10^{-5}	0.1	100 - 130	9×10^{-14}	70	FEM	[1]		
^{3}H/W(110)		208 ± 9	3.3×10^{-3}	0.1	110 - 120	5×10^{-14}	70	FEM	[1]		
^{1}H/Ru(0001)		170 ± 20	6.3×10^{-4}	0.3	260 - 300	–		LITD	[3, 4]	2.9	[5]
^{2}H/Ru(0001)		180 ± 20	4.6×10^{-4}	0.3	260 - 300	–		LITD	[3]		
^{1}H/Rh(111)		160	1×10^{-3}	0.33	150 - 250	–		LITD	[6]	2.7	[7]
		140 ± 20	6.5×10^{-3}	0.3	160 - 210	–		LITD	[8]		
^{2}H/Rh(111)		190 ± 20	8×10^{-4}	0.33	180 - 280	–		LITD	[6]		
		140 ± 20	5.7×10^{-4}	0.4	180 - 220	–		LITD	[8]		
^{1}H/Ni(001)		170 ± 20	4.5×10^{-3}	0.1	220 - 280	–		LITD	[9]	2.7	[10]
		150	$2.5 \pm 1 \times 10^{-3}$	1	210 - 260	–		LITD	[11]		
		140	1×10^{-5}	0.25	100 - 130	1×10^{-12}	100	FEM	[12]		
		150	1×10^{-6}	0.7	160 - 200	–	160 ^{a}	LOD	[13, 14]		
^{2}H/Ni(001)		190 ± 20	$8.5 \pm 2 \times 10^{-3}$	1	210 - 260	–		LITD	[11, 15]		
		160	2×10^{-5}	0.15	100 - 130	1×10^{-12}	100	FEM	[12]		
		220	5×10^{-5}	0.7	170 - 200	–	170 ^{a}	LOD	[13, 14]		
^{1}H/Ni(111)		130 ± 10	$4 \times 10^{-4 \pm 1.5}$	0.08	100 - 120	2×10^{-10}	100	FEM	[12]	2.7	[10]
		196	2.8×10^{-3}	0.3	110 - 220	–	110 ^{a}	LOD	[16]		
^{2}H/Ni(111)		140 ± 10	$5 \times 10^{-4 \pm 1.5}$	0.05	110 - 120	1×10^{-10}	100	FEM	[12]		
		218	3.4×10^{-3}	0.3	80 - 150	6×10^{-12}	≈ 100 ^{a}	LOD	[16]		
^{1}H/Pt(111)		300 ± 40	1.0	0.24	210 - 250	–		LITD	[17]	2.5	[18]
	68 ± 5		$1.1 \pm 0.5 \times 10^{-3}$	0.1	140 - 250	–		QHAS	[19]		
^{2}H/Pt(111)		300 ± 40	0.5	0.24	190 - 260	–		LITD	[17]		
	76 ± 7		$1.4 \pm 0.6 \times 10^{-3}$	0.1	140 - 250	–		QHAS	[19]		

^{a} assuming additive classical hopping and activated tunneling diffusion fitted by an Arrhenius law with activation energies and prefactors for

Ni(001) : 50 meV (H, D) and 1.5×10^{-9} (H), 9×10^{-10} $cm^2 s^{-1}$(D) [13],

Ni(111) : 105 meV (H, D) and 2.4×10^{-7} (H), 1.6×10^{-8} $cm^2 s^{-1}$(D) [16].

θ is given in terms of the saturation coverage; D_T : tunneling diffusion constant;
T_t: transition temperature between high- and low-temperature regime.

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