SUPPLEMENTARY DATA

Study by electrical conductivity measurements of semiconductive and redox properties of Nb-doped NiO catalysts in correlation with the oxidative dehydrogenation of ethane

Ionel Popescu,[a] Zinovia Skoufa,[b] Eleni Heracleous,[c,d] Angeliki Lemonidou [b,c] and Ioan-Cezar Marcu [a,e,*]

[a] Research Center for Catalysts and Catalytic Processes, Faculty of Chemistry, University of Bucharest, 4-12, Blv. Regina Elisabeta, 030018 Bucharest, Romania

[b] Department of Chemical Engineering, Aristotle University of Thessaloniki, University Campus, 54124 Thessaloniki, Greece

[c] Chemical Process Engineering Research Institute (CPERI), Centre for Research and Technology Hellas (CERTH), 6th km Charilaou – Thermi Road, P.O. Box 361, 57001 Thessaloniki, Greece

[d] School of Science and Technology, International Hellenic University, 14th km Thessaloniki – Moudania, 57001 Thermi, Greece

[e] Laboratory of Chemical Technology and Catalysis, Department of Organic Chemistry, Biochemistry and Catalysis, Faculty of Chemistry, University of Bucharest, 4-12, Blv. Regina Elisabeta, 030018 Bucharest, Romania

Table S1. Catalytic reaction data of the Nb-doped NiO catalysts in the oxidative dehydrogenation of ethane (reaction conditions: W/F = 0.24 g s cm^{-3}, C_2H_6/O_2 = 2/1) [1].

Catalyst	T = 350 °C			T = 400 °C		
	C_2H_6 conversion (%)	Reaction rate (μmol m^{-2} s^{-1})	C_2H_4 selectivity (%)	C_2H_6 conversion (%)	Reaction rate (μmol m^{-2} s^{-1})	C_2H_4 selectivity (%)
NiO	6.3	0.11	21.0	18.4	0.35	29.0
Nb(1)NiO	11.0	0.11	52.2	26.5	0.28	58.0
Nb(5)NiO	12.7	0.08	73.0	30.2	0.19	72.3
Nb(10)NiO	10.2	0.05	82.8	25.6	0.11	80.0
Nb(15)NiO	14.5	0.03	87.8	36.0	0.08	82.6
Nb(20)NiO	13.7	0.04	83.0	33.0	0.09	78.3

* Corresponding author. Tel.: +40 213051464; fax: +40 213159249. E-mail addresses: ioancezar.marcu@chimie.unibuc.ro ; ioancezar_marcu@yahoo.com