CURRICULUM VITAE

Name: **STANISLAW DZWIGAJ**
Nationality: Polish
Home address: 2 bld. Bessières, Esc. 13
75017 Paris, France
Professional address**:** Sorbonne Universités-CNRS, UMR 7197
Laboratoire de Réactivité de Surface, F-75005, 4 place Jussieu, Paris
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EDUCATION

19/02/2014 **Professor, Ph.D., D.Sc.**
2008 - till now **CNRS Senior Scientist**
2004 - 2007 **Researcher**
Laboratoire de Réactivité de Surface
UPMC, CNRS, UMR 7197, Paris
Speciality fields: Solid state chemistry, Heterogeneous catalysis, Porous materials, Environmental Catalysis
2004 **Habilitation**
1990 – 2004 **Associated Research Fellow**
Laboratoire de Réactivité de Surface
Université P. et M. Curie, UMR 7609, Paris
Speciality fields: Solid state chemistry, Heterogeneous catalysis, New materials, Environmental Catalysis
1987 - 1988 **Post Doctorat**
Laboratoire de Réactivité de Surface
Université P. et M. Curie, UMR 7609,Paris
Speciality fields: Inorganic chemistry, Zeolites
1983 - 1986 **Assistant Professor**
Institute of Catalysis and Surface Chemistry,
Krakow, Poland
Speciality fields : Heterogeneous catalysis, Zeolites
1978 – 1982 **Doctoral Thesis in Science**
Institute of Catalysis and Surface Chemistry,
Krakow, Poland
Speciality fields : Heterogeneous catalysis, Zeolites
1972 – 1977 **Master in Science**
Institute of Chemistry Technical University
Krakow, Poland
Speciality field: Chemical Ingineering

COMPETENCE :

Field of research : Heterogeneous catalysis, environmental catalysis, surface reactivity, inorganic chemistry, chemical spectroscopy, nanomaterials, nanoscience, porous materials, zeolites, toxicology
Techniques : X-ray Diffraction, Transmission Electron Microscopy, Fourier Transform IR spectroscopy, Nuclear Magnetic Resonance, Raman, Electron Paramagnetic Resonance, X-ray Photoelectron Spectroscopy, UV-Visible, Mössbauer spectroscopy, X-ray absorption spectroscopy, Photoluminescence, DFT calculation
Languages: English, French, Polish, Russian
Laczna liczba cytowan wszystkich dotychczasowych publikacji (Web of Science) : **3453**
Indeks H from (Web of Science): **34**

List of the 10 the most important publications 2009-2020

1. Effects of dealumination on the performance of Ni-containing BEA catalysts in bioethanol steam reforming, W.GAC, M. GRELUK, G. SLOWIK, Y. MILLOT, L. VALENTIN, S. DZWIGAJ *Appl. Catal. B* **2018**, *237*, 94-109, **Impact Factor (IF) 14.2, DOI:** 10.1016/j.apcatb.2018.05.040\
2. Experimental evidence of mechanism of SCR NO with NH_3 over Fe-containing BEA zeolites prepared by different methods, P. BORON, M. RUTKOWSKA, B. GIL, B. MARSZALEK, L. CHMIELARZ, S. DZWIGAJ, *ChemSusChem* **2018**,*11*, 1-15, **Impact Factor (IF) = 7.6, DOI:** 10.1002/cssc.201801883
3. Influence of the nature and environment of manganese in Mn-BEA zeolites on NO conversion in selective catalytic reduction with ammonia, R.BARAN, L; VALENTIN, J.M. KRAFFT, T GRZYBEK, P. GLATZEL, S. DZWIGAJ, *Phys. Chem. Chem. Phys.* 2017, *19*, 13553-13561 (**1st best article, Hot PCCP 2017 Article**), **Impact Factor (IF) = 4.2**, **DOI:** 10.1039/c7cp02096a
4. Cobalt-containing BEA zeolite for catalytic combustion of toluene, A. ROKOCINSKA, M. DROZDEK, B. DUDEK, B. GIL, P. MICHORCZYK, D. BROURI, S. DZWIGAJ, P. KUSTROWSKI *Appl. Catal. B* **2017**, *212*, 59-67, **Impact Factor (IF) = 14.2, DOI:** 10.1016/j.apcatb.2017.04.067
5. Ethanol conversion into 1,3-Butadiene by Lebedev method over MTaSiBEA zeolites (M = Ag, Cu, Zn), P. KYRIIENKO, O. LARINA, S. SOLOVIEV, S. ORLYK, C. CALERS, S. DZWIGAJ *ACS Sustainable Chemistry & Engineering*, **2017**, *5*, 2075-2083 (**2nd best article**), **Impact Factor (IF) = 6.4**, **DOI:** 10.1021/acssuschemeng.6b01728
6. Influence of the postsynthesis preparation procedure on catalytic behaviour of Ag- loaded BEA zeolites in the hydrodechlorination of 1,2-dichloroethane into value added products A.SREBOWATA, R. BARAN, G. SLOWIK, D. LISOVYTSKIY, S. DZWIGAJ, *Appl. Catal. B* **2016**, *199*, 514-522, **Impact Factor (IF) = 14.2**, **DOI:** 10.1016/j.apcatb.2016.06.060
7. Experimental evidence of NO SCR mechanism in the presence of the BEA zeolite with framework and extra-framework cobalt species, P. BORON, L. CHMIELARZ, B. GIL, B. MARSZALEK, S. DZWIGAJ, *Appl. Catal. B* **2016**, *198*, 457-470 , **Impact Factor (IF) = 14.2**, **DOI:** 10.1016/j.apcatb.2016.06.012
8. Partial oxidation of methane on Ni_xAlBEA and Ni_xSiBEA zeolite catalysts: Remarkable effect of preparation procedure and Ni content, A. CHALUPKA, W. K. JOZWIAK, J. RYNKOWSKI, W. MANIUKIEWICZ, S. CASALE, S. DZWIGAJ, *Appl. Catal. B*, **2014**, *146*, 227–236, **Impact Factor (IF) = 14.2**, **DOI:** 10.1016/j.apcatb.2013.05.007

9 BEA zeolite modified with iron as effective catalyst for N2O decomposition and selective reduction of NO with ammonia, P. BORON, L. CHMIELARZ, J. GURGUL, K. LATKA, T. SHISHIDO, J.-M. KRAFFT, S. DZWIGAJ, *Appl. Catal. B*, **2013**, *138-139*, 434-445, **Impact Factor (IF) = 14.2, DOI:** 10.1016/j.apcatb.2013.03.022

10 Applications of photoluminescence spectroscopy to the investigation of oxide-containing catalysts in the working state, M. ANPO, S. DZWIGAJ, M. CHE, *Adv. Catal.* 2009, *52*, 1-42 (**3rd best article**) (**Monograpie**), **Impact Factor (IF) = 8.0, DOI:** 10.1016/S0360-0564(08)00001-1

Active part in many national and international conferences:
- 6 lectures at international conferences
- 17 invited lectures
- 83 Oral presentations
- 84 Poster presentations

Invited lectures as visiting professor:
- Osaka Prefecture University " Functionalization of zeolites by transition metal for application in environmental catalysis" Osaka, Japan, June 2014
- Institute of Physical Chemistry, PAS, "Functionalization of zeolites by transition metal for application in environmental catalysis" Warszawa, Poland, February 2014
- Technical University of Lodz, "The design of the V-single site catalysts for their application in catalytic and photocatalytic processes", Lodz, Poland, November 2013

- Humboldt University "Incorporation and identification of vanadium species in zeolite VSiBEA" Berlin, Germany, January 2007
- Exxon Mobil Corporation, "Recent advances in the incorporation and identification of vanadium species in microporous materials" Connecticut, USA, November 2004
- Yale University "Recent advances in the incorporation and identification of vanadium species in silica-based materials" New Haven, USA, November 2004

Member of international scientific committees:
- International Conference on Applied Catalysis and Chemical Engineering, April, 2019, Dubai, UAE
- 3rd Edition of International Congress on Catalysis and Chemical Science, March, 2019, Singapore
- 2nd Edition of Global Conference on Catalysis, Chemical Engineering & Technology, September, 2018, Rome, Italy
- 1st Global Conference on Catalysis and Reaction Engineering, October 2017, Las Vegas, USA
- 3rd International Symposium on Air & Water Pollution Abatement Catalysis, September 2014, Cracow, Poland
- International Symposium on Nitrogen Oxides Emission Abatement NOEA, September 2011, Zakopane, Poland

Active participation in the organization of international conferences:
- International Conference on Applied Catalysis and Chemical Engineering, April, 2019, Dubai, UAE
- 3rd Edition of International Congress on Catalysis and Chemical Science, March, 2019, Singapore
- 2nd Edition of Global Conference on Catalysis, Chemical Engineering & Technology, September, 2018, Rome, Italy
- 1st Global Conference on Catalysis and Reaction Engineering, October 2017, Las Vegas, USA
- 23rd Annual Conference "Chemistry, Sciences, Culture and Society in the making of Europe ", Paris, 2011
- 4th Feza Conference, Paris, 2008

Membership in the national and international scientific societies:
- American Chemical Society
- International Zeolite Association
- Groupe Français des Zéolithes
- Polish Catalysis Club

Awards:
- Awarded with 2017 L.V. Pisarzhevsky Prize of the National Academy of Sciences of Ukraine for the cycle of works “Advancement of physico-chemical fundamentals for the development of new catalysts for chemical processing of renewable raw materials and environmental protection”
- Nomination for ENI AWARD 2015 for the research entitled “Functionalization of porous zeolite materials for application in environmental catalysis: removal of chlorinated volatile organic compounds and NOx”
- Nomination for ENI AWARD 2016 for the research entitled “Functionalization of porous zeolite materials for application in environmental catalysis: removal of chlorinated volatile organic compounds and NOx”
- Nomination for ENI AWARD 2018 for the research “Functionalization of porous zeolite materials for application in environmental catalysis for environment protection”

Honours:

Invited speaker as Keynote Lecture at the International Conference on Applied Catalysis and Chemical Engineering, April, 2019, Dubai, UAE

Keynote Lecture and Chair at the 3rd Edition of International Congress on Catalysis and Chemical Science, March, 2019, Singapore

Keynote Lecture and Chair at the 2nd Edition of Global Conference on Catalysis, Chemical Engineering & Technology, September, 2018, Rome, Italy

Invited speaker as Keynote Lecture and Chair at the 1st Global Conference on Catalysis and Reaction Engineering, October 2017, Las Vegas, USA

Reviewer activity for ACS Catalysis, ACS Sustainable Chemistry & Engineering, Physical Chemistry Chemical Physics, Catalysis Science and Technology, International Journal of Hydrogen Energy, Journal of Industrial & Engineering Chemistry, Journal of Catalysis, Journal of Molecular Catalysis, Journal of Physical Chemistry B and C, Microporous and Mesoporous Materials, Catalysis Today, Applied Catalysis B: Environmental

Desciption of ongoing works

My research activity for the last twenty years has mainly been in the field of heterogeneous catalysis. The development of a two-step post-synthesis method for the incorporation of transition metals in the BEA zeolite network was the starting point for a research theme entitled "Functionalization of porous materials by transition elements for applications in catalysis " that I develop in order to prepare acid-base and redox catalysts with transition metal ions in the lattice position. This method consists, in the first step, of dealuminating a zeolite by treatment with nitric acid and of creating nests of silanol groups and, in the second step, the transition element is introduced into the vacant sites by impregnation of a solution of the metal precursor.

The two-step post-synthesis method has made it possible to obtain porous materials active in catalysis [1-3, 4-5, 7, 9-10, 12-13, 15-29, 31-33, 35-38, 40-42, 44-47]. To prepare these materials, particular conditions of preparation (pH level, concentration of the aqueous solution of the precursor, temperature) were chosen taking into account the chemical speciation of the transition elements i) in an aqueous medium (presence of mononuclear species and / or polynuclear, case of catalysts VSiBEA, CoSiBEA, FeSiBEA, CuSiBEA, NiSiBEA, AgSiBEA and MnSiBEA) or ii) in organic medium (presence of mononuclear species, case of catalysts NbSiBEA, TaSiBEA, MTaSiBEA (M = Ag, Cu, Zn) active in certain important reactions from the industrial point of view).

To understand the properties of these porous inorganic materials with transition elements that modify their acid-base and redox catalytic activity, we used the different physicochemical techniques, often in situ, in collaboration both inside of the Surface Reactivity Laboratory and outside (in France and abroad: Japan, Poland, Italy, Ukraine, USA).

The study of the functionalization of zeolites by transition elements shows that the "transition element - support" interaction determines the location, dispersion and catalytic reactivity of the supported species. The introduction of transition elements into zeolites allows to obtain, depending on the nature of the element and the support, the catalysts for the selective oxidation of methanol [24] (External Academic Collaboration with Prof. M. Ziolek and Dr. M. Trejda, A. Mickiewicz University, Poland) (V-BEA) or dehydrogenative oxidation of propane [3,43] (V-BEA and V-Hydroxyapatites) (External Academic Collaboration with Poland, Thesis Karolina Chalupka, co-directed, Lodz University of Technology) and LRS internal collaboration with Drs Cyril Thomas, Frederic Averseng, Yannick Millot, Guylene Costentin), catalysts for selective catalytic reduction of NO with NH_3 [5,7,12,18,22,23,27-29,31,33,47] (Fe-BEA, Co-BEA, Cu-BEA) (Academic External Collaboration with Prof. L. Chmielarz, Jagiellonian University (Poland) and Prof. T. Grzybek and Dr. R. Baran AGH University of Science and Technology, Poland), catalysts for the selective reduction of NO with alcohols (Ag-BEA) [23,27] or transformation of bioethanol into 1,3-butadiene [32,37,41] (External collaboration with prof. S. Orlyk, Drs. P. Kyriienko and N. Popovych, Institute of Physical Chemistry, Ukraine) or industrially important reactions such as Fischer-Tropsch synthesis (Co-SiBEA, Fe-SiBEA or Cu-SiBEA) [19, 20] and the partial oxidation of methane (Ni-BEA) [17] (Academic External Collaboration with Prof. J. Rynkowski and Dr. K. Chalupka, Lodz University of Technology, Poland), the production of synthesis gas by reforming the bioethanol and the production of ethylene by dehydration of bioethanol (Ni-BEA) [38,44,45] (Academic external collaboration with Prof. I. Rossetti, Università di Milano, Italy), or active catalysts in elimination of chlorine from volatile organic compounds (Ni-BEA, Ag-BEA, Cu-BEA, AgNi-BEA) [2,9,10,13,15,16,21,25,36,40,42] (Academic external collaboration with Dr. A Srebowata, Institute of Physical Chemistry, Poland) and toluene [46] (External Academic Collaboration with Prof. P. Kustrowski, Jagiellonian University (Poland).

We identified in zeolites mono-metallic and bi-metallic different tetrahedral and octahedral species transition elements by using different physicochemical techniques [1,4,8,11,14,25,30,34,47]. We have associated the experimental results obtained on the V-BEA zeolite with the theoretical results which lead to an accurate determination of the V and Mo environments in the zeolite lattice and to a proposed mechanism of selective oxidation of methanol into formaldehyde [24]. We have obtained active catalysts in selective catalytic reduction of NO [5,7,12,18,22,23,27-29,31,33,47], Fischer-Tropsch synthesis 19,20] and removal of chlorine from volatile organic compounds [2,9,10,13,15,16,21,25,36,40,42].

The catalytic reactivity of these inorganic materials and their physicochemical properties are related to the nature, degree of oxidation and location of the transition elements in the support structure [2,3,5,9,18,28,33, 42,47].

The highlights of my research :

1) We have incorporated the silver, manganese and molybdenum by two-step post-synthesis method into the zeolite lattice using the different precursors of Ag, Mn and Mo [1,30,34,47].
2) We have adapted the two-step post-synthesis method to incorporate Nb and Ta ions in the lattice position in the zeolite network in organic medium [32,37,41].
3) We have highlighted the key role of some transition elements in the reticular position in the dehydrogenation oxidation of propane on VSiBEA [3], in the selective oxidation of methanol on VSiBEA [24] and in the selective catalytic reduction (SCR) of NOx on AgSiBEA [27], FeBEA, FeMOR, FeZSM-5 [12,18,22], CuSiBEA [22,28], CoSiBEA [19,26,], VSiBEA [5].
4) We have shown that the two-step post-synthesis method provides a very good dispersion of nickel, copper, cobalt and metallic silver in the BEA zeolite active in the conversion of chlorinated volatile organic compounds (Cl-VOCs) into valuable products, a very important in fine chemistry such as ethylene or vinyl chloride [2,9,10,13,2125,42].
5) We have identified in zeolite AgSiBEA different silver species in zeolitic network by the use of NMR nuclei ^{109}Ag and other complementary techniques such as UV-Visible DR, RPE, XPS [4,39].
6) By combining molecular modeling studies (DFT) and experimental results (FTIR and UV-Visible DR) we have identified V insertion sites [24].
7) I have established a wide international collaboration with Professors J. Rynkowski, L. Chmielarz, T. Grzybek, P. Kustrowski, Drs M. Trejda and A. Srebowata (Poland), Prof. I. Rossetti, Università di Milano (Italy) and Prof. S. Orlyk and Drs. Kyriienko and N. Popovych, Institute of Physical Chemistry (Ukraine), which made it possible to characterize the transition metals incorporated in the zeolite network and to study the catalysts obtained with original properties in heterogeneous catalysis. All of this work has resulted in numerous articles in international journals with a high impact factor [1,13,19,29,38,41,44,45,46].

Positioning in the laboratory :

I work in the Surface Reactivity Laboratory (UMR 7197-CNRS, Pierre and Marie Curie University) from 30 years. I develop a research theme, autonomously putting in place the national and international collaborations necessary to our approaches and by supervising the students in masters and theses.
From the scientific point of view, the objective of this theme is to describe the influence of the defects generated in different types of supports (oxides, zeolites, mesoporous materials) on the properties of the metallic species (V, Mo, Co, Fe, Ni) supported, by a characterization of solids, at the molecular level during the various preparation steps and their final reactivity in catalysis. To develop this approach, I benefit from all the skills acquired during my career, both in the field of heterogeneous catalysis and in the synthesis and characterization of acidic zeolites.
My work integrates many complementary experimental approaches, in particular physicochemical and spectroscopic, necessary for a satisfactory characterization of oxides, microporous and mesoporous materials. My studies show that, in the case of industrial catalysts, surface reactivity is related to the presence of transition metals in particular coordination and led to a desired activity.
My research topic entitled "Functionalization of Porous Materials by Transition Elements for Catalysis Applications" is part of the research activity of the Surface Reactivity Laboratory and the "Catalysis"

team guideline which concerns study of the influence of the spatial organization of the various components of the active site on its mode of operation.

The objectives of my research :

1) prepare and study model redox materials by following in situ the kinetics and the deposition selectivity of these transition elements in zeolites, in particular by spectroscopy (UV-Visible DR, photoluminescence, RPE, Raman),

2) functionalizing acidic porous materials by using the two-step post-synthesis method by introducing different transition metals in a network position to obtain bi-functional and multi-functional catalysts .

Porous materials functionalized by transition elements have been applied in industrially and environmentally important reactions and the results published in newspapers with a high impact factors:

i) dehydrogenation oxidation of propane to propene (case of V) [3],

ii) selective oxidation of methanol (case of V) [24],

iii) oxidation of CO (case of Fe) [35],

iv) partial oxidation of methane (case of Ni) [17],

v) selective catalytic reduction (SCR) of NOx by ethanol and NH_3 (case of V, Ag, Fe, Co, and Cu) [5,6,7,12,22,23,26,27,29,31,33]

vi) removal of chlorinated volatile organic compounds (Cl-VOCs) (case of Ni) [2,9,10,13,15,21,25,36,40].

The surface species responsible for the reactivity were identified by spectroscopy and with the help of molecular probes (in particular pyridine, CO, NO) [1,3,4,11,14,29,30,41,47] and their formation have been supported by theoretical studies using ab initio quantum chemistry (DFT) computation methods [24,34].

References

47 Influence of the nature and environment of manganese in Mn-BEA zeolites on NO conversion in selective catalytic reduction with ammonia, R.BARAN, L; VALENTIN, J.M. KRAFFT, T GRZYBEK, P. GLATZEL, S. DZWIGAJ, *Phys. Chem. Chem. Phys.* **2017**, *19*, 13553-13561 (**2017 PCCP HOT article), Impact Factor (IF)**(5 Year) **= 4.2**

46 Cobalt-containing BEA zeolite for catalytic combustion of toluene, A. ROKOCINSKA, M. DROZDEK, B. DUDEK, B. GIL, P. MICHORCZYK, D. BROURI, S. DZWIGAJ, P. KUSTROWSKI, *Appl. Catal. B* **2017**, *212*, 59-67, **Impact Factor (IF) = 10.2**

45 Ethylene production via catalytic dehydration of diluted bioethanol: A step towards an integrated biorefinery, I. ROSSETTI, M. COMPAGNONI, E. FINOCCHIO, G. RAMIS, A. DI MICHELE, Y. MILLOT, S. DZWIGAJ, *Appl. Catal. B* **2017**, *210*, 407-420, **Impact Factor (IF) = 10.2**

44 Ethylene production from diluted bioethanol solutions, I. ROSSETTI, M. COMPAGNONI, G. DE GUIDO, L.A. PELLEGRINI, G. RAMIS, S. DZWIGAJ, *Can. J. Chem. Eng.* **2017**, *95*, 1752-1759, **Impact Factor (IF) = 1.4**

43 Incorporation of vanadium into the framework of hydroxyapatites: importance of the vanadium content and pH conditions during the precipitation step, S. PETIT, T. GODE, C. THOMAS, S. DZWIGAJ, Y. MILLOT, D. BROURI, J.M. KRAFFT, G. ROUSSE, C. LABERTY-ROBERT, G. COSTENTIN, *Phys. Chem. Chem. Phys.* **2017**, *19*, 9630-9640, **Impact Factor (IF) = 4.2**

42 The impact of the hydrodechlorination process on the physicochemical properties of bimetallic Ag-CuBeta zeolite catalysts A. SREBOWATA, I.I. KAMINSKA, S. CASALE, D. BROURI, C. CALERS, S. DZWIGAJ, *Micropor. Mesopor. Mater.* **2017**, *243*, 56-64, **Impact Factor (IF) = 3.5**

41 Ethanol conversion into 1,3-Butadiene by Lebedev method over MTaSiBEA zeolites (M = Ag, Cu, Zn), P. KYRIIENKO, O. LARINA, S. SOLOVIEV, S. ORLYK, C. CALERS, S. DZWIGAJ, *ACS Sustainable Chemistry & Engineering*, **2017**, *5*, 2075-2083 (**Newspaper cover**), **Impact Factor (IF) = 6.4**

40 Influence of preparation procedure on catalytic activity of PdBEA zeolites in aqueous phase hydrodechlorination of 1,1,2-trichloroethene, I.I. KAMINSKA, D.LISOVYTSKIY, S. CASALE, A. SREBOWATA, S. DZWIGAJ, *Micropor. Mesopor. Mater*. **2017**, *237*, 65-73, **Impact Factor (IF) = 3.5**

39 Identification of the siver state in the framework of Ag-containing zeolite by XRD, FTIR, photoluminescence, ^{109}Ag NMR, EPR, DR UV-vis, TEM and XPS investigations, P. NATALIIA, P. KYRIIENKO, S. SOLOVIEV, R. BARAN, Y. MILLOT, S. DZWIGAJ, *Phys. Chem.* Chem. Phys. **2016**, *18*, 29458-29465, **Impact Factor (IF) = 4.2**

38 Syngas production via steam reforming of bioethanol over Ni-BEA catalysts : A BTL strategy, I. ROSSETTI, M. COMPAGNONI, E. FINOCCHIO, G. RAMIS, A. DE MICHELE, A. ZUCCHINI, S. DZWIGAJ, *Inter. J. Hydrogen Energy*, **2016**, *41*, 16878-16889, **Impact Factor (IF) = 4.1**

37 Effect of the niobium state on the properties of NbSiBEA as bifunctional catalysts for gas- and liquid-phase tandem processes P. I. KYRIIENKO, O.V. LARINA, N.O. POPOVYCH, S.O. SOLOVIEV, Y. MILLOT, S. DZWIGAJ, *J. Mol. Catal. A* **2016**, *424*, 27-36, **Impact Factor (IF) = 4.1**

36 Influence of the postsynthesis preparation procedure on catalytic behaviour of Ag- loaded BEA zeolites in the hydrodechlorination of 1,2-dichloroethane into value added products, A. SREBOWATA, R. BARAN, G. SLOWIK, D. LISOVYTSKIY, S. DZWIGAJ *Appl. Catal. B* **2016**, *199*, 514-522, **Impact Factor (IF) = 10.2**

35 Nature of the active sites in CO oxidation on FeSiBEA zeolites, I. KOCEMBA, J.RYNKOWSKI, J. GURGUL, R. P. SOCHA, K.LATKA, S. DZWIGAJ, *Appl. Catal. A* **2016**, *519*, 16-26, **Impact Factor (IF) = 4.4**

34 Characterization of zeolitic intraframework molybdenum sites, G. SKARA, R. BARAN, T. ONFROY, F. De PROFT, S. DZWIGAJ, F. TIELENS, *Micropor. Mesopor. Mater.* **2016**, *225*, 355-364, **Impact Factor (IF) = 3.5**

33 Influence of the nature and environment of cobalt on the catalytic activity of Co-BEA zeolites in selective catalytic reduction of NO with ammonia, R. BARAN, J.M. KRAFFT, T. ONFROY, T. GRZYBEK, S. DZWIGAJ, *Micropor. Mesopor. Mater.* **2016**, *225*, 515-523, **Impact Factor (IF) = 3.5**

32 High selectivity of TaSiBEA zeolite catalysts in 1,3-butadiene production from ethanol and acetaldehyde mixture, P. I. KYRIIENKO, O.V. LARINA, S.O. SOLOVIEV, S.M. ORLYK, S. DZWIGAJ, *Catal. Commun.* **2016**, *77*, 123-126, **Impact Factor (IF) = 3.5**

31 Effect of postsynthesis preparation procedure on the state of copper in CuBEA zeolites and its catalytic properties in SCR of NO with NH_3, R. BARAN, F. AVERSENG, D. WIERZBICKI, K. CHALUPKA, J.M. KRAFFT, S. DZWIGAJ, *Appl. Catal. A* **2016**, *198*, 457-470, **Impact Factor (IF) = 4.4**

30 Incorporation of Mn into the vacant T-atom sites of a BEA zeolite as isolated, mononuclear Mn: FTIR, XPS, EPR and DR UV-Vis studies, R. BARAN, L. VALENTIN, S. DZWIGAJ, *Phys. Chem. Chem. Phys.* **2016**, *18*, 12050-12057, **Impact Factor (IF) = 4.2**

29 Experimental evidence of NO SCR mechanism in the presence of the BEA zeolite with framework and extra-framework cobalt species, P. BORON, L. CHMIELARZ, B. GIL, B. MARSZALEK, S. DZWIGAJ, *Appl. Catal. B* **2016**, *198*, 457-470, **Impact Factor (IF) = 10.2**

28 High activity of mononuclear copper present in the framework of CuSiBEA zeolites in the selective catalytic reduction of NO with NH_3, R. BARAN T. GRZYBEK, T. ONFROY, S. DZWIGAJ, *Micropor. Mesopor. Mater.* **2016**, *226*, 104-109, **Impact Factor (IF) = 3.5**

27 Influence of partial dealumination of BEA zeolites on physicochemical and catalytic properties of AgAlSiBEA in H_2-promoted SCR of NO with ethanol, N. POPOVYCH, P. KYRIIENKO, S. SOLOVIEV, S. ORLYK, S. DZWIGAJ, *Micropor. Mesopor. Mater.* **2016,** *226*, 10-18, **Impact Factor (IF) = 3.5**

26 Effect of Co content on the catalytic activity of CoSiBEA zeolites in N_2O decomposition and SCR of NO with ammonia P. BORON, L. CHMIELARZ, S. CASALE, C. CALERS, J.M. KRAFFT, S. DZWIGAJ, *Catal. Today* **2015,** *258*, 507-517, **Impact Factor (IF) = 4.5**

25 Ag,Ni bimetallic SiBEA zeolite as an efficient catalyst of hydrodechlorination of 1,2−dichloroethane towards ethylene A. SREBOWATA, I. ZIELINSKA, R. BARAN, G. SLOWIK, S. DZWIGAJ, *Catal. Commun.* **2015**, *69*, 154−160, **Impact Factor (IF) = 3.5**

24 Methanol Oxidation to Formaldehyde on VSiBEA Zeolite: A Combined DFT and Experimental Study, D. C. TRANCA, F. J. KEIL, I. TRANCA, M. CATALAYUD, S. DZWIGAJ, M. TREJDA, F. TIELENS, *J. Phys. Chem. C* **2015**, *119*, 13619−13631, **Impact Factor (IF) = 4.7**

23 Catalytic properties of AgAlBEA and AgSiBEA zeolites in H_2−promoted selective reduction of NO with ethanol, N. POPOVICH, P. KYRIIENKO, S. SOLOVIEV, S. ORLYK, S. DZWIGAJ, *Microp. Mesopor. Mater.* **2015**, *203*, 163−169, **Impact Factor (IF) = 3.5**

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