

Anne DAVIDSON

Maître de conférence 1^{ère} classe

Habilitation à diriger les Recherches

62 years, two girls 31 and 33 years

Phone : 01 44 27 55 60

e-mail : anne.davidson@sorbonne-universite.fr

ORCID : [0000-0001-6100-5284](https://orcid.org/0000-0001-6100-5284)

EXPERTISE, Research activities

Nanoparticles, Semi conducting oxides, optical properties, influence of porous supports (silica SBA-15, graphite/graphene)

Correlation with photocatalytic activity, oxidation reactions in solution and for the decomposition of large micro-polluants (pesticides, medical molecules) and methane reforming in the gas phase.

Principal used techniques

SAXS, XPS and UV visible NIR spectroscopies

Participation to the analysis of catalysis, NMR, TEM and SEM measurements

Teaching duties

L1: 1C001 Transformation Chimique en solution (TP)

OIP : Orientation Insertion Professionnelle (cours TD)

M1 : Matériaux, MTX4, POLYTECH, Paris (TP)

Practical work with students of second year of Engineering School

Professionnal activity

Starting in Laboratoire de Réactivité de Surface, in 1990. Successive Directors: UPMC, Michel Che, Michelle Breyse, Claire-Marie Pradier and now Sorbonne Université : Hélène Pernot

2002 : Habilitation à diriger les Recherches; Matériaux poreux

Distinctions 1994 Bourse NATO

1994-1996 : a year and a half of sabbatical work at UCSB, California (Prof. A.K. Cheetham and G.D. Stucky)

2001-2005 Recipient of Ph.D. and Research Supervising Bonus

Five recent publications

- [1] “Nanocasting”: using SBA-15 silicas as hard templates to obtain monodispersed superparamagnetic gamma-Fe₂O₃ nanoparticles E. Delahaye, V. Escax, N. El Hassan, A. Davidson, R. Aquino, V. Dupuis, R. Perzynski, Y. L. Raikher *J. Phys. Chem. B*, 110, 26001-26011 (2006).
- [2] Dispersion of Co₃O₄ nanoparticles within SBA-15 using alkane solvents J. van der Meer, I. Bardez, F. Bart, P.A. Albouy, G. Wallez, A. Davidson, *Microp. Mesop. Mat.* 118 (1-3), 183-188 (2009).
- [3] Identification and location of iron species in Fe/SBA-15 catalysts: interest for catalytic Fenton reactions, C. Cornu, J.L. Bonnardet, S. Casale, A. Davidson, S. Abramson, G. André, F. Porcher, I. Gric, V. Tomasic, D. Vujevic, N. Koprivanac, *J. Phys. Chem. C*, 116, 3437-3448, (2012).
- [4] Use of SBA15 silica grains to engineering of mixtures of oxides NiFe and CoFe for advanced oxidation reactions under visible light, N. Tabaja, D. Brouri, S. Casale, S. Zein, M. Jaafar, M. Selmane, J. Toufaily, A. Davidson, T. Hamieh, *Applied Catalysis B, Environmental* 253 (2019) 369-378 - <https://doi.org/10.1016/j.apcatb.2019.04.073>
- [5] The Annealing Effect of Arranged Nickel Octahedra Nanoparticles on the Performance of NiO Supported in Silica in Combined Steam and Dry Reforming of a Model Biogas Mixture, K. Jabbour, A. Davidson, published 24 July 2023 in *Arabian Journal for Science and Engineering. Arab J Sci Eng* (2023). <https://doi.org/10.1007/s13369-023-08108-w>

Three recent participation to International Congresses (oral made in English)

- 1 - Hydrolyse acide de copolymères triblocs P123 dans un hybride de silice SBA-15 obtenu par précipitation et par auto-assemblage par évaporation (E.I.S.A.), C. Boissière, F. Ribot, A. Davidson, D. Kreher, *Materiaux_2018_Strasbourg*
- 2 - Oxydation du méthanol sur des catalyseurs à base de TiO₂ modifiés par du cuivre et du zinc, rôle des hétérojonctions entre oxydes, W. Chettah, A. Davidson, M. Medjram, S. Barama. Methanol photocatalytic oxidation in water with iron oxides quantum-dots dispersed with SBA-15 silica grains
- 3 - N. Tabaja, S. Casale, D. Brouri, A. Davidson, J. Toufaily, T. Hamieh, R. B. Cole, S. Sladkevich, International Symposium on Functional Nanomaterials in Industrial Applications at the University of Central Lancashire (UCLan), Mars 2016

Clubs, associations

LRS (Renater)

Société Chimique de France

Société savante de Photocatalyse