



The Combustion Institute

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Frédérique Battin-Leclerc

2018 Candidate Profile: The Combustion Institute Board of Directors

Reasons for Nomination

I have 30 years' experience in the field of combustion. I started by a PhD on chemical kinetics of auto-ignitions. In 1991, I entered CNRS to study substitutes of halons to mitigate fires, but my research rapidly evolved towards the development of software (EXGAS) for the automatic generation of detailed kinetic mechanisms for the oxidation of molecules representative of those of engine fuels. During my entire carrier, I also carried out experimental studies to provide data for model validation in jet-stirred reactors, laminar premixed flames and a shock tube.

I discovered The Combustion Institute (CI) in 1990 at the 23rd International Symposium on combustion and since then I published an important part of my work in CI journals. I served CI as member of the French Board, as Technical program co-chair of the 34th Symposium International of Combustion, and in several other CI committees. This gave me a good knowledge of the institute. Considering my research experience in combustion, in the evaluation of researchers and research programs, I believe that my own idea of the research and transmission may be useful to the community. That is why I am a candidate to serve on the board of directors.



Frédérique Battin-Leclerc

See the next page for the candidate's curriculum vitae.

CURRICULUM VITAE

Personal data

French, born in 1964, married, two daughters
Laboratoire Réactions et Génie des Procédés (LRGP)
ENSIC, 1, rue Grandville, BP 20451, 54001 NANCY CEDEX

Education

- Habilitation of the "Institut National Polytechnique de Lorraine" (1997)
- PhD of the "Institut National Polytechnique de Lorraine" (1991)
- Engineer of the "Ecole Nationale Supérieure des Industries Chimiques, Nancy" (1987).

Work experience and recent positions

CNRS research director 1st class (CNRS researcher from 1991)
mainly based in LRGP-Nancy apart from:

8 months fellowship in AEA Technology (Harwell, U.K.) in 1993;
1 year fellowship in N.O.A.A. (Boulder, USA) in 1996;
1 year fellowship in Laboratory of Glaciology and Environment Geophysics (Grenoble),
2006-2007

Head of the LRGP-KinCom research team (2000-2016, about 11 people)

European Research Council advanced researcher grant 2008-2013:

Clean-ICE - Detailed chemical kinetic models for cleaner internal combustion engines",
(29 people involved):

<http://lrgp.univ-lorraine.fr/axes-de-recherche/reactions-et-reacteurs/cinetique-de-combustion-kincom/clean-ice.html>

Chair of the management committee of the COST Action CM0901: Detailed chemical kinetic models for cleaner combustion (22 European countries, 2010-2014)

Technical program co-chair of the 34th Symposium International of Combustion which has gathered more than 1200 participants in 2012

Co-editor of the book: Cleaner Combustion – Developing Detailed Chemical Kinetic Models, F. Battin-Leclerc, J. Simmie, E. Blurock Eds., Springer September 2013

Expertise et Scientific Production

- Study of elementary reactions involved in the atmospheric chemistry of halogenated compounds
- Development and validation of detailed kinetic models for complex gas-phase reactions:
 - Reactions involving halogenated compounds
 - Combustion and oxidation of transport fuel components (in collaboration with IFP-Energies Nouvelles, Total, PSA-Peugeot-Citroën, Renault, CSTB, TERBIS and Saudi Aramco)

> 150 publications in peer-reviewed international journals (*h-factor* = 45 (*Scopus*))

1 patent

> 200 communications to international meeting

> 40 invited conferences

Awards and Honours

- CNRS Silver Medal in 2010
- Honorary Guest Professor of the University of Science and Technology of China, Hefei, 2010
- Knight of the French National Order of Merit since 2012
- Fellow of the Combustion Institute, 2018