

Call for papers
**Dossier/Special issue on Advances in signal and image processing
for physico-chemical analysis**
Oil & Gas Science and Technology - Revue d'IFP Energies Nouvelles
<http://tinyurl.com/ogst-signal-chemical-analysis>

With the advent of more affordable, higher resolution or innovative data acquisition techniques (for instance hyphenated instrumentation such as two-dimensional chromatography), the need for advanced signal and image processing tools has grown in physico-chemical analysis, together with the quantity and complexity of acquired measurements.

Either with mono- (signals) or two-dimensional (from hyphenated techniques to standard images) data, processing generally aims at improving quality and at providing more precise quantitative assessment of measurements of materials and products, to yield insight or access to information, chemical properties, reactive dynamics or textural properties, to name a few (for instance). Although chemometrics embrace from experimental design to calibration, more interplay between physico-chemical analysis and generic signal and image processing is believed to strengthen the two disciplines. Indeed, although they strongly differ in background and vocabulary, both specialities share similar values of best practice in carrying out identifications and comprehensive characterizations, albethey of samples or of numerical data.

The present call for papers aims at gathering contributions on recent progresses performed and emerging trends concerning (but not limited) to:

- ◆ 1D and 2D acquisition, sparse sampling (compressive sensing), modulation/demodulation, compression, background/baseline/trend estimation, enhancement, integration, smoothing and filtering, denoising, differentiation, detection, deconvolution and source separation, resolution improvement, peak or curve fitting and matching, clustering, segmentation, multiresolution analysis, mathematical morphology, calibration, multivariate curve resolution, property prediction, regression, data mining, tomography, visualization, pertaining to the improvement of physico-chemical analysis techniques, including (not exclusively):

- ◆ (high-performance) gas, liquid or ion chromatography; gel electrophoresis; diode array detector; Ultraviolet (UV), visible, Infrared (NIR, FIR), Raman or Nuclear Magnetic Resonance (NMR) spectroscopy, X-ray diffraction (XRD), X-Ray Absorption (EXAFS, XANES), mass spectrometry; photoacoustic spectroscopy (PAS); porosimetry; hyphenated techniques; electron microscopy (SEM, TEM),

in the following proposed domains:

- ◆ catalysis, chemical engineering, oil and gas production, refining processes, petrochemicals, and other sources of energy, in particular alternative energies with a view to sustainable development.

Provisional deadlines:

Statement of intent: January 31st, 2012

Submission of final manuscript: **February 17th, 2012**

Publication: 2nd semester 2012

Guest editor:

Dr. Laurent Duval (IFP Energies nouvelles)

Associate editors:

Prof. Fabio Rocca (Politecnico di Milano)

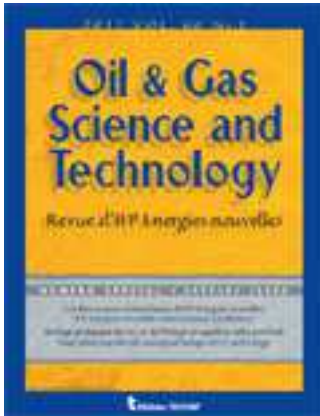
Prof. Thierry Gallouët (université de Provence)

Editor in chief:

Chief: Dr. François Ropital (IFP Energies nouvelles)

Prospective authors are advised to send a brief statement of intent by an email to Dr. Laurent Duval [laurent(dot)duval(ad)ifpen(dot)fr] as soon as possible (no later than January 31st, 2012) with the following information:

- ◆ corresponding author (affiliation),
- ◆ co-authors (affiliation),
- ◆ tentative title,
- ◆ keywords,
- ◆ statement of intent (context, issues addressed, tools used, originality of the contribution).



Further information:

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