

Sid Ahmed BELDJILALI

Born December 02, 1976 in Oran, Algeria
Married, 2 children
Algerian Citizenship

Professional address:

LPPMCA – Plasmas Physics, Conductive Materials and their Applications
Laboratory,
Energetic Physics Department, Faculty of Physics
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EDUCATION

- 12/2005 – 06/2011 | **Doctorate. in Sciences (PhD) in Materials Physics & Plasmas,**
University of Sciences and of Technology of Oran – USTO-MB, Oran, Algeria
LPPMCA – Plasmas Physics, Conductive materials and their applications laboratory
- 12/2002 - 06/2005 | **Magister. in Photonics and matter,**
University of Sciences and of Technology of Oran – USTO-MB, Oran, Algeria
LPPMCA – Plasmas Physics, Conductive materials and their applications laboratory

RESEARCH EXPERIENCE

- 12/2005 -06/2011 | **Laser-induced plasma spectroscopy applied to food analysis**
PhD, Plasmas Physics, Conductive materials and their applications (LPPMCA)
laboratory & Lasers, Plasmas and Photonic Processes (LP3) laboratory
University of Sciences and of Technology of Oran – USTO-MB, Oran, Algeria
Plasmas Physics, Conductive materials and their applications (LPPMCA) laboratory
Université de la Méditerranée, Marseille, France
Lasers, Plasmas and Photonic Processes (LP3–UMR 6182, CNRS) laboratory
Advisors : Dr. [Jörg Hermann](#) (LP3) and Dr. [Tewfik Baba-Hamed](#) (LPPMCA)
- 12/2002 - 06/2005 | **Laser plasma interaction: Application to self-focusing of an intense laser beam**
Magister, Plasmas Physics, Conductive materials and their applications (LPPMCA)
Laboratory
University of Sciences and of Technology of Oran – USTO-MB, Oran, Algeria
Advisor : Dr. [Tewfik Baba-Hamed](#)

03/2008 – 04/2008 | Internship (*2 months*):

Laser-induced plasma spectroscopy applied to food analysis

Lasers, Plasmas and Photonic Processes (LP3-UMR 6182, CNRS) laboratory
Marseille , France

Advisor : Dr. [Jörg Hermann](#)

09/2009 – 04/2011 | Franco-Algerian fellowship for the completion of doctoral thesis (*18 months*):

Laser-induced plasma spectroscopy applied to food analysis

Lasers, Plasmas and Photonic Processes (LP3-UMR 6182, CNRS) laboratory,
Marseille , France

Advisor : Dr. [Jörg Hermann](#)

09/2011 – 10/2011 | Internship (*1 month*):

Laser-induced plasma spectroscopy applied to thin films analysis and to stark width measurement.

Lasers, Plasmas and Photonic Processes (LP3-UMR 6182, CNRS) laboratory
Marseille , France

Advisor : Dr. [Jörg Hermann](#)

01/2013 – 01/2014 | Merit Postdoctoral Scholarship of Islamic Bank of Development IDB

Lawrence Berkeley National Laboratory, Berkeley, California, USA

Environmental Energy Technologies Division

Laser Spectroscopy & Applied Materials Group

Direct depth-resolved chemical analysis of Si Electrode/Electrolyte Interfaces by femtosecond Laser-Induced Breakdown Spectroscopy (fs-LIBS)

Advisor : Dr. [Rick E. Russo](#)

TEACHING EXPERIENCE

12/2005 - Now | Lecturer, University of Sciences and of Technology of Oran Mohamed Boudiaf–

USTOMB, Oran, Algeria.

Analytical mechanics – Electricity – Atomic physics – Biophysics, Plasma Physics

COMPETENCIES

Scientific skills |

- **Laser-matter interaction** : nanosecond laser processes, femtosecond laser, free-calibration modeling.

- **Optical instrumentation** : fast imaging, time- and space-resolved emission spectroscopy,
Optical microscopy, Interference microscope,...

- **Chemical processes**: Glove box, Pellet preparation

Languages | French | Fluent,

| **Arabic** | Fluent,

| **English** | Intermediate

Computing skills |

Language: FORTRAN, Mat lab

Data processing: Origin, Grace, Aurora, Excel

Operating system: Windows, Linux

COMPETENCIES

A. Publications

Published papers

[AO5] E. Axente, J. Hermann, G. Socol, L. Mercadier, **S. A. Beldjilali**, M. Cirisan, C. Luculescu, C. Ristoscu, I. Mihailescu, V. Craciun, Accurate analysis of indium-zinc oxide thin films via laser-induced breakdown spectroscopy based on plasma modeling". *J. Anal. At. Spectrom.* Doi: 10.1039/C3JA50355K (2013)

[AO4] W. L. Yip, E. Mothe, **S. Beldjilali**, J. Hermann, Accumulation of air in polymeric materials investigated by laser-induced breakdown spectroscopy, *J. Appl. Phys.* 111 (2012) 063108

[AO3] A. C. Popescu, **S. Beldjilali**, G. Socol, V. Craciun, I. N. Mihailescu, J. Hermann, *Analysis of indium zinc oxide thin films via laser-induced breakdown spectroscopy*, *J. Appl. Phys.* 110 (2011) 083116

[AO2] **S. Beldjilali**, W. L. Yip, J. Hermann, T. Baba-Hamed, A. Belasri, *Investigation of plasmas produced by laser ablation using single- and double-pulses for food analysis demonstrated by probing potato skins*, *Anal Bioanal Chem.* 400 (2011) 2173–2183

[AO1] **S. Beldjilali**, D. Borivent, L. Mercadier, E. Mothe, G. Clair, J. Hermann, *Evaluation of minor element concentrations in potatoes using laser-induced breakdown spectroscopy*, *Spectrochimica Acta Part B* 65 (2010) 727–733.

B. Conference Proceedings

[B1] S. Beldjilali, J. Hermann, T. Baba-Hamed, A. Belasri, *Analyses of plasmas produced by laser ablation of fresh aliments*, *Advanced Materials Research.* 227 (2011) 49–52

C. Presentations

[C22] Sid Ahmed Beldjilali, Ulrike Vogl, Simon Lux, Jaroslaw Syzdek, Huaming Hou, Xianglei Mao, Vassilia Zorba, Martin Winter, Robert Kostecki and Richard E. Russo, *Femtosecond Laser-Induced Breakdown Spectroscopy (fs-LIBS) of Electrode/Electrolyte Interfaces*, FACSS/SciX'13 analytical chemistry conference, Milwaukee, WI, USA (September 29 - October 4, 2013), Oral Presentation

[C21] S. Beldjilali, J. Hermann, T. Baba-Hamed, A. Belasri, Trace element determination in drugs by laser-induced breakdown spectroscopy, EWLA'12 - 11th European Workshop on Laser Ablation, June 19-22, 2012, Gijon, Spain.

[C20] S. Beldjilali, J. Hermann, T. Baba-Hamed, A. Belasri, Investigation of Plasmas Produced by Laser Ablation of Fresh Potatoes Using Single and Double Pulses, EMSLIBS 2011 - 6th Euro- Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy, September 11-15, 2011, Izmir, Turkey.

[C19] W. L. Yip, S. Beldjilali, E. Mothe, L. Mercadier, J. Hermann, Accumulation of Air in Polymeric Materials Investigated by Laser-Induced Breakdown Spectroscopy, EMSLIBS 2011 - 6th Euro-

Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy, September 11-15, 2011, Izmir, Turkey.

[C18] A. C. Popescu, S. Beldjilali, D. Craciun, V. Craciun, G. Socol, I. N. Mihailescu, J. Hermann, Analysis of Indium Zinc Oxide Thin Films with Uneven Composition by Laser Induced Breakdown Spectroscopy, EMSLIBS 2011 - 6th Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy, September 11-15, 2011, Izmir, Turkey.

[C17] E. Mothe, L. Mercadier, W. L. Yip, S. Beldjilali, J. Hermann, Time- and Space-Evolution of CN Violet and C2 Swan Molecular Bands in Plasmas Produced by Laser Ablation of Polymers, EMSLIBS 2011 - 6th Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy, September 11-15, 2011, Izmir, Turkey.

[C16] S. Beldjilali, J. Hermann, T. Baba-Hamed, A. Belasri, Analyses of plasmas produced by laser ablation of fresh aliments, Second International Conference on Laser and Plasma Applications in Materials Science LAPAMS'10, 27-30 November 2010, El-Aurassi Hotel, Algiers, Algeria. ORAL

[C15] S. Beldjilali, L. Mercadier, E. Mothe, W. L. Yip, J. Hermann, Diagnostics of plasmas produced by laser ablation of fresh vegetables, LIBS 2010, 6th International Conference on Laser- Induced Breakdown Spectroscopy, 13- 17 September 2010, Memphis, USA.

[C14] W. L. Yip, S. Beldjilali, E. Mothe, L. Mercadier, J. Hermann, Expansion dynamics of plasmas produced by double pulse nanosecond laser ablation, LIBS 2010, 6th International Conference on Laser-Induced Breakdown Spectroscopy, 13- 17 September 2010, Memphis, USA.

[C13] E. Mothe, M. Cvejić, S. Jovičević, L. Mercadier, S. Beldjilali, N. Konjević, J. Hermann, Time and space-resolved laser plasma diagnostics for Stark broadening measurements in laser plasma, LIBS 2010, 6th International Conference on Laser-Induced Breakdown Spectroscopy, 13- 17 September 2010, Memphis, USA.

[C12] S. Beldjilali, L. Mercadier, E. Mothe, W. L. Yip, J. Hermann, Analyse des pommes de terre par spectroscopie du plasma d'ablation laser, Les journées du spectroscopie moléculaires PAMO-GSM 2010, from June 30 to July 2, 2010, Paris, France.

[C11] E. Mothe, S. Beldjilali, L. Mercadier, W. L. Yip, J. Hermann, Mesures sans étalonnage, Validation du brevet 08/06203 (Patent :WO/2010/052380), Les Journées LIBS 2010 , du 28 au 30 Juin 2010, Strasbourg, France. ORAL

[C10] D. Borivent, S. Beldjilali, M. Boueri, J. Hermann, L. Mercadier, E. Mothe, V. Motto-Ros, J. Yu, Measurement of trace element concentrations in fresh vegetables using laser-induced breakdown spectroscopy, EMSLIBS 2009, 5th Euro-Mediterranean Symp. on Laser-Induced Breakdown Spectroscopy, 28 Sep.- 1 Oct. 2009, Tivoli, Italie.

[C9] W. Q. Lei, V. Motto-Ros, M. Boueri, Q. L. Ma, D. Borivent, S. Beldjilali, L. J. Zheng, H. P. Zeng, J. Hermann, J. Yu, Characteristics of laser-induced plasmas from fresh potatoes, EMSLIBS 2009, 5th Euro-Mediterranean Symp. on Laser-Induced Breakdown Spectroscopy, 28 Sep.- 1 Oct. 2009, Tivoli, Italie.

[C08] D. Borivent, S. Beldjilali, L. Mercadier, E. Mothe, J. Hermann, Spectroscopic analysis of laser produced plasmas for quality control of aliments, CIP 09, 17th International Colloquium on Plasma Processes, 22-26 Juin 2009, Marseille, France.

[C07] D. Borivent, S. Beldjilali, M. Boueri, J. Hermann, L. Mercadier, E. Mothe, J. Yu, Analyse LIBS de légumes, Journées LIBS 2009, 18 et 19 mai 2009, Bordeaux, France.

[C06] S. Beldjilali, F. Brygo, J. Hermann, M. Boueri, M. Baudelet, J. Yu, Analysis of potatoes by laser-induced breakdown spectroscopy, LIBS2008, 5th International Conference on Laser-Induced Breakdown Spectroscopy, 22-26 Sept. 2008, Berlin, Germany.

[C05] S. Beldjilali, T. Baba-Hamed et A. Belasri, "Interaction laser plasma : Détermination du gradient de la force ponderomotrice d'un laser de haute puissance dans le cas relativiste", CIPA'2007, 2nd International Conference on Physics and its Applications CIPA'2007, 2- 4 December 2007, USTO, Oran, Algeria. ORAL

[C04] S. Beldjilali, T. Baba-Hamed and A. Belasri, "Interaction laser-Plasma : Etude paramétrique de la force ponderomotrice d'un laser de haute puissance", 2ème Conférence nationale sur les rayonnements et leurs applications CNRA'2006, 15-17 Novembre 2006, USTHB & COMENA, Algiers, Algeria.

[C03] T. Baba-Hamed, S. Beldjilali and A. Belasri, Electrical and optical plasma properties induced by an intense laser beam , EMSLIBS 2005, 3rd Euro-Mediterranean Symposium on Laser- Induced Breakdown Spectroscopy, 6-9 September 2005, Aachen, Germany.

[C02] S. Beldjilali, T. Baba-Hamed and A. Belasri, Influence de l'autofocalisation d'un faisceau laser de haute puissance sur un plasma chaud, 1er Congrès International sur le Génie Electrique CIGE'04, 10-12 Octobre 2004, Sétif, Algeria. ORAL

[C01] T. Baba-Hamed, S. Beldjilali and A. Belasri, Self-focusing of an intense beam laser and its effect on plasma parameters , 3rd International Conference LIBS_2004 on Laser induced plasma spectroscopy and applications, September 28- October 1, 2004, Torremolinos (Malaga), Spain.