5th international conference on

Advanced Nanoparticle Generation & Excitation by Lasers in Liquids

June 3rd - 7th, 2018

All-inclusive stay

Domaine Saint Joseph

http://angel-conference.org

PROGRAMME

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WELCOME

Dear young researchers, dear colleagues,

We are pleased to welcome you to the fifth conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids.

Nanoparticles are widely implemented as functional elements on surfaces, into volume, and as nanohybrids, with a wide spectrum of applications such as optics, optoelectronics, electronics, biomedicine, pharma and health, catalysis, energy science, automotive industry, or nutrition. In 2012, the total annual quantity of nanomaterials on the global market has been estimated at approximatively 11 million tonnes, with a market value of roughly 20bn € (data from European Commission). Each application requires specific features regarding size, morphology, surface chemistry, purity, colloidal stability, defects, or doping. The development of new synthesis methods, which can be reliably scaled-up to industrial production levels, is mandatory to widen the application prospectives of nanomaterials. Laser/matter interaction in liquids offers several synthesis routes for nanoparticle generation: laser ablation in liquid of a solid target (LAL), laser melting in liquid (LML), and laser fragmentation in liquid (LFL). LAL has proven its versatility and reliability as a scalable synthesis method. Moreover, LML can lead to high purity oxides or alloys difficult to produce by other methods.

Some significant novelties should be highlighted:

- To increase the visibility of the student's work, a flash-talk session is scheduled before the first poster session.
- In addition to the students' awards, the Fojtik-Henglein-Prize will be delivered for the first time. The Fojtik-Henglein-Prize will reward a senior scientist for a significant scientific breakthrough, or a pioneering research result, within the framework of ANGEL conference series.
- We are pleased to welcome two plenary speakers, Prof. Alfred Vogel (University of Luebeck, Germany) and Prof. Daniel Guay (INRS, Canada). Their talk will be video-recorded and then available on the Angel2018 website.
- The first session on Tuesday morning will start with two tutorials on the basics of catalysis and electrocatalysis. Catalysis is one of the most promising applications for the laser generated nanoparticles in liquids.
- Social events are scheduled every day to increase the interaction between the attendees.

Dear young researchers, dear colleagues, I hope you will enjoy the conference and have a great time interacting all together.

Dr.-Ing. David AMANS

COMMITTEES / CONFERENCE CHAIRS

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Tatiana Itina, Habil. Dr.

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SOCIAL PROGRAMME - TUESDAY 5TH

Walking tour of the old city 2pm - 6:30pm

2:15pm	Bus pick up at Domaine Saint Joseph
2:45pm	Bus drop off Place Bellecour
3pm - 5pm	Lyon Old City walking tour
Meeting point:	in front of the Visitor Center
5pm - 6pm	free time
6pm	Bus pick up Place Bellecour
6:30pm	Arrival at Domaine Saint Joseph

Gala dinner 7:30pm - 11:30pm

L'ABBAYE
Evénements & Réceptions
PAUL BOCUSE

7:30pm Bus pick up at Domaine Saint Joseph	11:30pm Return at Domaine Saint Joseph

The social porgramme (city tour and gala diner) is not included in the registration fees.

Booking is compulsory and extra fees will apply. If you have not booked these options online, please see the organizing team at the registration desk.

ANGEL 2018 - FINAL PROGRAMME

Monday, June 4		Tuesday, June 5		Wednesday, June 6		Thursday, June 7	
7:30 – 8:15	**REGISTRATION**			8:00 – 9:00	**PC & IAB meeting :** Hearing of applicants for ANGEL 2020 venue	8:00 – 9:00	**PC & IAB meeting**
8:15 – 8:30	**OPENING (Chairs)**	8:30 – 10:15	V. Amendola (Tutorial) D. Guay (Keynote)				
8:30 – 8:45	A. Gheisi (Sponsor)						
8:45 – 10:30 Chairman : S. Barcikowski	A. Vogel (Keynote) A. Nath H.J. Jung * T. Hupfeld *	Chairman : D. Amans	G. Marzun (Invited)	9:00 – 10:30 Chairman : Z. Swiatkowska-Warkocka	E. Barmina (Invited) K. Tibbetts T. Okamoto * J. Bárta	9:00 – 10:50 Chairman : V. Amendola	D. Mukherjee (Invited) A. Popov * B. Gökce L. D'Urso C. Rehbock
10:30 – 10:50	**COFFEE BREAK**	10:15 – 10:35	**COFFE BREAK**	10:30 – 10:50	**COFFEE BREAK**		
10:50 – 12:10 Chairman : L. Zhigilei	A. Kanitz * S. Reich * A. Plech S. Barcikowski	10:35 – 12:25 Chairman : A. Vogel	G. Baffou (Invited) S. Mérabia Y. Cai R. Kihara * G. Shafeev	10:50 – 12:20 Chairman : G. Shafeev	Z. Swiatkowska-Warkocka (Invited) N. Koshizaki A.R. Ziefuß * M. Lau	10:50 – 11:10 11:10 – 12:00	**COFFEE BREAK** **CLOSING REMARKS & STUDENT AWARDS**
12:10 – 14:00	**LUNCH BREAK**	12:25 – 14:15	**LUNCH BREAK**	12:20 – 14:00	**LUNCH BREAK**		**LUNCH BOXES**
14:00 – 15:40 Chairman : T. Itina	T. Sakka (Invited) L. Zhigilei (Invited) N. Inogamov V. Zhakhovsky	14:15 – 18:30	**GUIDED TOUR OF OLD CITY**	14:00 – 15:40 Chairman : S. Kudryashov	A. Fojtik A. Kabashin C. Bravin C. Doñate Buendía * R. Intartaglia		*** STUDENT**
15:40 – 16:00	**COFFEE BREAK**			15:40 – 16:00	**COFFEE BREAK**		
16:00 – 17:20 Chairman : G. Compagnini	Q. Yuan * V. Shur S. Shaji M. Dell'Aglio			16:00 – 17:30 Chairman : A. Kabashin	S. Kudryashov (Invited) C. Liang T. Chen * N. Tarasenko		
17:20 – 18:00	**GROUP PHOTO**						
18:00 – 19:00	**FLASH TALKS FOR POSTERS & SPONSORS**			17:30 – 19:00	**POSTER SESSION II**		
19:00 – 21:00	**POSTER SESSION I & DINNER COCKTAIL**	19:30 – 23:30	**GALA DINNER :** **The Abbaye, Paul Bocuse**	19:00 – 21:00	**Wine & Cheese COCKTAIL**		

DETAILED PROGRAMME

SUNDAY, June 3

17:00 – 19:00	**Programme Committee Meeting**	
17:00 – 20:00	**REGISTRATION**	**Hall of Domaine Saint-Joseph**
19:00 – 21:00	**Welcome Cocktail**	**Garden of Domaine Saint-Joseph**

MONDAY, June 4

7:30 – 8:15		**REGISTRATION**	**Hall of Domaine Saint-Joseph**
8:15 – 8:30		**OPENING TALK**	
8:30 – 8:45		**SPONSOR : Nano website**	
		A. Gheisi	How nature indexing helps you find nanotechnology Literature and data efficiently
8:45 – 10:30		**SESSION 1 : Dynamics of laser-induced cavitation**	
		Chairman : S. Barcikowski	
	S1-1	A. Vogel	Ablation and cavitation dynamics in laser-based nanoparticle generation and excitation
	S1-2	A. Nath	Implications of Focusing Effect on Cavitation Bubble Dynamics and Nanoparticles formed via Laser Ablation in Liquids
	S1-3	H.J. Jung *	Synthesis of Nickel Nanoparticles using Pulsed Laser Ablation in Various Solvents: Cavitation Bubble Dynamics and Characterization Studies
	S1-4	T. Hupfeld *	Influence of wettability and high viscosity on the cavitation bubble dynamics during pulsed laser ablation in liquid
10:30 – 10:50		**COFFEE BREAK**	
10:50 – 12:10		**SESSION 2 : Overview on process from in-situ measurements**	
		Chairman : L. Zhigilei	

	S2-1	A. Kanitz *	Investigation of femtosecond laser ablation of iron in different liquids at ultrashort timescales
	S2-2	S. Reich *	Fast multi-contrast imaging of the ablation process in liquids adding X-ray bright-field and dark-field methods
	S2-3	A. Plech	Disentangling competitive hierarchical processes in pulsed laser ablation in liquids
	S2-4	S. Barcikowski	Size quenching during laser synthesis of colloids happens already in the vapor phase of the cavitation bubble
12:10 – 14:00		**LUNCH BREAK**	
14:00 – 15:40		**SESSION 3 : Modelling**	
		Chairman : T. Itina	
	S3-1	T. Sakka	Dynamics of laser-induced plasma in water and mechanism of cluster formation
	S3-2	L. Zhigilei	Atomistic modelling of the generation of nanoparticles and surface nanostructuring by short pulse laser ablation in liquids
	S3-3	N. Inogamov	Laser ablation of gold inside water I
	S3-4	V. Zhakhovsky	Laser ablation of gold into water II: Comparative atomistic and hydrodynamics modeling
15:40 – 16:00		**COFFEE BREAK**	
16:00 – 17:20		**SESSION 4 : Nanomaterials I**	
		Chairman : G. Compagnini	
	S4-1	Q. Yuan *	Facet-Dependent Selective Adsorption of Mn-Doped α-Fe_2O_3 Nanocrystals Prepared by Laser Ablation in Liquids
	S4-2	V. Shur	Shape control of PbO nanoparticles produced by laser ablation in liquid
	S4-3	S. Shaji	Copper Antimony Sulfide ($CuSbS_2$) nanoparticles by pulsed laser ablation in liquid
	S4-4	M. Dell'Aglio	Characterization of Au and Ag nanoparticle produced by PLAL for considerations on their stability
17:20 – 18:00		**GROUP PHOTO**	
18:00 – 19:00		**FLASH TALKS FOR POSTERS**	
		Chairman : D. Amans	

19:00 – 21:00	**POSTER SESSION I & DINNER COCKTAIL**

TUESDAY, JUNE 5

8:30 – 10:15		**SESSION 5 : The Basics of Catalysis**	
		Chairman : D. Amans	
	S5-1	V. Amendola	Laser fabrication of nanoalloys for catalysis: generalities and opportunities
	S5-2	D. Guay	Catalysis and electrocatalysis on well-defined model systems generated by laser ablation
	S5-3	G. Marzun	Prospects and challenges of laser-generated nanoparticles for industrial applications in catalysis

10:15 – 10:35	**COFFEE BREAK**

10:35 – 12:25		**SESSION 6 : Photothermal effect**	
		Chairman : A. Vogel	
	S6-1	G. Baffou	Photothermal effects of gold nanoparticles. Applications in chemistry and cell biology
	S6-2	S. Mérabia	Nanobubbles generated by laser heated nanoparticles
	S6-3	Y. Cai	Laser irradiation guided anchoring of Au colloidal nanoparticles on α-Fe_2O_3 nanoparticles for photothermal effect
	S6-4	R. Kihara *	Transient Absorption Spectroscopic Study on Phase Transition Dynamics of Phthalocyanine Nanocrystals Induced by ns-laser Irradiation in Liquid
	S6-5	G. Shafeev	Spatial distribution of breakdown plasma under laser exposure of colloidal solutions of nanoparticles

12:25 – 14:15	**LUNCH BREAK**

14:15 – 18:30	**GUIDED TOUR OF LYON**

19:30 – 23:30	**GALA DINNER : The Abbaye, Paul Bocuse**

WEDNESDAY, JUNE 6

8:00 – 9:00	**PC & IAB meeting : hearing of the applicants for ANGEL2020 venue**

9:00 – 10:30		**SESSION 7 : Photochemistry**	
		Chairman : Z. Swiatkowska-Warkocka	
	S7-1	E. Barmina	Generation of H_2, O_2 and Hydrogen peroxide by laser-induced breakdown aqueous solutions of nanoparticles
	S7-2	K. Tibbetts	Controlling the photochemical reduction of metal ions in optical breakdown plasma
	S7-3	T. Okamoto *	Synthesis of single-nano-sized Au nanoparticles from liquid/liquid dispersion system by femtosecond laser irradiation
	S7-4	J. Bárta	Photochemical synthesis of nanoparticles in aqueous solutions
10:30 – 10:50		**COFFEE BREAK**	
10:50 – 12:20		**SESSION 8 : Laser-induced modifications**	
		Chairman : G. Shafeev	
	S8-1	Z. Swiatkowska-Warkocka	Laser-Induced Composite Particle Formation in Liquid: Insight in Physico-Chemical Processes
	S8-2	N. Koshizaki	Fracture Strength of Submicrometer Spherical Particles Fabricated by Pulsed Laser Melting in Liquid
	S8-3	A.R. Ziefuß *	Nanosecond laser fragmentation of colloidal gold nanoparticles with high intensity nanosecond pulses is driven by a single step fragmentation mechanism
	S8-4	M. Lau	Sequential and energy dose defined irradiation of particles in a free liquid jet: modification of ITOs optical and cobalt ferrites catalytic properties
12:20 – 14:00		**LUNCH BREAK**	
14:00 – 15:40		**SESSION 9 : Theranostics**	
		Chairman : S. Kudryashov	
	S9-1	A. Fojtik	Smart nanostructures for biomedical applications.
	S9-2	A. Kabashin	Novel advanced laser-synthesized nanomaterials for biomedical applications
	S9-3	C. Bravin	Laser-generated Metal Nanoparticles as Multifunctional Agents for Sensing and Nanomedicine Applications
	S9-4	C. Doñate Buendia *	Carbon Quantum Dots Fluorescent Labels Generated in a Continuous Flow Jet Configuration

	S9-5	R. Intartaglia	Germanium and Silicon: Laser-synthesized nanoparticles for bio-imaging applications

15:40 – 16:00		**COFFEE BREAK**	

16:00 – 17:30		**SESSION 10 : Nanomaterials II**	
		Chairman : A. Kabashin	
	S10-1	S. Kudryashov	Laser fabrication of colloidal hybrid nanoparticles: formation scenario and potential applications
	S10-2	C. Liang	Ubiquitous Metal Carbonization, Carbon Encapsulation, Metal-Catalyzed Graphitization during Laser Ablation of Metal in Organic Solvents
	S10-3	T. Chen *	Fullerene-Like MoS_2 Nanoparticles as Cascade Catalyst Improving Lubricant and Antioxidant Abilities of Artificial Synovial Fluid
	S10-4	N. Tarasenko	Liquid Assisted Laser Fabrication of Binary Nanocrystalline Structures Based on Germanium and Silicon

17:30 – 19:00		**POSTER SESSION II**	

19:00 – 21:00		**Wine & cheese cocktail with an oenologist**	

THURSDAY, JUNE 7

8:00 – 9:00		**PC & IAB meeting**	

9:00 – 10:50		**SESSION 11 : Nanomaterials III**	
		Chairman : V. Amendola	
	S11-1	D. Mukherjee	Nanocomposites and nanoalloys with engineered interfacial structures and functionalities made via Laser Ablation Synthesis in Solution (LASiS)-based routes
	S11-2	A. Popov *	Fabrication of organic solvent and surfactant free fluorescent organic nanoparticles by laser ablation of aggregation-induced enhanced emission dyes
	S11-3	B. Gökce	Laser Synthesis of Nanocomposites for Additive Manufacturing
	S11-4	L. D'Urso	Hybrid nanostructures of metal/one-dimensional carbon allotropes prepared by laser ablation in liquid

	S11-5	C. Rehbock	The internal phase structure of LAL-fabricated FeAu alloy nanoparticles is determined by solvent properties and target composition
10:50 – 11:10	**COFFEE BREAK**		
11:10 – 12:00	**CLOSING REMARKS & STUDENT AWARDS CEREMONY**		
	LUNCH BOXES		

POSTER SESSION I, Monday, June 4

* STUDENT Flash talks for posters : #

P-I- 1	H.	Liu	Temporal and spatial diagnosis for laser ablation on silicon carbide in water	1
P-I- 2	A.	Nastulyavichus *	Antibacterial Se and Si nanoparticles	2
P-I- 3	A.	Schielke *	Laser-generated gold nanoparticle nano-bio-conjugates featuring cationic ligands for biomedical diagnostics and therapy	3
P-I- 4	I.	Trenque	Synthesis routes of CeO_2 nanoparticles dedicated to organophosphorus degradation: a benchmark	4
P-I- 5	F.	Waag *	Continuous laser fragmentation of colloidal particles: improving the process control and efficiency	5
P-I- 6	M.	Chen	Wavelength dependent electron temperature distribution in plasma produced by laser ablation in the water	6
P-I- 7	R.	Streubel *	Exploring the origin of bimodal size distribution during picosecond laser ablation in liquids	7
P-I- 8	A.	Singh *	Pulsed laser ablation in supercritical CO_2 to synthesize Ti_xO_y nanoparticles	8
P-I- 9	T.	Nakamura	Effect of Irradiation Time on Crystalline Structure of Silver Submicron Spherical Particles by Pulsed Laser Melting in Liquid	9
P-I- 10	I.	Saraeva *	Milligram per second femtosecond laser generation of functional Se nanoparticles	10
P-I- 11	R.	Kuroda *	Surface Modification of Metal and Alloy Nanoparticles Fabricated by Laser-Induced Nucleation in Liquid	11
P-I- 12	M.	Labusch *	Automated focus adjustment for a high particle productivity rate by PLAL	12
P-I- 13	S.	Kohsakowski *	A continuous and contamination-free process chain produces monodisperse, laser-synthesized heterogeneous co-catalysts	13
P-I- 14	M.R.	Kalus *	Influence of persistent microbubbles on nanoparticle productivity in laser synthesis of colloids	14
P-I- 15	R.	Torres-Mendieta	Single-stage formation of Ag nanoparticles on α-Ag_2WO_4 network by femtosecond laser irradiation	15
P-I- 16	M.	Zhilnikova *	Laser-assisted generation of elongated Au nanoparticles and subsequent dynamics of their morphology under pulsed irradiation in water	16
P-I- 17	J.	Tang *	MoS_2 quantum dots synthesized by pulsed laser ablation in a binary liquid	17
P-I- 18	J.	Johny *	Effects of ablation energy and time on SnS_2 nanoparticles by pulsed laser ablation in liquid	18
P-I- 19	G.	Laurens *	Surface Chemistry Of Colloidal Ligand-Free Gold Nanoparticles Generated By Laser Ablation	19
P-I- 20	A.	Chemin *	Doping inclusion in nanoparticles using pulsed laser ablation in liquid	20

P-I- 21	B.	Chandu *	Graphene Quantum Dots, Microstructures Fabricated using Femtosecond Laser Ablation in liquids	21
P-I- 22	I.	Baymler *	Hydrogen generation by laser irradiation of organic liquids	
P-I- 23	S.	Aksoy	Fabrication of metal nanoparticles and nanoalloys by laser ablation in liquis	

POSTER SESSION II, Wednesday, June 5

* STUDENT

P-II-	1	S.	Kulinich	Gas Sensing by Laser-Ablated Nanomaterials
P-II-	2	M.	Dell'Aglio	Interaction of AgNPs produced by PLAL with human proteins and protein corona assessment
P-II-	3	L.	Escobar-Alarcon	Hydrogen production by ultrasound assisted liquid laser ablation of an Al-Mg alloy in water
P-II-	4	Y. K.	Kim	Stable colloidal suspension of TiO_2 nanoparticles in aqueous solution prepared by nanosecond laser pulses and their photocatalytic performances
P-II-	5	S. H.	Lee *	Improved photocatalytic activity of Au-doped Au@ZnO core-shell flower shaped nanocomposites
P-II-	6	V. A.	Zuñiga-Ibarra *	Synthesis and characterization of black TiO_2 nanoparticles by pulsed laser ablation in liquid for photocatalysis
P-II-	7	J.	Liu	Laser Ablation in Liquids Induced Ni/rGO Catalysts with Ultrahigh Electrocatalytic Activity and Stability in Methanol Oxidation
P-II-	8	M.	Condorelli *	Plasmon sensing properties of laser prepared noble metal colloids
P-II-	9	D.	Chen	Laser fabrication and temperature dependent upconversion properties of Gd_2O_3:Yb^{3+}, Ho^{3+} nanoparticles
P-II-	10	C.	Zhang *	Laser-induced Au Nanoparticles Encapsulated in Ultrathin Carbon Shells as Excellent Bifunctional Electrocatalysts
P-II-	11	T.	Itina	Possible mechanisms of bimetallic nanoparticle formation by laser co-ablation of liquid colloids
P-II-	12	S.J.	Lee *	Solvent as a Carbon and Nitrogen Source for Graphitic Carbon and Nitrogen-doped Graphitic Carbon Shells on Nickel Nanoparticles
P-II-	13	S.	Kudryashov	Laser-ablative fabrication of hybrid Se@Au, Si@Au/Ag nanoparticles via heterogeneous condensation
P-II-	14	T.	Asahi	Laser Fabrication of Organic Nanoparticle Colloids Having Strong Near-Infrared Absorption
P-II-	15	M.	John *	Optimizing the catalytic activity of Pulsed Laser Ablation Surface-Mediated Excitation and Reduction (PLASMER) synthesized metal-silica nanocomposites
P-II-	16	S.	Siebeneicher *	A Study on the Origin of Oxygen in Particles Synthesized by Laser Ablation in Liquids
P-II-	17	Y.	Ishikawa	An Approach for High-Yield Submicrometer Spherical Particles by Pulsed Laser Melting in Liquid
P-II-	18	S.	Sakaki *	Influence of Picosecond Laser Irradiation on Synthesis of Spherical Particles by Pulsed Laser Melting in Liquid
P-II-	19	G.	Shafeev	Influence of external magnetic field on the morphology of Au nanoparticles obtained by laser ablation in water
P-II-	20	N.	Tarasenka	Laser Assisted Formation of Immiscible Alloy Nanoparticles in Liquids

P-II-	21	V.	Svetlichnyi	Comparison of Magnetite Nanoparticles Obtained by Pulsed Laser Ablation in Water and Air
P-II-	22	D.	Goncharova *	Structure of nanoparticles from colloids obtained by pulsed laser ablation of copper in a liquid
P-II-	23	A.	Nastulyavichus *	Scaling relationships for film-to-nanoparticles conversion during nanosecond laser ablation of silver films of variable thickness
P-II-	24	L.	D'Urso	Photo-catalytic activity of ZnO nanostructures obtained by micromachining a high purity Zn target with a picosecond pulsed laser
P-II-	25	I.	Saraeva *	Femto/picosecond pulsewidth-dependent yield of metal and Si nanoparticles
P-II-	26	R.	Soni	Plasmonic and Magnetic Nanocomposites
P-II-	27	D.	Popovic	The Luminescence of Silicon-based Nanoparticles Produced by Laser Ablation in Liquid

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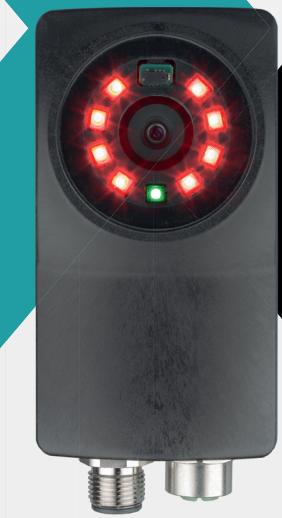

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