



*Conference Program*



## *Locations/ Localisation des lieux et adresses*



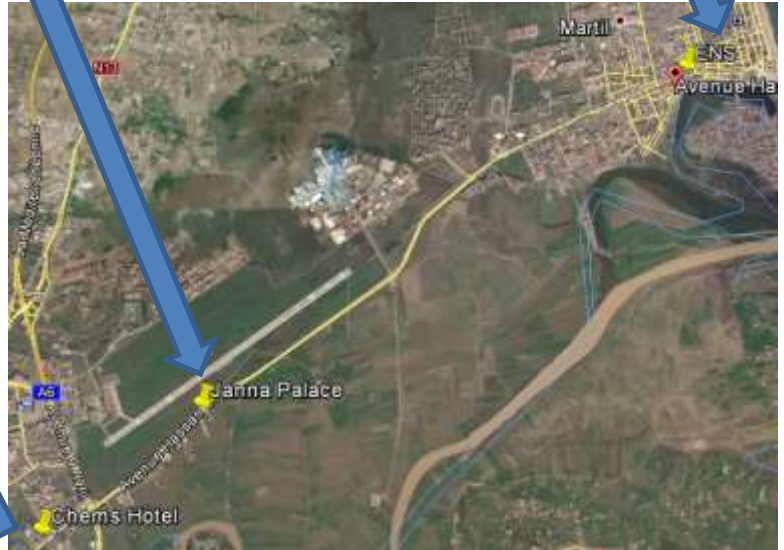
Palais Janna Palace : Lieu de la conférence  
3, Route de Martil- Tétouan ; 93002 Maroc



Ecole Normale Supérieure de Tétouan  
Avenue Hassan II, Martil



The way :  
Palais Janna Palace-Hôtel Chams de Tétouan



A shuttle is available from hotels to conference location (Janna Palace) on 19 at 8h00 and at 8h30 on the other days.

La navette sera assurée des hôtels vers le lieu de la conférence (Janna Palace) le mardi 19 Mai 2015 à 8h et les autres jours à 8h30.

# Welcome

ENS Cachan- ENS Martil and the University of Lorraine are pleased to run the 2015 International Conference on Materials & Energy (ICOME'15) in the beautiful city of Tétouan in Morocco. ICOME'15 host Energy & the City of the Futur (EVF) symposium chaired by the EPMI Cergy Pontoise.

Natural coupling materials and energy is a strong point of this event. This is an interconnected topics with very second "elds of application in our modern societies.

The inter-Mediterranean link is also an important fact of this international conference and will allow a better Sud/North mixture allowing to share innovation and sustainable development.

The conference chairs hopes that everyone will found in this meeting an important topical interest, a great pleasure on exchanging with the both community of materials and energy ...

## ICOME'15 CHAIRS

Prof. R Bennacer  
ENS Cachan



Prof. M. El Ganaoui  
University of Lorraine



Prof. A. Mimet  
Abdelmalek Essaadi University



Dr. M. Darcherif  
EPMI, EVF Chair



# International Conference on MATERIALS & ENERGY May 19-22, 2015 Tetouan, Morocco

Topical summer School Program 17-18 May 2015 (see website)

## CONFERENCE PROGRAM



Monday 18 May 2015	Possible Registration (16h00-20h00, Normale High School)											
	8:00	9:00	9:30	10:30	11:20	12:20	13:45	14:40	15:30	16:25	17:15	
<b>Tuesday 19 May 2015</b>	Registration	Opening	<b>Key_n 1</b> Prof. J-C Bernède Chairs :Pr. M. El Ganaoui	<b>CB S1</b>	<b>Key_n 2</b> Dir. B. Ikken Chairs :Pr. A. Mimet	Lunch Registration	<b>Key_n 3</b> Prof. C. Menezo Chairs :Pr. R. Bennacer	<b>CB S2</b>	<b>Key_n 4</b> Prof.R. Castaneda Chairs :Pr. M. Addou	<b>S3</b>		
<i>Location Congress Palace</i>												
<b>Wednesday 20 May 2015</b>	<b>Key_n 5</b> Prof. J-M Nunzi Chairs: Pr. H. Sammouda	<b>CB S4</b>	<b>Key_n 6</b> Prof. Perré Patrick Chairs :Dr. Mme F. Charrier	<b>S5</b>	Registration	<b>Key_n 7</b> Dir. Kh. Benhamou Chairs :Pr. M. Hasnaoui	<b>CB S6</b>	<b>Key_n 8</b> Prof. D. Bartout Chairs : Dr. A. Di Sano	Commissions & Specific meetings			
<i>Location Congress Palace</i>					<i>Location Congress Palace</i>							
<b>Thursday 21 May 2015</b>	<b>Key_n 9</b> Prof. F. El Bouhtoury Chairs :	<b>EVF_Round table</b> Key_n 10/11: J. Bertucci / M. Darcherif followed by EVF Posters			<b>Lunch</b>	<b>Key_n 12</b> Prof. D. Bassir Chairs :Dr. M. Darcherif	<b>EVF&amp;</b> Commissions, Specific meetings (CS, Averroès award ...)					
<i>Location CCI</i>						<i>Location CCI</i>						
<b>Friday 22 May 2015</b>	<b>Key_n 13</b> Prof. A. Coronas Chairs :	<b>CB S7</b>	<b>Key_n 14</b> Prof. G. Slimane Chairs :	<b>S8</b>		<b>Discussions</b> <i>14:00 / 15:00 Closing</i>						
<i>Location Congress Palace</i>												

**MATERIALS ENERGY**

Medina & harbor visit Followed by the Banquet



Visit of Chefchawen city



**Key\_n** : keynotes

**S** : session

**CB** : Coffee break



**EVF**: Ville du Future (Energy and city of the future)

## International Conference on MATERIALS & ENERGY May 19-22, 2015 Tetouan, Morocco

The different sessions are referring to paper ID :

<b>TUESDAY 19 MAY</b>	<b>S1:</b> 1, 2, 3, 4, 6, 7, 9, 12, 13, 16, 20, 23, 27, 28, 29, 30, 34, 44, 46, 56, 63, 95, 160, 291 <b>Chairs :</b> Pr. M. Taqī-S. Gabsi	<b>S2:</b> 14, 15, 18, 24, 25, 26, 39, 45, 47, 51, 52, 53, 55, 59, 60, 61, 64, 69, 71, 79, 86, 110, 158, 214 <b>Chairs :</b> Pr. H. El Qarnia– Pr.	<b>S3:</b> 32, 35, 38, 58, 66, 70, 72, 73, 74, 76, 77, 78, 89, 96, 100, 101, 103, 105, 122, 138, 165, 173, 265 <b>Chairs :</b> Pr. - Pr. M. Diani
<b>WEDNESDAY 20 MAY</b>	<b>S4:</b> 82, 84, 90, 97, 99, 106, 114, 116, 123, 124, 127, 130, 134, 144, 145, 146, 149, 153, 155, 174, 181, 184, 199, 277 <b>Chairs Pr Mme T. Barradi-Pr. Zorkani</b>	<b>S5:</b> 109, 112, 113, 128, 131, 154, 156, 157, 163, 168, 179, 187, 189, 194, 195, 196, 198, 201, 221, 234, 246, 249, 254, 267. <b>Chairs :</b> Pr.M. El Omari-Mme K. Bouhelal	<b>S6:</b> 121, 137, 142, 150, 151, 162, 193, 202, 203, 207, 208, 209, 224, 227, 231, 233, 237, 241, 242, 262, 272, 273 <b>Chairs:</b> Dr.R. Djedjig-D.Zejli
<b>TUESDAY 21 MAY</b>	<i>EVF</i> <b>EVF Chair :Dr M. Darcherif</b> <b>Honorary Chair : President of CCIST Mr Abdelatif Afailal</b> <b>Sessions Chairs : Dr. K. Labadi, A. Scipioni</b>		
<b>FRIDAY 22 MAY</b>	<b>S7:</b> 172, 177, 183, 206, 215, 219, 220, 222, 243, 247, 253, 255, 256, 258, 259, 260, 264, 271, 274, 275, 279, 290, 297, 298 <b>Chairs :</b> Pr. A. El Bouardi- Pr. D. Sifaoui	<b>S8:</b> 223, 229, 230, 257, 263, 268, 270, 276, 278, 281, 282, 283, 284, 287, 289, 293, 294, 295, 296, 299, 304, 305 <b>Chairs :Pr. M. Zazoui –Pr.. M. Kadja-</b>	



The following senior scientists and engineers are accepted our invitation and they will deliver keynote talks (we would like to express our thanks to their effort in delighting us with their valuable experiences and thoughts).

### Keynote Speakers:

- Key\_n 1. Prof. Bernède Jean-Christian, Small molecule organic semiconductors for future photovoltaic energy
- Key\_n 2. Dir. IkkenBadr, IBN GRIR Experimental Salar Platform
- Key\_n 3. Prof. Menezo Christophe, IBN GRIR Experimental Salar Platform
- Key\_n 4. Prof. Castaneda Raphael, Renewable energy application to reduce the energy requirements in aquiculture plants
- Key\_n 5. Dr. Nunzi Jan-Michel, A technology for ultimate efficiency solar cells
- Key\_n 6. Prof. Perré Patrick, Biomass and Biomaterials strategic and Sustainable approach
- Key\_n 7. Dir. Benhamou Khalid, North Africa's key asset in the world's global energy transition
- Key\_n 8. Prof. Dr. Ing. Bartout Driss, Innovative Joining and Coating Technology for Energy and Automotive Industry
- Key\_n 9. Prof. El Bouhtoury-Fatima Charrier, Eco-Innovation and Energy Challenges
- Key\_n 10. J. Bertucci, EVF: Cadastre énergétique et ville du futur
- Key\_n 11. M. Darcherif, EVF: Quelques réflexions sur la ville à l'horizon 2050
- Key\_n 12. Prof. Bassir David, Towards sustainable biopolymer composites
- Key\_n 13. Prof. Coronas Alberto, Combined Absorption Power and Refrigeration Systems Driven by Thermal Energy Sources
- Key\_n 14. Prof. Gabsi Slimane, Solar Energy and cooling systems by sorption

### Main Topics

1. *Renewable Energy (wind energy / Conversion)*
2. *Materials in energy (Innovative materials / Process)*
3. *Building efficiency (systemic approach / RnE integration)*
4. *Energy in Materials (Conversion optimisation, PCM ..)*
5. *Couplings*

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*ICOME 15 & City of the future*

9h00 – 9h55	10h- 9h15	10h-12h20	12h20-13h45	13h45 – 14h40	14h40 –17h15
Accueil // ICOME Key // Registration	<b>Mot d'Ouverture EVF'2015</b>	<b><u>Plénières</u> <u>Tables Ronde</u> <u>Contributions</u></b>	Déjeuner CCI	<b><u>Plénière commune ICOME 15</u></b>	<b>Accords/dating be to be/Coopération...</b>
<i>Location CCI</i>					



*Visit of Chefchawen city*

## **CONTRIBUTIONS**

Paper ID	Title	First/Corresponding Author
1	<i>Identification of beam cracks by solution of an inverse problem</i>	Teidj Sara
2	<i>Seismic assessment of the masonry infill – concrete frame interaction</i>	Sabri Attajkani
3	<i>Inverse problem solution for delamination detection in composite plates</i>	Fadoua El Khannoussi
4	<i>Solution of 1d elastic-hydrodynamics-erosion coupled equations in porous media</i>	Fatima Yakhlef,
6	<i>Assessing the effect of slope on the development of the thermal plume during a tunnel fire</i>	Hajar Chaara,
7	<i>Modelling an eddy-current probe for damage detection of surface cracks in metallic parts</i>	Abdeslam Aoukili
9	<i>Bayesian multiple forces reconstruction during impact with uncertain time transfer matrix</i>	Samagassi Souleymane,
12	<i>Analysis of a rbf neural network based controller for pitch angle of variable-speed wind turbines</i>	El Kabira El Mjabber
13	<i>Mechanical coupled vibrations in chirality defined double walled carbon nanotubes</i>	Mourad Boutahir
14	<i>Calculation of raman-active modes in boron nitride peapods</i>	Fakrach Brahim
15	<i>Tight-binding model for phosphorene, phosphorus nanoribbons and nanotubes</i>	Mustapha Driouech
16	<i>Evaluation of wind potential and estimated production of wind energy in of tetouan</i>	Ayoub Sadouk
18	<i>Vibrational properties of bnnt@cnt double-walled nanotubes</i>	Rahmani Abdelhai
20	<i>Assessing yield of an active solar still for seawater desalination</i>	Abdellatif Khamlichi
23	<i>Comparison of different methods of control ray hybrid aspherical lenses.</i>	Toufik Aliouane
24	<i>Raman spectra of boron doped single-walled carbon nanotube</i>	Abderrahim Elbiyaali
25	<i>Vibrational properties of nitrogen doped carbon nanotubes</i>	Fatimaezzahrae Allali
26	<i>Practical tribometer to estimate pumpability of fresh concrete and boundary layer composition</i>	El-Hadj Kadri
27	<i>Study on the energy and damage behavior of a black polymeric film. Application to the devices of greenhouse effect</i>	Nassim Baba Ahmed
28	<i>Numerical study of mixed convection heat transfer with an oriented confined jet in a porous channel</i>	Azzedine Abdedou
29	<i>Optimisation des méthodes de maintenance pour améliorer le rendement des systèmes industriels.</i>	Zakaria Bouzoubaa
30	<i>Effect of fiber alfa on thermophysical characteristics of a material based on clay</i>	Yassine El Hamdouni
32	<i>Thermography diagnostic of prototype habitat in northern morocco</i>	Zakaria Choulli
34	<i>Numerical study of the influence of znTe thickness on cds/znte solar cell performances</i>	Othmane Skhouni,
35	<i>The convective solar drying behavior of thymus satureioides preserved by thermobiochemical treatment</i>	Lamyae Lahnine
38	<i>Towards a better energetic efficiency in the use of urban multi-source systems: Application to a campus building</i>	M. Alanfah
39	<i>Evaluation du champ éolien dans la région d'annaba par une analyse aérodynamique pour l'installation d'une petite éolienne</i>	Benretem Abdelouahab
44	<i>Simulation of premixed jets of hydrogen-air in opposed-jets configuration.</i>	Kheireddine Choual
45	<i>Moisture sorption isotherms and modeling of sorption of moroccan rosemary leaves</i>	Safa Mghazli
46	<i>Heat storage potential of the fluidized bed technology: hydrodynamics and thermal analysis</i>	Nadjiba Mahfoudi
47	<i>Etat de l'art de la filière bioclimatique en france et sa portabilité au maroc</i>	Mohamed Ameer
51	<i>Thermal behaviour of paraffin slurry in a vertical plane plate heat</i>	Mohamed Najib El

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	<i>exchanger</i>	Boujaddaini
52	<i>Toward an evolutionary multicriteria model for analysis and estimation of wind potential</i>	Fouad Amri
53	<i>Choosing a multilevel inverter for integration on a hybrid wind-solar power station</i>	TajeddineKhalili
55	<i>Sensor faults detection and estimation for a dfig equipped wide turbine</i>	Samir Abdelmalek
56	<i>Wind farm feasibility study and its impact on the environment in algerian highland region of tiaret</i>	MiloudBenmedjahed
58	<i>Calcul du cout et optimisation du dimensionnement d'une installation photovoltaïque autonome basee sur le concept d'utilisabilite horaire. Application atlemcen, algerie</i>	ZakariaBouzid
59	<i>Thermal impact study of a bio-based wall combined with an inner pcm layer</i>	YassineKharbouch
60	<i>Comparaison of synthesis routes of winds turbine lubricant additives based on mos2 nanoparticles</i>	Tarik Chafik
61	<i>Design and devolepment of a solar refrigerator based on solid adsorption (activated carbon/ammonia) cycle</i>	HichamBoushaba
63	<i>Conception et construction d'une eolienne synchrone</i>	Lahda Mohamed
64	<i>Improvement of the availabiliy of the dfig wind turbines during voltage dip with crowbar circuit</i>	Lahda Mohamed
66	<i>Natural convection flow in a rectangular enclosure under a vertical magnetic field</i>	Ines Baaziz
69	<i>A montecarlo study of the spin-1 blume-emery-griffiths phase diagrams within biquadratic exchange anisotropy</i>	Dani Ibtissam
70	<i>Paper waste recycled by the elaboration of a biodegradable plastic: the cellulose acetate</i>	FatimazahraBeraich
71	<i>Microstructural aspects of displacive transitions in shape memory alloys</i>	Osman Adiguzel
72	<i>Evaluation of energy efficiency potential for building in morocco: application to the social housing zone (z2) of tangier-tetuan region</i>	MeriemLebied
73	<i>A computational work on turbulent flow and heat transfer in a channel fitted with corrugated baffles</i>	YounesMenni
74	<i>The numerical simulation of permeability for fibrous reinforcement composite by inverse method</i>	AouatifSaad
76	<i>Solid-state structures and properties of scandium hydride; hydrogen storage application</i>	KhadidjaKhodja
77	<i>Heating and cooling power demand of residential building with diffirent envelope design under moroccan conditions</i>	HichamBidaoui
78	<i>Numerical study of a cold storage system for air cooling</i>	Laila Khatra
79	<i>Modeling heat-moisture transfer through a cylindro-parabolic system of drying phosphate process</i>	MouradNachtane
82	<i>Thermal behavior of air solar collector with rectangular perforated baffles</i>	Henaoui Mustapha
84	<i>A mcrt with cuda parallel computing in the ptc</i>	Abdellah Aittaleb
86	<i>Electronic properties study of lixtio2 ramsdellite</i>	Jamal Sayah
89	<i>Numerical simulation of flow with obstacles by the k-<math>\omega</math>st turbulence model</i>	Bensenouci Djamel
90	<i>Modelisationnumerique d'un lit adsorbant utilisant le charbon actif/ methanol comme couple de travail</i>	Abdelghani Hamdi
95	<i>Influence of aspect ratio on the natural convection and entropy generation in rectangular cavities with wavy-wall</i>	Souad Morsli
96	<i>Dessalement au moyen des energies renouvelables : une solution pour la problematiquedepenurie d'eau dans les regionsmediterraneennes</i>	Dennoun Saifaoui
97	<i>Simulation and realization of a dc-dc boost converter controlled by microcontroller</i>	JbilouMokhtaria
99	<i>Effect of cylindrical fuel assemblies' arrangement on the heat and mass transfer into a square porous media</i>	Karim Ragui
100	<i>Three-dimensional fluid flow simulation into a rectangular channel including partitions using the lattice-boltzmann method</i>	Abdelkader Boutraa
101	<i>Estimation of porosity, thermal conductivity and density of volubilis building stones from p-wave velocity</i>	Issam Aalil



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103	<i>Evaluation of the performances of an air refrigeration system coupled with a parabolic trough solar collector</i>	Boussad Boumeddane
105	<i>Description thermodynamique du systemeco-sc</i>	Houda Ghamri
106	<i>Numerical study of a solar system «storage - capturing»</i>	Sichaib Amel
109	<i>Study of a new pcm composite for energy storage by latent heat</i>	Dihia Djefel
110	<i>Evaluation de l'efficaciteenergetique des regions marocaines et choix d'indicateurs de performances energetiques</i>	Najwa El Moutez
112	<i>Study of production and storage of solar cooling through phase change materials (pcm): application for buildings</i>	Habib Sammouda
113	<i>Optimal maintenance of the electric motors to improve the energy efficiency</i>	Mohamed Kaddari
114	<i>A study of incident angle modifier in linear fresnel reflector</i>	Youssef Elmaanaoui
116	<i>Estimation global solar radiation and modeling photovoltaic module based on artificial neural networks</i>	Lalia Miloudi
121	<i>Contribution à la purification du phosphogypse marocain : cas des activateurs à base de sel d'aluminium</i>	Nasrellah Hamid
122	<i>Organic photovoltaic cells: fabrication and processing</i>	Imane Barrijal
123	<i>Application of multilayer perceptron for prediction of the rat acute toxicity of insecticides</i>	MabroukHamadache
124	<i>Chemical preparation, crystallographic characterization, vibrational study and thermal behavior of a new cyclotriphosphatemn(nh4)4(p3o9)2.6h2o superphosphate fertilizer</i>	Belaouad Said
127	<i>Improvement of pentathiophene/fullerene planar heterojunction organic photovoltaic cells through moo3/cui anode buffer bilayer.</i>	Zouhair El Jouad
128	<i>Modeling and optimization of distillation to produce bioethanol</i>	Ahmed Tgarguifa
130	<i>A general fractional-order heat transfer model for photovoltaic/thermal (pvt) hybrid systems and its observer design</i>	Lahoucine Ouhsaine
131	<i>Moisture sorption isotherm and drying kinetic of mirabelle plum stones</i>	Souad Messai
134	<i>Modeling and fatigue damage evolution of composite materials under cyclic loading</i>	Walid Roundi
137	<i>Design and simulation of dual-band rf energy harvesting antenna for wsns</i>	Asma Bakkali
138	<i>Thermodynamicalproperties of rosemary</i>	Safa Mghazli
142	<i>Modeling of the stabilization column in the petroleum refinery</i>	Souad Abderafi
144	<i>Analysis of a thermal system by contact for defect detection in homogeneous materials</i>	Ahmed Kabouri
145	<i>Drivetrain flexibility of wind turbine effect on control performance</i>	Mohamed Tahiri
146	<i>Contribution to summer comfort by floor cooling in ecological house pilot</i>	Nafissa Belkacem
149	<i>Refroidissement par convection forcee turbulente des blocs chauffes dans un canal horizontal (comparaison des modeles de turbulences)</i>	Khaled Bourezg
150	<i>Kinetic study of amoxicillin removal from wastewater using wheat grain</i>	Asmaa Boukhelkhal
151	<i>Experimental study of sensible heat storage in a nanofluid enclosed between concentric annular tubes</i>	Latifa El-Kaddadi
153	<i>Thermodynamic analysis of the use of combined csp for desalination in algeria</i>	Mohamed Laissaoui
154	<i>Copper : molybdenum sub-oxide blend as transparent conductive electrode (tce) indium free.</i>	Mehdi Hssein
155	<i>Cloud albedo and aerosol single scattering albedo for mediterranean areas</i>	Ibtissam Marsli
156	<i>Cold sprayed copper coating: numerical study of particle impact and coating characterization</i>	Yamina Mebdoua
157	<i>Thermal setup for energy measurement techniques in electrical systems.</i>	Hamdaoui Raouf
158	<i>Unsteady heating of spheroidal particle in plasma spraying process</i>	Yacine Hamza
160	<i>Numerical study of the melting of nano-pcm in a rectangular enclosure heated by downward heat transfer fluid</i>	Radouane Elbahjaoui
162	<i>Experimental study of the effect of injecting heated air in different position in a new desalination system by hdh process, using solar energy</i>	Sara Ladouy
163	<i>A markovian process for the matching problem</i>	Khalid Hati
165	<i>Design of substratintegerated waveguide bandpass filter based on metamaterials csrrs</i>	Ahmed Rhbanou

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168	<i>Statistical modeling of energy consumption in the pretreatment of industrial wastewater by electrochemical process</i>	Mohamed Tir
172	<i>Etude numerique du transfert de chaleur par convection mixte dans un canal vertical chauffee par un flux uniforme</i>	Khaled Bourezg
173	<i>Release study of oxytetracycline from chitosan/hydroxyapatite composites</i>	MaachouHamida
174	<i>Kinetic study of active substance release from pectin beads</i>	Yamina Zouambia
177	<i>Simulation of a rotating membrane disk using computational fluid dynamics</i>	Soufiane Ladeg
179	<i>Solar domestic water heating system in six moroccan climate zones</i>	Ibtissam Fellak
181	<i>Energetic aspects of bioclimatic building in the north of morocco : computationel analysis</i>	Najat Lamkharouet
183	<i>Etude expérimentale de l'énergie stockée dans un mcp inséré sur le toit d'un local soumis aux conditions météorologique de casablanca</i>	Yassine Bouzlou
184	<i>Thermal behaviour in dynamic regime of a multilayer roof provided with two phase change materials in the case of a local conditioned</i>	Nisrine Hanchi
187	<i>Identification and characterization of mechanical and structural properties against static damage of a composite floating wind turbine blade</i>	Mostapha Tarfaoui
189	<i>Mechanical and durability properties of precast concrete based on treated river sediments</i>	Amor Ben Fraj
193	<i>Traitement de la vinasse issu des distilleries par la biométhanisation</i>	El Azhar Maryem
194	<i>Flow numerical simulation in a cross flow turbine in bidirectional operation for wave energy conversion</i>	Abdellatif El Marjani
195	<i>Estimation of solar radiation and sizing method of an autonomous photovoltaic system. Application to algeria</i>	Zakaria Bouzid
196	<i>Flow analysis in three-dimensional double-diffusive convection in an elongated porous enclosure</i>	Omar Rahli
198	<i>Innovating device for characterizing the mechanical properties of metals based on an electromagnetic sensor</i>	Zakaryae Ezzouine
201	<i>Etude du comportement hygrothermique du bois d'eucalyptus camaldulensisdehn algérien et modélisation</i>	Tazrout Mansour
202	<i>Kinetic study and optimization of extraction process conditions</i>	Sarah Rezazi
203	<i>Lean construction, un anneau dans la chaine de l'évolution de la gestion de projets de construction</i>	Habchi Hicham
206	<i>Misaligned porous journal bearings lubrication analysis by including the thermal effects</i>	Boubendir Sid Ali
207	<i>Fluid flow in the melt during the welding sequence gtaw</i>	Benzerga Mohammed
208	<i>A batteryless temperature sensor based on plzt material</i>	Asma Bakkali
209	<i>Effect of hipco single walled carbon nanotube (swcnt) on the thermal stability and structure of the poly(3 hexyl thiophene) p3ht/swcntnanocomposite</i>	Anass Bakour
214	<i>Effect of cds buffer layer on the efficiency of cu(in,ga)se2 solar cells</i>	Selma Mostefa Kara
215	<i>High-temperature properties investigation of the high nitrogen stainless steel</i>	GennadiiSapozhnikov
219	<i>Experimental study of thermal behaviour of two cavities 'test' with and without pcm on the roof</i>	Amina Mourid
220	<i>Blade rotor design optimzation of a self-rectifying air turbine for owc devices by numerical experimental design methode</i>	Elatife Khalid
221	<i>A study of the effect of window on energy consumption during winter and summer season in an office building</i>	Kaoutar Jraida
222	<i>Numerical study of the thermal behavior of a novel composite pcm/concrete wall</i>	Mustapha Faraji
223	<i>On the shoreline wave energy potential and its conversion in morocco</i>	HafsaBouhrim
224	<i>Optical properties of undoped and tin-doped nanostructured in2o3 thin films deposited by spray pyrolysis</i>	Nabil Fellahi
227	<i>Investigation on magnetic refrigeration of fe80-xvxb12si8 (x=8, 10 and 13.7) amorphous alloys</i>	A Boutahar
229	<i>Hard and soft method of dc overvoltage control for three-phase pv inverter connected to lv grid</i>	Mohamed Dharif

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230	<i>Numerical study of natural convection in a nano-fluid filled enclosure with two squares</i>	Aniss Azzabakh
231	<i>Computational study of the evaporative cooling of falling binary liquid film inside a vertical channel</i>	Hicham Meftah
233	<i>The computational study of thermal stress of the cdznte 's semi-conducteur :the growth of cdznte in the bridgman configuration</i>	Hanen Jamai
234	<i>Optimization of thermal performance of a building integrating solar collector with phase change material</i>	Zineb Bouhssine
237	<i>Kinetic study of lead alloys for battery grids</i>	Soukaina Saissi
241	<i>Etude técnico-economique d'une centrale solaire à concentration de type fresnel, destinée à la production d'électricite</i>	Hani Beltagy
242	<i>Numerical study of nanofluid heat transfer al3o2 through a flat-plate solar collector with a constant temperature at the wall.</i>	Maouassi Ammar
243	<i>Higher performance of ecological biobased adhesives from acacia mollissima tannins used for bonding plywood.</i>	Naima Rhazi
246	<i>Optimizing insulation thickness of external walls in cold region of morocco based on life cycle cost analysis</i>	Rachida Idchabani
247	<i>Kinetics study of softening and hardening transformations of pbsbal alloys</i>	Kanza Marbouh
249	<i>The comparative in situ hygrothermal performance of straw-clay and vertically perforated clay bricks buildings</i>	Driss Samri
253	<i>Numerical study of the evaporation of a liquid film with a low nanoparticles volume fraction</i>	Monssif Najim
254	<i>Numerical study of humid air condensation in presence of non-condensable gas along an inclined channel</i>	Adil Charef
255	<i>Effect of the subdivision of a lozenge conducting body on natural convection inside a differentially heated square cavity using the lattice boltzmann method</i>	Abdelfattah El Mansouri
256	<i>Natural convection of al2o3-water and propylene glycol nanofluid in a three-dimensional cubic cavity</i>	Abdellatif Dayf
257	<i>Simultaneous heat and mass transfer by evaporation of a binary liquid film falling along a vertical plate</i>	Nait Alla Abderrahman
258	<i>Lattice-boltzmann modeling of mixed convection in a lid-driven square cavity filled with a nanofluid and containing a horizontal thin heater</i>	Youssef Dahani
259	<i>Lattice-boltzmann modeling of natural convection in a cavity with a vertical heated plate inside</i>	Mouhcine Alouah
260	<i>Effect of alcohol in the formullation of microemulsion</i>	Rahal Soufiane
262	<i>Thermal impact of aspect ratio and rayleigh number on heat transfer in a triangular roof for summer conditions</i>	Abdelillah Amrani
263	<i>Phase change materials for cooling and better air quality</i>	Nadia Martaj
264	<i>Modeling of mechanical properties of aluminum-tin alloys</i>	Sara Elhamzi
265	<i>Gradual band energy effects to passivate the window layer in solar cells</i>	Yamina Mir
267	<i>Lattice boltzmann modeling of the dissolution process of silicon into germanium using a simplified crystal growth technique</i>	Mechighel Farid
268	<i>Study of a sensible heat storage system &amp; feasibility study of selected materials</i>	Berrhazi Samir
270	<i>Alternative fuels impact of burning pomace on cement quality and process progressing</i>	Zakia Ngadi
271	<i>Identification and characterization of mechanical and structural properties against static damage of a composite floating wind turbine blade</i>	Mostapha Tarfaoui
272	<i>Study of the flows in mixed convection in an open channel in form « u » : application to the air cooling in the habitat in morocco</i>	Meryem Naoum
274	<i>Double diffusive natural convection in a bi-layeredporous enclosure</i>	Noureddine Hadidi
275	<i>Contribution to summer comfort by underfloor cooling in a bioclimatic ecohouse model</i>	Nefissa Belkacem
276	<i>Characterization of the durability of natural sio2 aggregates</i>	Elbakraoui El Hassan
277	<i>Comparative studies between the productivity pv of two cities in morocco and the city of nancy in france</i>	Safae M'Zerd

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<b>278</b>	<i>Exact solution of heat transfer in a shell-and-tube latent thermal energy storage system</i>	Bechiri Mohammed
<b>279</b>	<i>Drivetrain flexibility effect on control performance of a horizontal axis wind turbine</i>	Mohamed Tahiri
<b>281</b>	<i>Using matlab to develop artificial neural network models for forecasting global solar radiation in souss territory-morocco</i>	NaitMensour Omar
<b>282</b>	<i>Modeling and simulation of an autonomous pv generator of power 4,2 kw dedicated to supply an agricultural pumping station</i>	Bennacer El Hassouni
<b>287</b>	<i>Excitonic transitions in inhomogeneous qd – two levels system</i>	FaridBenhaddou
<b>289</b>	<i>Infrared thermography applied to detection of pipes and steel bars in a concrete wall</i>	El AfiMohames
<b>290</b>	<i>Mhd convection in a power law non-newtonian fluid saturating a darcy media</i>	CyrineChahtour
<b>291</b>	<i>Numerical simulation of the flow field analysis in the mixing twin jets</i>	Mustapha Boussoufi
<b>293</b>	<i>Physical incorporation of particles in a wooden porous substrate through a stream of nitrogen at high pressure and low temperature (jazolthop)</i>	AzzaZerriaa
<b>294</b>	<i>An example of feasibility study of eco materials production chain and bio-based products for eco-construction/renovation in the named great region (belgium, france, luxembourg)</i>	FaizaMnasri
<b>295</b>	<i>Structural and raman properties of the tetragonal tungsten bronze ferroelectric pbx-y/2gdyba1-xnb2o6</i>	LoubnaZerhouni
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<b>297</b>	<i>Evaluation et analyse statistique du potentiel eolien de la wilaya de tanger-tétouan</i>	Aziz Benaboud
<b>298</b>	<i>Cloud coverage estimation using ground based images and segmentation techniques</i>	Salah Moughyt
<b>299</b>	<i>New dual-axis solar tracker design based on a fisheye camera</i>	Zakaria El Jaouhari
<b>304</b>	<i>Nanomatériaux fabriqués pour générateurs des éoliennes</i>	M. Belaiche
<b>305</b>	<i>Développement des aimants permanents pour les générateurs des éoliennes</i>	M. Belaiche
<b>310</b>	<i>Integrated approach to modelling, simulation for strain gage measurement on turbine and reactor</i>	Ait El Haj Zouhir
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## International Conference on MATERIALS & ENERGY May 19-22, 2015 Tetouan, Morocco

**EVF 2015**

# Colloque EVF 2015

## "Energétique et Ville du futur"

Organisation  
**ECAM EPMI**

Date  
21 mai 2015

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### Foreword: Energy & the City of the future EVF International symposium in ICOME15

Magazines and the web are full of references to the city of the future. Through architectural freedom, city problems, geopolitical projections, sketches of the city of tomorrow already exist in our contemporary world with their realities and fantasies.

Whatever form cities will take, a vegetable city, connected towers, adorned with wind gardens, surrounded by photovoltaic farms ... Human realizes his happiness and well-being in terms of mobility, housing, health, recreation ... elements that must remain the outcomes of everyday life.

A simple trip to Asia or Africa today confirms that our reality is relative and evolves according to the new geopolitical picture of the world. Thinking has its place to converge to a balanced world and keep constant human development in its sociocultural environment.

Regardless the screening, Engineering, Human and Social Sciences and the interface between these fields will be determinant for the city to travel its way between realities and potentialities. Simultaneously driven by human evolution and architectural extrapolation, while meeting the constraints of energy resources and wastes related to the human machine and its environment.

The projection will swing between uncertainty, models and their predictions and hope into favorable technological innovations for weighting consumers' needs with planet resources. Bio and nanotechnology also fuel these hopes by giving us the necessary ingredients of a sustainable development.

The international EVF symposium is a place for expressing the dream, like a futuristic tower with a strong science base and a top in the clouds. The habitat and mobility will be entangled and sustainable tomorrow and they will feature prominently in this day, which we wish you fruitful and rich in exchanges and interactions.

### EVF serie's Chairs

*Prof. A. Moumen Darcherif, CEO of ECAM-EPMI*

*Prof. M. El Ganaoui, University of Lorraine*

*Prof. J.M. Nunzi, Queens University, Canada*

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<p><i>Table Ronde intégrant des interventions plénières</i></p> <p><i>Cadastre Energétique</i></p> <p><i>Ville &amp; Horizon 2015</i></p> <p><i>Interventions libres</i></p> <p>...</p>	Energie	contributions	Déchets	contributions
		Habitat		<ul style="list-style-type: none"> <li>[EFV_007] Z. BOUZID, N. GHELLAI «Potentiel solaire algérien et aperçu des installations photovoltaïques»</li> <li>[EFV_008] E.K HELLEL, S. HAMACI, A. ZIANI, « Modélisation des Systèmes Multisources d'énergies à base de Réseaux des Petri Stochastiques »</li> <li>[EFV_013] M.A.M MLADJAO, I. EL ABBASSI, C. FIGEA, and I. KANTE « Analyse économique pour le choix entre un système hybride et l'extension du réseau national pour une commune isolée au mali »</li> <li>[EFV_016] B. AMGHAR, I. EL ABBASSI, A.M. DARCHERIF, D. BOUKHETALA, « Commande décentralisée et supervisée par réseaux de Pétri des Micro-Grids »</li> <li>[EFV_017] A. EL HIMRI ABDELOUAHAD, Y. KARZAZI, K. HABOUBI, F.DIMANE, I. HANAFI, A. LAMHAMDI, M. EL HIMRI, PEDRO NUNEZ, « Hydrothermal precursor-based synthesis of nanopowder for solid oxide fuel cells technology to generate electrical power »</li> <li>[EFV_018] T. SELLAMI, H. BERRIRI, S. JELASSI, M.F. MIMOUNI, A.M. DARCHERIF « Diagnostic d'une génératrice asynchrone dans une éolienne à vitesse variable à base d'un observateur de court-circuit statorique ».</li> <li>[EFV_021]A. TERZIEV, R. VELICHKOVA « Numerical modeling of processes of transportation of flue gases carrying solid coal particles through the exhaust system of boiler».</li> <li>[EFV_022]Martin Ivanov « Human response to unorganized and spontaneous subjective assessment of the indoor environment parameters in small lecture room»</li> </ul>
	<ul style="list-style-type: none"> <li>[EFV_009] M. AMEUR, I. EL ABBASSI, A. MIMET, A.-M DARCHERIF « Etat de l'art de la filière bioclimatique en France et sa portabilité au Maroc »</li> <li>[EFV_012] A. AKROUCHE, M. BALISTROU, M. KARKRI, J-F DURASTANTI « Etude du stockage et déstockage d'énergie thermique dans un matériau a changement de phase ».</li> <li>[EFV_014] I. RAFIK, M. KHATTATI, H. MASMOUDI « La végétalisation des toitures pour une ville future : technique alternative pour la gestion de l'énergie et des eaux pluviales ».</li> <li>[EFV_015]R. SASPORTAS « Quasi-orthogonal sequences for low power wireless sensor using event based radio wake-up ».</li> <li>[EFV_023]H. BIDAQUI, I. EL ABBASSI, A. EL BOUARDI and A.-M. DARCHERIF « Optimization of grid connected, photovoltaic and wind turbine system for an office building north morocco ».</li> </ul>		Transport	<ul style="list-style-type: none"> <li>[EFV_024]B. AMGHAR, H. TAZEBINTE , D. BOUKHETALA , A.-M. DARCHERIF «Intelligent energy management and control for hybrid electric vehicle».</li> <li>[EFV_011]K. LABADI « Eco-Mobilité : Les Systèmes de Transport en Libre-Service »</li> <li>[EFV_019]M. UZUNOVA, V. STOYANOV, A. TERZIEV« Analysis of the impact of ventilation systems on air changes in underground garages in presence of fire »</li> </ul>

**International Conference on MATERIALS & ENERGY May 19-22, 2015 Tetouan, Morocco**

*ICOME 15 & Topical School*



**« Eco-Matériaux Energie et Construction Durable »**

**ECOLE THEMATIQUE A L'ICOME 15**

<http://enstetouanet.ma/icomaen15/index.php>



Eco-matériaux et construction durable réfèrent à une thématique essentielle à laquelle une attention particulière est portée pour relever les enjeux actuels et futurs de la transition énergétique et du développement durable. L'école spécialisée « Eco-Matériaux et Construction Durable » met la lumière sur les liens entre les thématiques liées à l'énergie et celles liées aux matériaux. L'école précédant le congrès international (ICOME15) se déroulera du 17 au 18 Mai sur le site de l'ENS Martil et permettra de faire le point sur les dernières avancées scientifiques dans le domaine.

L'école « Eco-Matériaux et Construction Durable » sera organisée sur deux journées d'étude et comporte une formation sous forme de cours magistraux, d'ateliers logiciels et de séminaires en soirée soulignant des avancées dans les thématiques abordées. Les intervenants sont des spécialistes internationaux dans les thématiques des énergies renouvelables, de la durabilité des matériaux et de l'énergétique du bâtiment.

La formation est principalement destinée aux Masters 2, aux ingénieurs en fin de cycle et aux doctorants. Elle est ouverte aux auditeurs libres sur inscription.

Contact : [ICOMaEn15@gmail.com](mailto:ICOMaEn15@gmail.com); [rabah.djedjig@univ-lorraine.fr](mailto:rabah.djedjig@univ-lorraine.fr)



**« Eco-Matériaux, Energie et Construction Durable »**

**ECOLE THEMATIQUE A L'ICOME 15**

Lieu : ENS Martil

Avenue Hassan II, Code Zip 93030, B.P : 209. Martil, Maroc

<b>DIMANCHE 17 MAI 2015</b>		<b>LUNDI 18 MAI 2015</b>	
10h15-10h30	Introduction de l'Ecole Thématique R. BENNACER, R. DJEDJIG, M. EL GANAOUI, A. MIMET	09h00-10h30	La recherche multiphasique autour du bâtiment (R. BENNACER, ENS Cachan, France)
Pause-Café			
10h30-12h00	Le chemin vers le doctorat (M. EL GANAOUI, Université de Lorraine, France)	10h30-12h00	A technology for ultimate efficiency solar cells (J-M. NUNZI, Queen's University, Canada)
Pause Déjeuner (libre)			
13h30-15h00	Énergie et enjeux énergétiques (M. LACROIX, Université de Sherbrooke, Canada)	13h30-15h00	Matériaux à changement de phase (MCP) et applications pratiques (H. EL QARNIA, Université de Cadi Ayyad, Maroc)
15h00-16h30	Biogaz une opportunité pour le développement durable (Tarik CHAFIK, Université Abdelmalek Essaâdi, Maroc)	15h00-16h30	Performances énergétiques et environnementales des enveloppes végétalisées (R. DJEDJIG, Université de Lorraine, France)
Pause-Café			
16h30-18h00	La voiture solaire électrique – Modèle construit à la FST de Tanger (A. BENABDELLA, Université Abdelmalek Essaâdi, Maroc)	16h30-18h00	Les procédés de projection thermique pour l'énergie (Y. MEBDOUA, CDTA, Algérie)
Temps libre et soirée scientifique			
21h00-22h00	Atelier Echanges et démonstrations par les doctorants pour les doctorants (logiciels)	21h00-22h00	Atelier Echanges et démonstrations par les doctorants pour les doctorants (logiciels)

Possibilités d'autres cours et séminaires lors de la semaine :

- Eco-Mobilité : Les Systèmes de Transport en Libre-Service (K. LABADI, ECAM-EPMI, France)
- Matériaux et indicateurs de durabilité pour de la construction optimisée (A. LOUKILI, Univ. de Nantes)
- La rhéologie et la comptabilité des matériaux cimentaires (H. KADRI, Université de Cergy-Pontoise, France)

Contact / Inscription : [rabah.djedjig@univ-lorraine.fr](mailto:rabah.djedjig@univ-lorraine.fr)

En cours de labélisation par les EDs de Lorraine et de Cachan





## **7 COME 15 & AWARD**



"الجهل يؤدي إلى الخوف, والخوف يؤدي إلى الكراهية و الكراهية تؤدي إلى العنف ". هذه هي المعادلة  
(ابن رشد, (1126-1198).

*L'ignorance conduit à la peur, la peur induit la haine et la haine conduit à la violence, Voilà l'équation*

*Ignorance leads to fear, fear induced hatred and hatred leads to violence. This is the equation*

*Ignorancia lleva al temor y miedo inducido por odio, odio conduce a la violencia, que es la ecuación*

**Averroès (1126-1198)**

Le lancement du prix Averroès aura lieu lors de cette conférence, et ambitionne à mettre en exergue un scientifique ou un décideur ayant contribué significativement au développement et à l'épanouissement de partenariats nord sud pérenne dans la durée, ayant conduit à la formation de jeunes.

Launching of Averroes prize will held at this conference, and aims to highlight a scientist or a decision maker who contributed significantly to the development and vitality of North South scientific partnership with results, training of young researchers going to scribing the action in a permanent way.

**International Conference on MATERIALS & ENERGY  
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**May 19-22,**

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