ADVANCES IN LASEROLOGY –
Selected papers of
LASER FLORENCE 2011
A Window on the Laser Medicine World

Firenze, Italy  4 – 5 November 2011

EDITOR
Leonardo Longo
Institute of Laser Medicine, Siena University
Firenze, Italy

ORGANIZED BY
I.A.L.M.S. - The International Academy for Laser Medicine and Surgery

SPONSORING ORGANIZATIONS
I.S.L.S.M. - The International Society of Laser Surgery and Medicine
W.F.L.S.M.S. - The World Federation of Laser Surgery and Medicine Societies
I.P.T.A. - The International Photo Therapy Association
I.L.M. - Institute Laser Medicine Florence

UNDER THE HIGH PATRONAGE OF
The President of Italian Republic
Italian Health Office
Provincia di Firenze
Florence Medical Association
Florence Convention Bureau
Lions Club Firenze Stibbert
Kiwanis Club of Tuscany
Editor

Leonardo Longo
International Academy for Laser Medicine and Surgery
Borgo Pinti, 57
I-50121 Firenze
Italy

E-mail: longo@dada.it
<table>
<thead>
<tr>
<th>Section</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface: Advances in Laserology - Selected Papers of Laser Florence 2011</td>
<td>Leonardo Longo</td>
<td>1</td>
</tr>
<tr>
<td>Scientific Committee and Sponsors</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Highlights of Laser Florence 2011</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Conference Program</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>PLENARY SESSION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regenerative photonic therapy: Review</td>
<td>Natasha Salansky and Norman Salansky</td>
<td>15</td>
</tr>
<tr>
<td><strong>LASER BIOMODULATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of visible light and metal oxide nano particles for pathogen inactivation</td>
<td>R. Lubart, A. Lipovski, and A. Gedanken</td>
<td>36</td>
</tr>
<tr>
<td>Evaluation of LED photobiomodulation on wound healing in hypothyroid and euthyroid rats</td>
<td>Gardênia Matos Paraguassú, Flávia Calo Aquino Xavier, Tânia Tavares Rodriguez, Maria José Pedreira Ramalho, Antônio Luiz Barbosa Pinheiro, and Luciana Maria Pedreira Ramalho</td>
<td>41</td>
</tr>
<tr>
<td>Evaluation of laser photobiomodulation on healing of bone defects grafted with bovine bone in diabetic rats</td>
<td>Gardênia Matos Paraguassú, Maíra Doria Martinez da Costa Lino, Fabíola Bastos de Carvalho, Maria Cristina Cangussu, Antônio Luiz Barbosa Pinheiro, and Luciana Maria Pedreira Ramalho</td>
<td>47</td>
</tr>
<tr>
<td>Profiling of genes central to human mitochondrial energy metabolism following low intensity laser irradiation</td>
<td>Nicolette N. Houreld, Roland Masha, and Heidi Abrahamse</td>
<td>53</td>
</tr>
<tr>
<td><strong>TRENDS IN BASIC AND APPLIED RESEARCH IN LASER BIOMEDICINE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laser measurement of respiration activity in preterm infants: Monitoring of peculiar events</td>
<td>L. Scalise, P. Marchionni, I. Ercoli, and E. P. Tomasini</td>
<td>63</td>
</tr>
<tr>
<td>Laser solidification of injectable scaffolds</td>
<td>E. N. Antonov, V. N. Bagratashvili, I. A. Borschenko, B. N. Khlebtsov, N. G. Khlebtsov, S. A. Minaeva, V. K. Popov, and A. V. Popova</td>
<td>69</td>
</tr>
</tbody>
</table>
LASER DENTISTRY

Laser in dentistry: Biostimulation and surgery
Franco Barzè, Beniamino Palmieri, Lorenzo Scalise, and Valentina Rottigni 77

Nd:YAG laser bloodless tonsillectomy by fiber optic doppler coupled handpiece beam delivery
Beniamino Palmieri and Valentina Rottigni 89

TALK POSTER SESSION

Assessment of the effects of laser or LED photobiomodulation on hypothyroid rats of cutaneous wound healing: A morphometric study.
Isabele Cardoso Vieira De Castro, Gardênia Matos Paraguassú, João Alves dod Reis Júnior, Flávia Caló Aquino Xavier, Tânia Tavares Rodrigues, Maria José Pedreira Ramalho, Antônio L. B. Pinheiro, and Luciana Maria Pedreira Ramalho 95

Effect of low-intensity laser radiation on the production of cytokines
Yulia Efremova and Leoš Navrátil 100

Antimicrobial photodynamic therapy in chronic osteomyelitis induced by Staphylococcus aureus:
An in vitro and in vivo study
João Alves dos Reis Júnior, Patrícia Nascimento de Assis, Gardênia Matos Paraguassú, Isabele Cardoso Vieira de de Castro, Renan Ferreira Trindade, Aparecida Maria Cordeiro Marques, Paulo Fernando Almeida, and Antônio Luiz Barbosa Pinheiro 113

LASER SKIN MEDICINE AND SURGERY

Fraxelated radiofrequency device for acne scars
Babar K. Rao and Sairah Khokher 119

Combined laser and surgical treatment of giant port wine stain malformation - Case report
I. Siewiera, P. Drozdowski, and P. Wójcicki 122

Preliminary study on radio-chemo-induced oral mucositis and low level laser therapy
Elisabetta Merigo, Matteo Fontana, Carlo Fornaini, Fabio Clini, Luigi Cella, Paolo Vescovi, and Aldo Oppici 137

Author Index 143