

# Contents

<b>Potential of Infrared Imaging in Assessing Digestive Disorders. . . . .</b>	<b>1</b>
Mahnaz Etehadtavakol, Eddie Y.K. Ng and Mohammad Hassan Emami	
<b>Potential of Thermography in Pain Diagnosing and Treatment Monitoring. . . . .</b>	<b>19</b>
Mahnaz Etehadtavakol and Eddie Y.K. Ng	
<b>Assessment of Foot Complications in Diabetic Patients Using Thermography: A Review . . . . .</b>	<b>33</b>
Mahnaz Etehadtavakol and Eddie Y.K. Ng	
<b>An Overview of Medical Infrared Imaging in Breast Abnormalities Detection . . . . .</b>	<b>45</b>
Mahnaz Etehadtavakol and Eddie Y.K. Ng	
<b>Registration of Contralateral Breasts Thermograms by Shape Context Technique . . . . .</b>	<b>59</b>
Mahnaz Etehadtavakol and Eddie Y.K. Ng	
<b>Color Segmentation of Breast Thermograms: A Comparative Study . . . . .</b>	<b>69</b>
Mahnaz Etehadtavakol and Eddie Y.K. Ng	
<b>Potentialities of Dynamic Breast Thermography . . . . .</b>	<b>79</b>
Amina Amri, Anthony James Wilkinson and Susan Helen Pulko	
<b>In Vivo Thermography-Based Image for Early Detection of Breast Cancer Using Two-Tier Segmentation Algorithm and Artificial Neural Network . . . . .</b>	<b>109</b>
Asnida Abd Wahab, Maheza Irna Mohamad Salim and Maizatul Nadwa Che Aziz	
<b>Detection of Breast Abnormality Using Rotational Thermography . . . . .</b>	<b>133</b>
Sheeja V. Francis, M. Sasikala and Sandeep D. Jaipurkar	

<b>Application of Infrared Images to Diagnosis and Modeling of Breast</b> . . . . .	159
Roger Resmini, Aura Conci, Lincoln Faria da Silva, Giomar Oliver Sequeiros, Francieric Araújo, Claudinéia de Araújo, Adriel dos Santos Araújo, Reinaldo Rodríguez-Ramos and Frédéric Lebon	
<b>A Semi-Analytical Heterogeneous Model for Thermal Analysis of Cancerous Breasts</b> . . . . .	175
A. Ramírez-Torres, R. Rodríguez-Ramos, A. Conci, F.J. Sabina, C. García-Reimbert, L. Preziosi, J. Merodio and F. Lebon	
<b>Dynamic Angiothermography (DATG)</b> . . . . .	191
F. Casali, R. Brancaccio, F.P. Draetta, M.P. Morigi, M. Bettuzzi and G. Baldazzi	
<b>Infrared Thermography for Detection of Diabetic Neuropathy and Vascular Disorder</b> . . . . .	217
B.B. Lahiri, S. Bagavathiappan, Baldev Raj and John Philip	
<b>Exploratory Thermal Imaging Assessments of the Feet in Patients with Lower Limb Peripheral Arterial Disease</b> . . . . .	249
Daniel Kyle, John Allen, Klaus Overbeck and Gerard Stansby	
<b>Reproducibility of Thermal Images: Some Healthy Examples</b> . . . . .	265
Audrey Macdonald, Nina Petrova, Suhail Ainarkar, John Allen, Peter Plassmann, Aaron Whittam, John Bevans, Francis Ring, Ben Kluwe, Rob Simpson, Leon Rogers, Graham Machin and Mike Edmonds	
<b>Thermal Imaging for Increasing the Diagnostic Accuracy in Fetal Hypoxia: Concept and Practice Suggestions</b> . . . . .	277
N.A. Urakova and A.L. Urakov	
<b>Active Dynamic Thermography in Medical Diagnostics</b> . . . . .	291
Mariusz Kaczmarek and Antoni Nowakowski	
<b>Evaluation of Respiration Rate Using Thermal Imaging in Mobile Conditions</b> . . . . .	311
Jacek Ruminski and Alicja Kwasniewska	
<b>Applications of Infrared Thermography for Noncontact and Noninvasive Mass Screening of Febrile International Travelers at Airport Quarantine Stations</b> . . . . .	347
Guanghao Sun, Takemi Matsui, Tetsuo Kirimoto, Yu Yao and Shigeto Abe	

<b>Evaluation of Evaporative Dry Eye Disease Using Thermal Images of Ocular Surface Regions with DWT and Gabor Transform</b> . . . . .	359
Vidya K. Sudarshan, Joel E.W. Koh, U. Rajendra Acharya, Jen Hong Tan, Muthu Rama Krishnan Mookiah, Chua Kuang Chua and Louis Tong	
<b>Infrared Thermal Mapping, Analysis and Interpretation in Biomedicine</b> . . . . .	377
Arul N. Selvan and Charmaine Childs	
<b>Medical Thermal Tomography—Different Approaches</b> . . . . .	395
B. Więcek, M. Strakowska, P. Więcek, R. Strakowski and G. De Mey	
<b>Vapotranspiration in Biological System by Thermal Imaging</b> . . . . .	417
Nicola Ludwig	
<b>Change in Local Temperature of Venous Blood and Venous Vessel Walls as a Basis for Imaging Superficial Veins During Infrared Phlebography Using Temperature-Induced Tissue Contrasting</b> . . . . .	429
Aleksandr L. Urakov, Anton A. Kasatkin and Natalia A. Urakova	
<b>Intraoperative Thermal and Laser Speckle Contrast Imaging Assessment of Bowel Perfusion in Two Cases of Colorectal Resection Surgery</b> . . . . .	437
Costanzo Di Maria, Paul J. Hainsworth and John Allen	
<b>An Approach for Thyroid Nodule Analysis Using Thermographic Images</b> . . . . .	451
J.R. González, É.O. Rodrigues, C.P. Damião, C.A.P. Fontes, A.C. Silva, A.C. Paiva, H. Li, C. Du and A. Conci	
<b>Modeling Thermal Infrared Imaging Data for Differential Diagnosis</b> . . . . .	477
Enas Ismail and Arcangelo Merla	
<b>3D Dynamic Thermography System for Biomedical Applications</b> . . . . .	517
G. Chernov, V. Chernov and M. Barboza Flores	
<b>Index</b> . . . . .	547

Application of Infrared to Biomedical Sciences

Ng, E.Y.; Etehadtavakol, M. (Eds.)

2017, XXIV, 552 p. 283 illus., 242 illus. in color.,

Hardcover

ISBN: 978-981-10-3146-5