

# Contents

<b>Preface</b> .....	v
<b>Anatomy of the Focal-Plane Sensor-Processor Arrays</b> .....	1
Ákos Zarándy	
<b>SCAMP-3: A Vision Chip with SIMD Current-Mode Analogue Processor Array</b> .....	17
Piotr Dudek	
<b>MIPA4k: Mixed-Mode Cellular Processor Array</b> .....	45
Mika Laiho, Jonne Poikonen, and Ari Paasio	
<b>ASPA: Asynchronous–Synchronous Focal-Plane Sensor-Processor Chip</b> .....	73
Alexey Lopich and Piotr Dudek	
<b>Focal-Plane Dynamic Texture Segmentation by Programmable Binning and Scale Extraction</b> .....	105
Jorge Fernández-Berni and Ricardo Carmona-Galán	
<b>A Biomimetic Frame-Free Event-Driven Image Sensor</b> .....	125
Christoph Posch	
<b>A Focal Plane Processor for Continuous-Time 1-D Optical Correlation Applications</b> .....	151
Gustavo Liñán-Cembrano, Luis Carranza, Betsaida Alexandre, Ángel Rodríguez-Vázquez, Pablo de la Fuente, and Tomás Morlanes	
<b>VISCUBE: A Multi-Layer Vision Chip</b> .....	181
Ákos Zarándy, Csaba Rekeczky, Péter Földesy, Ricardo Carmona-Galán, Gustavo Liñán Cembrano, Soós Gergely, Ángel Rodríguez-Vázquez, and Tamás Roska	

<b>The Nonlinear Memristive Grid .....</b>	<b>209</b>
Feijun Jiang and Bertram E. Shi	
<b>Bionic Eyeglass: Personal Navigation System for Visually Impaired People .....</b>	<b>227</b>
Kristóf Karacs, Róbert Wagner, and Tamás Roska	
<b>Implementation and Validation of a Looming Object Detector Model Derived from Mammalian Retinal Circuit .....</b>	<b>245</b>
Ákos Zarándy and Tamás Fülöp	
<b>Real-Time Control of Laser Beam Welding Processes: Reality .....</b>	<b>261</b>
Leonardo Nicolosi, Andreas Blug, Felix Abt, Ronald Tetzlaff, Heinrich Höfler, and Daniel Carl	
<b>Real-Time Multi-Finger Tracking in 3D for a Mouseless Desktop .....</b>	<b>283</b>
Norbert Bérci and Péter Szolgay	
<b>Index .....</b>	<b>301</b>



<http://www.springer.com/978-1-4419-6474-8>

Focal-Plane Sensor-Processor Chips

Zarándy, Á. (Ed.)

2011, XIII, 305 p., Hardcover

ISBN: 978-1-4419-6474-8