

## ACRONYMS

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$\mu$ TAS	micro total analysis system
1D	one-dimensional
2D	two-dimensional
3D	three-dimensional
AC	alternating current
AFM	atomic force microscopy
ALE	arbitrary lagrangian eulerian
AlN	aluminum nitride
ANSI	American National Standards Institute
AO	adaptive optics
AOM	acousto-optical modulator
AR	anti-reflective
ASIC	application-specific integrated circuit
ASTM	American Society for Testing and Materials
AWG	arrayed waveguides
AWN	acid waste neutralization
BEM	boundary element method
BPM	beam propagation method
BPSG	boron phosphorus doped silicate glass
CAD	computer-aided design
CAIBE	chemically assisted ion-beam etching
CEM	contactless embossing microlenses
CGH	computer-generated hologram
CMOS	complementary metal-oxide semiconductor
CMP	chemical mechanic polishing
CMS	ciliary motion system
CTE	coefficient of thermal expansion
CVD	chemical vapor deposition
DC	direct current
DDR	double data rate
DEMUX	demultiplexing
DMD	digital micromirror device
DOE	diffractive optical element
DOF	degrees of freedom
DRAM	digital random access memory

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DRIE	deep reactive ion etching
DSC	differential scanning calorimetry
DUV	deep ultraviolet
DWDM	dense wavelength division multiplexing
DXRL	deep X-ray lithography
EC	electric circuit
EDFA	erbium-doped fiber amplifier
ELT	extremely large telescope
ETV	electrothermal vibromotor
EUV	extreme ultraviolet
ExAO	extreme adaptive optics
FP or F-P	Fabry-Perot
FD	finite difference
FHD	flame hydrolysis deposition
FIB	focused ion beam
FPA	focal plane array
FSMOS	free-space micro-optical system
FS	face shear
FWHM	full width half maximum
GLV	grating light valve
GRIN	gradient index
HEBS	high-energy beam sensitive (glass)
HOE	holographic optical element
I/O	input/output
IBE	ion beam etching
IC	integrated circuit
ICP	inductive coupled plasma (etching)
IR	infrared
LC	liquid crystal
LIGA	lithography, electroplating, and molding
LPCVD	low-pressure chemical vapor deposition
LVC MOS	low-voltage CMOS
LVDS	low-voltage differential signal
MARS	modulated antireflecting surface
MC	magnetic circuit
MCM	multichip module
MDOF	master degrees of freedom
MEMS	micro-electro-mechanical-systems
MHz	megahertz
MMIC	monolithic microwave integrated circuit
MOEMS	micro-opto-electro-mechanical-systems
MOSMOD	micromachined optical shutter modulation
MUMPS	multi-user MEMS process service
MUX	multiplexing
NA	numerical aperture

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OXC	optical crossconnect
PCR	polymerase chain reaction
PDE	partial differential equation
PE	planar expansion
PECVD	plasma-enhanced chemical vapor deposition
PLC	planar lightwave circuit
PLE	parallel length expansion
PMMA	polymethyl methacrylate
PSF	point spread function
PVdF	polyvinylidene fluoride
REM	raster electron microscope
REPM	rare earth permanent magnet
RF MEMS	radio-frequency MEMS
RIBE	reactive ion beam etching
RIE	reactive ion etching
rms	root-mean-square
ROM	reduced order modeling
RSD	retinal scanning display
SAM	self-assembled monolayer
SCREAM	single crystalline reactive etching and metallization
SDA	scratch drive actuator
SDR	single data rate
SEM	scanning electron microscope
SLM	spatial light modulator
SMA	shape memory alloy
SME	shape memory effect
SOAC	systems on-a-chip
SOAP	systems on-a-package
SOI	silicon-on-insulator
SRAM	static random access memory
SUMMiT	Sandia's ultraplanar multilevel MEMS technology
SVGA	super video graphics adapter
SWIR	short-wave infrared
SXGA	super-extended graphics adapter
TCR	temperature coefficient of resistance
TE	transverse electric
TE	thickness expansion
TEOS	tetra ethyl orthosilicate
TFAMA	thin-film-actuated mirror array
TLE	transverse length expansion
TM	transverse magnetic
TS	thickness shear
TTD	true time delay
UV	ultraviolet
VCM	variable-capacitance motor

VCSEL	vertical cavity surface emitting laser
VLSI	very large scale integration
VOA	variable optical attenuator
WDM	wavelength division multiplexing
WLP	wafer-level packaging
XGA	extended graphics adapter

## ABOUT THE EDITOR

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Dr. Manouchehr E. Motamedi is an Executive of Revoltech Microsystems. He received his Ph.D. in EE from Northwestern University, Evanston, IL, and his MBA from Pepperdine University, Malibu, CA. His research interests focus on MEMS technologies and micro-optics. Dr. Motamedi is the chair of the MOEMS-MEMS Micro & Nanofabrication Symposium, is a chair of several SPIE conferences on MEMS and MOEMS, is the editor of eleven SPIE proceedings and two special issues. He has more than 100 publications including numerous invited papers and plenary presentations. He is a senior member of IEEE, a Fellow of SPIE, and has 12 national and international high-tech patents to his name.



## ABOUT THE AUTHORS

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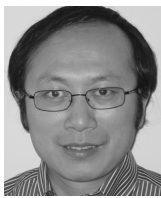
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