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| <b>Title word cross-reference</b> | <b>14nm</b> [TGCJ16]. <b>1S1R</b> [BSL+18].<br><b>2006</b> [CS07]. <b>2007</b> [LC08]. <b>2008</b> [Bah09].<br><b>2011</b> [AD14, SN10]. <b>22nm</b> [TGCJ16].<br><b>2</b> [CJ14a, CV12, HYWA09, SMT+17]. <b>3</b><br>[ARLB18, VRBS16, BCT+13, CKC+18,<br>CJ14a, CH14, FRB08, KSB+08, KYEB15,<br>KKC17, KWWI17, LKC15, LDK+18, SCL17,<br>SKRX13, TJ13b, TZS14, XLBB06, XCF08,<br>XDX14, XPD12, ZJS10, ZMC15]. <b>4</b><br>[LCSP14]. $\kappa$ [MP10]. $\mu$ [RFDT15]. $T$<br>[YYC07]. $\Theta(\sqrt{n})$ [CV12]. $V_{th}$ [MP10].<br><b>-Bit</b> [LCSP14]. <b>-D</b> [HYWA09]. <b>-depth</b><br>[CV12]. <b>-Phase</b> [SMT+17]. <b>-tree</b> [YYC07].<br><b>/high</b> [MP10]. <b>/high-</b> [MP10].<br><b>100GBd</b> [XLL+18]. <b>10nm</b> [GVR17]. | <b>a-Si</b> [HCTK08]. <b>ABC</b> [PPM+13].<br><b>Abstraction</b> [DRL+19]. <b>accelerated</b><br>[ZJT+14]. <b>Acceleration</b> [ASP+18].<br><b>Accelerator</b><br>[KPPB17, LLX+18a, PJSM17, ZK18].<br><b>Accelerators</b> [XCS+19]. <b>Access</b><br>[GLMG+15, LBJ+16, AKW+13, CSKM13].<br><b>Access-Transistor-Free</b> [GLMG+15].<br><b>accessibility</b> [GN08]. <b>Accumulation</b><br>[BSS16]. <b>Accumulation-Mode</b> [BSS16].<br><b>Accuracy</b><br>[ACH+17, GKT+18, NPH18, TKBM12].<br><b>Accurate</b> [CMJ14, ZF15, KTW08]. |
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**Achievable** [KAKSP14]. **achieving** [WWJ09]. **ACM** [BC08, Shu09]. **across** [AMVG12, JRLR15]. **Activation** [HLH<sup>+</sup>12, LQYL19]. **active** [ABS<sup>+</sup>12, PDLS06]. **Actuators** [ZF15]. **Adaptation** [LJL18]. **Adaptive** [GLMG<sup>+</sup>15, MGK18, KMD12, LCT12]. **Adder** [BSL<sup>+</sup>18, ISI<sup>+</sup>18, MGZ<sup>+</sup>17, NV14, CV12, TR13]. **Addition** [CV11]. **Addressable** [GG17]. **addressing** [SRD<sup>+</sup>06]. **Advanced** [YWF18]. **Advances** [TSB15]. **AES** [YWF18]. **against** [GSC17, ZCX<sup>+</sup>17]. **aging** [AMA<sup>+</sup>14, CNPR14, KCC<sup>+</sup>14]. **Agnostic** [CTP14]. **Algorithm** [CEW<sup>+</sup>13, LCSP14, MCT18, RDH14, SKB13, YL14]. **Algorithms** [CLKG17, CLSD18, PT14a, GMM12, PSM<sup>+</sup>06]. **alive** [ABS<sup>+</sup>12]. **All-Optical** [GB18]. **All-Spin** [MS17, VSRR15]. **Alleviate** [WXW<sup>+</sup>17]. **Allocation** [KXY16, LKL<sup>+</sup>18, WWJ09]. **Allocator** [YXD<sup>+</sup>17]. **alternate** [LBGR08]. **Alternative** [RKM15, TV17]. **ALU** [SDSS14]. **Amplifier** [SFD17]. **Analog** [ASP<sup>+</sup>18, BY18, BSS16, ZSPC19]. **Analysis** [ARLB18, BBB<sup>+</sup>16, GRPT13, GG17, GFZ13, GPW<sup>+</sup>15, KYEB15, KCWL<sup>+</sup>16, LTKP16, NLK<sup>+</sup>13, CCTP08, CSKM13, CWT14, DWL10, HCTK08, KSG14, PFOL07, RBGC14, ZFT13]. **Analytical** [KYEB15]. **Annotation** [PPM<sup>+</sup>13]. **Anomaly** [KPFM16]. **Anti** [CCW18]. **Anti-Reverse** [CCW18]. **Application** [DKK<sup>+</sup>15, FC18, Tah06, AMVG12, XS14]. **Application-independent** [Tah06]. **Application-Specific** [DKK<sup>+</sup>15, FC18]. **Applications** [ASP<sup>+</sup>18, FNO<sup>+</sup>19, GYM<sup>+</sup>17, JWJ<sup>+</sup>17, KPPB17, SHAC19, MFA<sup>+</sup>13, PFOL07]. **Approach** [BM15, BS15, DRSR14, DJ16, JRLR15, LDK<sup>+</sup>18, ZY18, ZGSA15, CQZK14, RT08, SZSS10]. **Approximate** [GP17, JLL<sup>+</sup>17, LQYL19, SVA<sup>+</sup>18]. **Arbitrary** [Mog14]. **Architecting** [Mit17]. **Architectural** [Mit16, VO06, WKL16]. **Architecture** [AM18, BYHT18, CNH12, DPB11, JOF<sup>+</sup>15, LLX<sup>+</sup>18a, NLL<sup>+</sup>17, SGR<sup>+</sup>12, VK18, VDB<sup>+</sup>16, WX15, YYBK19, CQZK14, CV12, CA11, MTC<sup>+</sup>08, Moh12, PDLS06, PDL07, SCI<sup>+</sup>09, TWL09, TCSV09, ZJS09a, ZJS10, ZJS09b]. **architecture-level** [Moh12]. **Architectures** [AMF<sup>+</sup>15, CMM<sup>+</sup>18, CDP17, CCWCC15, DJ16, GCO<sup>+</sup>11, LGL15, RMG15, Shu09, WZL16, YJ18, YP17, BPH<sup>+</sup>11, CDG<sup>+</sup>12, Deh05, FGZ14, KWFH12, WVGP13, XLBB06, ZMT13]. **Area** [CKC<sup>+</sup>18, CCH16, KCWL<sup>+</sup>16, PFRR17, RT07]. **Arithmetic** [JLL<sup>+</sup>17, VMNI08, Gla14]. **Array** [LYWW13, MTC<sup>+</sup>08]. **Arrays** [BSL<sup>+</sup>18, CEW<sup>+</sup>13, CCH16, CCTP08, CSKM13]. **Artificial** [Dea14]. **ASBUS** [YWF18]. **Assays** [GCB14]. **assembled** [GRS05]. **Assignment** [YJ18, SLS<sup>+</sup>14, ZS08]. **Associated** [GCO<sup>+</sup>11]. **Associative** [CCWCC15]. **Asymmetric** [CJ16, GVRR17, GJ17, LPW18]. **Asynchronous** [GRPT13, SM11, VGZ11, VSM19, ZSXY11, CB09]. **Asynchrony** [SN11]. **Attacks** [JWJ<sup>+</sup>17]. **Authentication** [Bis17, IGR<sup>+</sup>16]. **Automata** [DPB11, DWL10]. **Automated** [DMR06, GCJ17, XHSC07, ZS08]. **automation** [CZ05]. **Autonomous** [LPB<sup>+</sup>15]. **Aware** [GLMG<sup>+</sup>15, GUP11, MPM13, MKW<sup>+</sup>14, PFRR17, PRG<sup>+</sup>15, WX15, MSCS19, RMBC12, STA<sup>+</sup>12, YWH<sup>+</sup>13]. **Backside** [DDR<sup>+</sup>16a]. **ballistic** [HYWA09, PFOL07]. **Barely** [ABS<sup>+</sup>12]. **Based** [BBB<sup>+</sup>16, BSY<sup>+</sup>16, BYHT18, CZW<sup>+</sup>19, DKK<sup>+</sup>15, FYJ<sup>+</sup>17, GCO<sup>+</sup>11, GRPT13, GG17, HC15, KXY16, LTKP16, LPB<sup>+</sup>15, LQYL19, LLX<sup>+</sup>18b, MPM13, MKSW17, NLL<sup>+</sup>17, NPA<sup>+</sup>12, OBLD14, STSG17, SGR<sup>+</sup>12, SSF<sup>+</sup>15, TZS14, VAK18, VDB<sup>+</sup>16,

VSRR15, WX15, XLL<sup>+18</sup>, YXW<sup>+12</sup>, YLF<sup>+17</sup>, YYPK17, ZJ11, ZCX<sup>+17</sup>, ZY18, ZF15, CZ05, CHN09, DMR06, Deh05, GD12, Gla14, HMS<sup>+05</sup>, LJ10, LDK<sup>+18</sup>, MSCS19, MN06, SZSS10, SPR18, SC06, TCSV09, TR13, YYBK19, WZSC09]. **BCD** [TR13]. **beamed** [KK12]. **Beat** [LTKP16]. **Behavior** [GSC17]. **Benchmark** [XCS<sup>+19</sup>]. **Benefit** [CKC<sup>+18</sup>]. **Best** [Bah09]. **between** [TGCJ16]. **beyond** [KZW<sup>+15</sup>]. **bias** [KCC<sup>+14</sup>]. **BigBus** [BPS19]. **Binary** [CCWCC15, GCJ17, LLX<sup>+18a</sup>, NHL<sup>+17</sup>, TR13]. **biochemical** [RBGC14]. **Biochips** [BMB18, GCB14, LBB<sup>+18</sup>, MPM13, OGB18, CZ05, DJRM09, DDM<sup>+06</sup>, RMBC12, RBGC14, SC06, SC08, XHSC07, XC08, YYC07]. **Bioinformatics** [Gui13]. **Biology** [Dea14, FHFk14, HD14, MHW14, MSW14, OBLD14, VMV13]. **Biosequence** [GFZ13]. **Bit** [LCSP14]. **Bitline** [LYWW13]. **Bladder** [MGS<sup>+12</sup>]. **Blind** [CVK15]. **Block** [CZQK15, ON15]. **Boltzmann** [YP17]. **bond** [XS14]. **Bonding** [KKC17]. **Boolean** [GKT<sup>+18</sup>, SWK<sup>+16</sup>]. **Bottom** [NLK<sup>+13</sup>]. **Bottom-up** [NLK<sup>+13</sup>]. **Brain** [BY18, KWWI17]. **Brain-inspired** [BY18]. **broad** [GN08]. **Brownian** [PLC<sup>+13</sup>]. **build** [KSB<sup>+08</sup>]. **buildable** [LRN05]. **built** [CWL<sup>+13</sup>]. **Bulk** [BSS16]. **Bundled** [SMT<sup>+17</sup>]. **Bundled-Data** [SMT<sup>+17</sup>].

**Cache** [GB18, VSRR15, ZMC15, TJ13a]. **Caches** [ON15, PAB<sup>+17</sup>, CWL<sup>+13</sup>]. **Calculus** [DD14]. **Call** [SN10]. **Canonization** [GUP11]. **Capacity** [KXY16]. **Carbon** [DLWW08, GRPT13, HC15, HZY<sup>+12</sup>, MN06, SXL<sup>+12</sup>]. **Carry** [MGZ<sup>+17</sup>]. **Case** [PPM<sup>+13</sup>, HCTK08]. **Causality** [MJ11]. **CBRAM** [MKSW17]. **CBRAM-Based** [MKSW17]. **Cell** [BCT<sup>+13</sup>, GG17, SFD17, SWJ07]. **Cells** [CMJ14, DSB16, KCWL<sup>+16</sup>, MS17, CWL<sup>+13</sup>]. **Cellular** [DPB11, LLX<sup>+18b</sup>, XLW<sup>+18</sup>, CCTP08, DWL10]. **center** [BPB<sup>+12</sup>, KMD12, SMR<sup>+12</sup>]. **centers** [AMVG12]. **Centric** [KPPB17]. **CGRAs** [JOF<sup>+15</sup>]. **chain** [GD12, WFCX09]. **chain-based** [GD12]. **Challenges** [Ko12, Nar05, MN06, YW13]. **Change** [WZL16, JRC<sup>+13</sup>]. **Channel** [CDP17]. **Characteristics** [KKKK18]. **Characterization** [AMA<sup>+14</sup>, TJ13b, KWFH12]. **Charge** [RFDT15]. **Check** [LBJ<sup>+16</sup>]. **Check-Pointing** [LBJ<sup>+16</sup>]. **Checking** [MZR<sup>+14</sup>]. **chemically** [CNHL08]. **Chip** [VRBS16, BKJ19, Bis17, CLKG17, CMM<sup>+18</sup>, CZQK15, CKC<sup>+18</sup>, CCW18, CTP14, DJ16, FNO<sup>+19</sup>, LDK<sup>+18</sup>, LWM<sup>+14</sup>, MSCS19, PDL15, PRG<sup>+15</sup>, QCF<sup>+16</sup>, TZS14, VK18, VSM19, WXW<sup>+17</sup>, XYM18, BPH<sup>+11</sup>, CLSD18, CDG<sup>+12</sup>, CWL<sup>+13</sup>, CJ14b, CA11, GMM12, LMC<sup>+11</sup>, LWX<sup>+14</sup>, WVGP13, ZFT13, ZXC10, PCD<sup>+11</sup>, YXW<sup>+12</sup>]. **Chip-Level** [CCW18]. **choices** [Nar05]. **Chronic** [MGS<sup>+12</sup>]. **Circuit** [ACH<sup>+17</sup>, CJ16, DRSR14, GRPT13, GCJ17, GB18, HSZM17, KHR<sup>+15</sup>, MCT18, NPH18, TGCJ16, TSMCB17, VAK18, BJ10, DLWW08, KCC<sup>+14</sup>, MRH12, MMJ09, Moh12, SZSS10, XDX14, YWH<sup>+13</sup>]. **Circuits** [AMF<sup>+15</sup>, BM15, BS15, Che15, CV11, DD14, DWK<sup>+16</sup>, DNHL11, HM14, HLS14, HN12, JLL<sup>+17</sup>, KZW<sup>+15</sup>, KKC17, LCSP14, MZR<sup>+14</sup>, MJ11, PLC<sup>+13</sup>, SM11, SMT<sup>+17</sup>, TJ13b, TSB15, VGZ11, BCT<sup>+13</sup>, HZY<sup>+12</sup>, KT14, LRN05, LWH14, LJ14, MHL08, MN06, PSM<sup>+06</sup>, Sek07, TR10, TR13, WFCX09, XCF08]. **Classical** [DD14]. **Classification** [BYHT18, JLL<sup>+17</sup>, KPPB17]. **Classifiers** [LQYL19]. **Clock** [CH14, Che15, ANR<sup>+14</sup>, MRH12, XPD12]. **Clock-Controlled** [Che15]. **Clock-Tree** [CH14]. **Clocking** [SSF<sup>+15</sup>]. **Clockless** [MJ11]. **Closed** [SSN12]. **Closed-Loop** [SSN12]. **Cloud** [PHS<sup>+15</sup>, AMA<sup>+14</sup>]. **Cluster** [YYBK19]. **Cluster-based**

[YYBK19]. **Clustering** [DRSR14]. **Clusters** [PPM<sup>+</sup>13, RT07]. **CMOS** [ASP<sup>+</sup>18, CB09, Che15, HN12, HLH<sup>+</sup>12, KHR<sup>+</sup>15, MP10, Nar05, RT07, RYT<sup>+</sup>07, SCI<sup>+</sup>09, SXL<sup>+</sup>12, ZJS09a, ZJS09c, ZJS09b, ZJS10, ZC07, MRR12]. **CMOS-nano** [CB09]. **CMOS/** [MRR12]. **CMOS/molecular** [RYT<sup>+</sup>07]. **CMPs** [GB18, SKRX13]. **CMFET** [PFOL07]. **Co** [GKT<sup>+</sup>18]. **Co-Processor** [GKT<sup>+</sup>18]. **Code** [HH11, LPW18]. **Codesign** [WXW<sup>+</sup>17]. **Cofactor** [SSP14]. **Cognitive** [KZL15]. **Coherent** [GB18]. **Color** [LM13]. **Combating** [LPW18]. **Combination** [VMV13]. **combined** [ZFT13]. **Communication** [LGL15, LMC<sup>+</sup>11, SX11]. **Community** [HH18]. **compact** [DLWW08]. **Comparative** [DDR<sup>+</sup>16a, JLL<sup>+</sup>17, KCWL<sup>+</sup>16]. **Comparison** [LLS017]. **Compatible** [KCD15, KCC<sup>+</sup>14]. **compensation** [MRH12]. **completion** [MNT14]. **Complex** [PSY<sup>+</sup>18, WVGPI13]. **Complexity** [SGR<sup>+</sup>12]. **Components** [Mit17]. **Composable** [MHW14]. **Compressors** [GP17]. **Computation** [AL17, CVK15, HSZM17, YLF<sup>+</sup>17, YWH<sup>+</sup>13, WDT14]. **Computational** [MSW14]. **Computer** [AVK16, WZL16, CV12]. **Computers** [JRLR15, PSY<sup>+</sup>18]. **Computing** [Ano18, ASP<sup>+</sup>18, BY18, BH17, DMYT15, FYJ<sup>+</sup>17, HN15, JRLR15, KZL15, KWW17, LGL15, LP17, Mit16, NLL<sup>+</sup>17, NV14, NHL<sup>+</sup>17, PAF18, SCL17, SVA<sup>+</sup>18, SDSS14, SK16, SPR18, TSMCB17, TV17, VAK18, XNK18, ZSPC19, ZK18, AMA<sup>+</sup>14, KMD12, KT14, MHL08, McK07, PG12, VO06, WZSC09, WDH<sup>+</sup>09, YW13]. **Conditional** [PSR17]. **Configuration** [Bis17]. **configuring** [RT08]. **Congestion** [MKW<sup>+</sup>14, RMBC12]. **Congestion-Aware** [MKW<sup>+</sup>14, RMBC12]. **Connections** [LKC15]. **Conservative** [PPM<sup>+</sup>13]. **consideration** [LWH14]. **Considerations** [MRR12, UMB<sup>+</sup>18, BJ10, WOW<sup>+</sup>10]. **considering** [RYT<sup>+</sup>07, SLS<sup>+</sup>14]. **Constants** [Mog14]. **Constrained** [OGB18, XHSC07]. **Constraint** [WXW<sup>+</sup>17]. **Constraints** [CCH16, CNHL08, XHSC07]. **Consumption** [FC18, LBJ<sup>+</sup>16, LYWW13]. **Content** [GG17]. **Contradictory** [DWK<sup>+</sup>16]. **Control** [GYM<sup>+</sup>17, GCB14, ZXC10]. **control-path** [ZXC10]. **Controllable** [MGZ<sup>+</sup>17]. **Controllable-Polarity** [MGZ<sup>+</sup>17]. **Controlled** [Che15, DNHL11, HZSA14, SXL<sup>+</sup>12]. **Converter** [TZS14]. **Convolution** [SPR18]. **Convolution-over-time** [SPR18]. **Convolutional** [AHS17, LLX<sup>+</sup>18a, PJSM17]. **Coprocessor** [ASP<sup>+</sup>18]. **Core** [BKJ19, DMYT15, KPFM16, YWF18]. **Correlation** [AAF13]. **Cosine** [DBG<sup>+</sup>14]. **Cost** [GCJ17, HSZM17, KXY16, LCSP14, LBGR08, TR10]. **count** [MCT18]. **Countermeasure** [BBB<sup>+</sup>16]. **Counting** [VAK18]. **Coupled** [GKT<sup>+</sup>18, YLF<sup>+</sup>17]. **Coupling** [KKC17]. **CPDI** [XDX14]. **Critical** [CWT14, SHAC19]. **Critical-reliability** [CWT14]. **Criticality** [DRL<sup>+</sup>19, YWH<sup>+</sup>13]. **Cross** [BS15, DKK<sup>+</sup>15, LYWW13, PRG<sup>+</sup>15, SS15, ZGSA15, XDX14]. **Cross-Layer** [BS15, DKK<sup>+</sup>15, PRG<sup>+</sup>15, SS15, ZGSA15]. **Cross-Point** [LYWW13]. **cross-power** [XDX14]. **Crossbar** [BSL<sup>+</sup>18, KZL15, LLSO17, NHL<sup>+</sup>17, UMB<sup>+</sup>18, WDW13, WRWW17, YL14, ZK18, CQZK14, Tah09, ZMT13]. **Crossbars** [PDL15]. **Crypsis** [GSC17]. **Cubes** [DRSR14]. **Current** [KKKK18, MGK18, RFDT15]. **Current-Voltage** [KKKK18]. **Cyber** [LBB<sup>+</sup>18]. **Cyber-Physical** [LBB<sup>+</sup>18]. **Cycle** [ZF15, SZSS10]. **Cycle-Accurate** [ZF15]. **cycle-based** [SZSS10]. **Cycles** [JRLR15]. **cycling** [GD12].

**D** [CV12, ARLB18, VRBS16, BCT<sup>+</sup>13, CKC<sup>+</sup>18, CJ14a, CH14, FRB08, HYWA09, KSB<sup>+</sup>08, KYEB15, KKC17, KWWI17, LKC15, LDK<sup>+</sup>18, SCL17, SKRX13, TJ13b, TZS14, XLBB06, XCF08, XDX14, XPD12, ZJS10, ZMC15]. **D-IC** [CH14]. **DAC** [CS07, LC08]. **DAHM** [AMVG12]. **Data** [FHFk14, PSM<sup>+</sup>06, SMT<sup>+</sup>17, SCZ<sup>+</sup>12, AMVG12, ABS<sup>+</sup>12, BPB<sup>+</sup>12, KMD12, SMR<sup>+</sup>12, ZJS09a]. **DC** [TZS14]. **DDR<sub>x</sub>** [HTMH18]. **Deadline** [SN10]. **Deadlock** [LKC15]. **Deadlock-Free** [LKC15]. **decimal** [Gla14]. **decision** [LJ14]. **Decomposition** [HZSA14]. **Deep** [AHS17, CKC<sup>+</sup>18, KKKK18, PSR17, PSY<sup>+</sup>18]. **Defect** [GUP11, WDW13, YL14, DWL10, PDL07, SCI<sup>+</sup>09, Tah06, Tah09, TWL09, XC08, YYC07]. **Defect-Aware** [GUP11]. **Defect-Free** [YL14]. **defect-tolerant** [YYC07, ZMT13]. **defect/error** [TWL09]. **defect/error-tolerant** [TWL09]. **Defects** [CHN09, KKC17]. **degradation** [Edi14, SLS<sup>+</sup>14]. **Delay** [BY18, CMJ14, CKWK18, Gla14, KKC17, LMM18, SMT<sup>+</sup>17, TGCJ16, CWT14, TR10]. **Delay-based** [Gla14]. **Delay/Power** [TGCJ16]. **Delivery** [HLH<sup>+</sup>12, WXW<sup>+</sup>17, ZSXY11, ZS08]. **Demand** [HLH<sup>+</sup>12]. **Denser** [RMW<sup>+</sup>17]. **dependability** [PUBV07, TG07]. **Dependence** [NPA<sup>+</sup>12]. **Dependent** [AMF<sup>+</sup>15, ZWL<sup>+</sup>15]. **Deployment** [PJS17]. **Deposited** [LLSO17, BPH<sup>+</sup>11]. **depth** [CV12]. **Design** [ACH<sup>+</sup>17, BKJ19, BSY<sup>+</sup>16, CZ05, CJ16, CTP14, DKK<sup>+</sup>15, DRL<sup>+</sup>19, GRPT13, GP17, GG17, GJ17, HM14, JWJ<sup>+</sup>17, LPB<sup>+</sup>15, LDK<sup>+</sup>18, LPW18, MRR12, MCT18, NPH18, NV14, OBLD14, PCD<sup>+</sup>11, PUBV07, SFD17, SDSS14, SS15, SN11, TJ13a, TR10, TR13, TSB15, TSMCB17, UMB<sup>+</sup>18, WOW<sup>+</sup>10, XLBB06, ZJS09a, ZSPC19, ZGSA15, BJ10, BCT<sup>+</sup>13, CB09, CDG<sup>+</sup>12, CJ14b, CNHL08, DMR06, DLWW08, Gla14, GRS05, HMS<sup>+</sup>05, HZY<sup>+</sup>12, KP10, LBGR08, LMC<sup>+</sup>11, MLK<sup>+</sup>08, MRH12, MN06, Nar05, OSLT06, RMBC12, SXL<sup>+</sup>12, WFCX09, XDX14, XHSC07, ZC07, ZXC10, ZJS09c]. **design-considerations** [BJ10]. **Designing** [AVK16, DBG<sup>+</sup>14, RYT<sup>+</sup>07, TKBM12]. **Designs** [ACJ17, FNO<sup>+</sup>19, TZS14, ANR<sup>+</sup>14, ZS08]. **Detect** [JWJ<sup>+</sup>17]. **Detection** [BYHT18, CKWK18, HIH18, KPFM16, SGR<sup>+</sup>12, ZFT13]. **Detector** [LTKP16]. **Detector-Based** [LTKP16]. **Device** [BJ10, CJ14a, HD14, YJ18, Edi14, RYT<sup>+</sup>07]. **Device-Type** [YJ18]. **Devices** [GBLD15, NPA<sup>+</sup>12, PDL15, STSG17, JRC<sup>+</sup>13, MHL08, RT08, YW13]. **DFR** [BY18]. **diagnosis** [DJRM09, DDM<sup>+</sup>06]. **Diagonal** [HZSA14]. **diagram** [LJ14]. **Digital** [BMB18, Che15, GCB14, HM14, HLS14, KZL15, LBB<sup>+</sup>18, MPM13, OGB18, DJRM09, DDM<sup>+</sup>06, KT14, RMBC12, RBGC14, SC08, XHSC07, XC08, YYC07, ZXC10]. **Digital-Microfluidic** [LBB<sup>+</sup>18]. **dilution** [RBGC14]. **Dimensional** [GUP11, MLK<sup>+</sup>08, WFCX09, XS14]. **diode** [BJ10, DMR06]. **diode-based** [DMR06]. **diodes** [LM13]. **displacements** [SWJ07]. **dissipation** [MHL08]. **Distance** [CV11]. **Distributed** [NHL<sup>+</sup>17, AMVG12, STA<sup>+</sup>12, VMNI08]. **distributed-memory** [VMNI08]. **distribution** [XPD12]. **Disturbance** [ZCX<sup>+</sup>17]. **Division** [XLL<sup>+</sup>18]. **DNA** [MT14, SKB13]. **Domain** [Mit17, XDX14]. **Domain-Wall** [Mit17]. **Dot** [DPB11, DWL10, WDH<sup>+</sup>09]. **DPA** [ZJ11]. **DRAM** [YYBK19]. **DRAM-Flash** [YYBK19]. **DRAMs** [BJ10]. **Driven** [LHW<sup>+</sup>17, GMM12, XS14]. **driver** [HCTK08]. **Droplet** [MPM13, XHSC07, XC08]. **Droplet-Aware** [MPM13]. **droplet-interference** [XHSC07]. **Drug** [HLH<sup>+</sup>12]. **DSP** [TWL09]. **Dual**

[MFA<sup>+13</sup>, PAF18, YJ18, MP10]. **dual-**  
 [MP10]. **Dual-Mode** [PAF18]. **duty**  
 [GD12]. **DVFS** [MKW<sup>+14</sup>, ZF15]. **DWT**  
 [SGR<sup>+12</sup>]. **Dynamic**  
 [CThG15, GB18, JOF<sup>+15</sup>, MRH12, ZMC15,  
 AMVG12, WWJ09]. **dynamically**  
 [ZJS09a, ZJS09c, ZJS09b, ZJS10].

**Early** [Ko12, XLW<sup>+18</sup>, ZGSA15].  
**Early-Stage** [ZGSA15]. **Easy** [DDR<sup>+16b</sup>].  
**ECC** [PFRR17]. **ECDSA** [BBB<sup>+16</sup>]. **ECG**  
 [SCZ<sup>+12</sup>]. **Editor** [CLKG17, Ano18].  
**Editorial**  
 [CS07, Cha10, IN05, McK07, Nar08, SK16,  
 TSB15, TSMCB17, TV17, XCF08, Shu09].  
**Editors** [CLSD18, FNO<sup>+19</sup>]. **Effect**  
 [CV11, LYWW13, XPD12, HZY<sup>+12</sup>]. **effects**  
 [MLK<sup>+08</sup>]. **Efficiency**  
 [CMM<sup>+18</sup>, LLSO17, TKBM12, ZS08].  
**Efficient** [BYHT18, DJRM09, HN12,  
 LKC15, LPW18, NV14, PJSM17, PSR17,  
 PAF18, SVA<sup>+18</sup>, SDSS14, SMT<sup>+17</sup>, SPR18,  
 VSRR15, XLW<sup>+18</sup>, ANR<sup>+14</sup>, BY18, GD12,  
 KSB<sup>+08</sup>, PT12, TR13, SM11]. **Elastic**  
 [PHS<sup>+15</sup>]. **Elasticity** [GOGCK11]. **Electric**  
 [RFDT15]. **Electro** [ACJ17].  
**Electro-Photonic** [ACJ17].  
**Electroencephalography** [TKBM12].  
**Electron** [CEW<sup>+13</sup>, CCH16, HYWA09].  
**Electronic** [YXW<sup>+12</sup>, JRC<sup>+13</sup>].  
**Electronics**  
 [BY12, Ko12, HCTK08, WZSC09].  
**Electrostatic** [GPW<sup>+15</sup>, KKC17].  
**electrostatics** [KTW08]. **Electrothermal**  
 [CSKM13, HLH<sup>+12</sup>]. **Element** [SMT<sup>+17</sup>].  
**elements** [CW08]. **Embedded**  
 [JWJ<sup>+17</sup>, LBJ<sup>+16</sup>, MCT10]. **Embedding**  
 [HIH18, SWK<sup>+16</sup>]. **Embryonics** [TMM<sup>+07</sup>].  
**Emerging** [BSY<sup>+16</sup>, DMYT15, FNO<sup>+19</sup>,  
 GBLD15, KZW<sup>+15</sup>, TSB15, WZSC09, BC08,  
 Edi14, PUBV07]. **Enabled**  
 [CDP17, WVGP13]. **Encoding** [ZWL<sup>+15</sup>].  
**Energy** [ACH<sup>+17</sup>, BY18, CMM<sup>+18</sup>,  
 DNHL11, GD12, LPB<sup>+15</sup>, LKC15, LLSO17,  
 LYWW13, LJL18, PFRR17, PSR17, PAF18,  
 RFDT15, SVA<sup>+18</sup>, STA<sup>+12</sup>, SMT<sup>+17</sup>,  
 SPR18, TKBM12, VSRR15, ZSXY11,  
 KMD12, KSB<sup>+08</sup>, KP10, MHL08, MCT10,  
 SMR<sup>+12</sup>, WOW<sup>+10</sup>, WCSA10, SM11].  
**Energy-** [STA<sup>+12</sup>]. **energy-adaptive**  
 [KMD12]. **Energy-Efficiency** [LLSO17].  
**Energy-Efficient**  
 [LKC15, PSR17, SVA<sup>+18</sup>, SMT<sup>+17</sup>, SPR18,  
 VSRR15, BY18, GD12, SM11].  
**Energy-Neutral** [LPB<sup>+15</sup>]. **Engine**  
 [ZK18]. **Engineering** [CCW18, QCF<sup>+16</sup>].  
**Engines** [AL17]. **enhancement** [SC06].  
**Enhancing** [KMD12]. **environment**  
 [OSLT06]. **Epilepsy** [SSN12]. **Epileptic**  
 [SGR<sup>+12</sup>]. **equation** [KTW08]. **Era**  
 [TSMCB17]. **Error**  
 [GYM<sup>+17</sup>, LWX<sup>+14</sup>, ZXC10].  
**Error-Tolerant** [GYM<sup>+17</sup>, TWL09].  
**Errors** [LPW18, SKRX13]. **ESOP**  
 [DRSR14]. **Estimation** [CMJ14, GCJ17].  
**Eucalyptus** [AMA<sup>+14</sup>]. **Evaluating**  
 [RT07]. **Evaluation** [CTP14, DRL<sup>+19</sup>,  
 GRS05, JLL<sup>+17</sup>, MKW<sup>+14</sup>, CDG<sup>+12</sup>].  
**Evolutionary** [HM14, Sek07]. **Evolving**  
 [TG07]. **Exascale** [DMYT15]. **Execution**  
 [MPM13]. **Exit** [XLW<sup>+18</sup>]. **Exploiting**  
 [KXY16, SLC<sup>+17</sup>, VDB<sup>+16</sup>]. **Exploration**  
 [LDK<sup>+18</sup>, WKL16, TJ13a, XLBB06, ZJS09a,  
 ZC07]. **Exploring** [SKRX13]. **Extended**  
 [PPM<sup>+13</sup>]. **Extensible** [KAKSP14].  
**Extraction** [YL14]. **Extractor** [RFDT15].

**Fabric** [DPB11]. **Fabrication**  
 [CCH16, VDB<sup>+16</sup>]. **Fabrication-Induced**  
 [VDB<sup>+16</sup>]. **Fabrics** [NLK<sup>+13</sup>]. **Failure**  
 [KYEB15, PFRR17, VAK18].  
**Failure-Aware** [PFRR17]. **Fast**  
 [SKB13, YL14]. **Fault**  
 [BBB<sup>+16</sup>, BKJ19, CVK15, DJ16, HH11,  
 JWJ<sup>+17</sup>, LCK19, MGZ<sup>+17</sup>, SLC<sup>+17</sup>,  
 VAK18, DDM<sup>+06</sup>, SCI<sup>+09</sup>]. **Fault-Based**  
 [BBB<sup>+16</sup>]. **Fault-Tolerant** [BKJ19, CVK15,  
 DJ16, HH11, LCK19, MGZ<sup>+17</sup>]. **faults**

[CHN09]. **Feature** [SPR18]. **Feedback** [BY18]. **Field** [BMB18, KR18, NPA<sup>+12</sup>, HZY<sup>+12</sup>]. **field-effect** [HZY<sup>+12</sup>]. **Fields** [CThG15]. **File** [WX15]. **Files** [ZCX<sup>+17</sup>]. **Fin** [BSS16]. **Fine** [SMT<sup>+17</sup>, MLK<sup>+08</sup>]. **Fine-Grain** [SMT<sup>+17</sup>, MLK<sup>+08</sup>]. **FinFET** [BJ10, BSS16, CMJ14, CJ14a, CJ14b, CJ15, GJ17, KCWL<sup>+16</sup>, LJ10, MMJ09, SSF<sup>+15</sup>, TJ13a, TJ13b, TGCJ16, YJ18, ZJ11]. **FinFET-Based** [SSF<sup>+15</sup>, ZJ11, LJ10]. **FinFETs** [CJ16, GVRR17, GJ17]. **Flash** [HC15, YYBK19]. **Flexible** [BKJ19, PAF18, HCTK08, LWH14]. **Flip** [AM18]. **Flip-N-Write** [AM18]. **Floating** [HC15, NV14]. **Flow** [GCB14, DMR06, ZJS09c]. **fluids** [RBGC14]. **Fluigi** [HD14]. **Formal** [CCTP08, GYM<sup>+17</sup>]. **Formalizing** [FHFK14]. **formulation** [YYC07]. **formulations** [ZMT13]. **FPGA** [LLX<sup>+18a</sup>, LLX<sup>+18b</sup>, LMM18]. **FPGA-Based** [LLX<sup>+18b</sup>]. **FPGAs** [RT07]. **Framework** [CJ15, KPFM16, LPB<sup>+15</sup>, LLX<sup>+18b</sup>, NPH18, PRG<sup>+15</sup>, SDSS14, MCT10]. **Fredkin** [DJ08]. **Free** [DBG<sup>+14</sup>, GLMG<sup>+15</sup>, LKC15, Mog14, WRWW17, YL14]. **Frequency** [JOF<sup>+15</sup>, KAKSP14, LTKP16]. **Frontiers** [CLSD18]. **Frontside** [DDR<sup>+16a</sup>]. **Fully** [CCWCC15, KXY16]. **Function** [LQYL19]. **Functional** [GCO<sup>+11</sup>, Sek07]. **Functions** [DDR<sup>+16b</sup>, SWK<sup>+16</sup>, UMB<sup>+18</sup>, PT12]. **Fundamentals** [PLC<sup>+13</sup>]. **future** [CA11, MN06].

**GALS** [PCD<sup>+11</sup>]. **Garbage** [DBG<sup>+14</sup>, Mog14, TR10]. **Garbage-Free** [DBG<sup>+14</sup>, Mog14]. **GARDENIA** [XCS<sup>+19</sup>]. **gas** [HYWA09]. **Gate** [HC15, LSH14]. **Gated** [BJ10]. **Gated-diode** [BJ10]. **Gates** [AHSZ16, CJ14a, DWK<sup>+16</sup>, HZSA14, DJ08]. **Gating** [HN12, ZF15]. **Geckos** [GSC17].

**gem5** [CJ15]. **gem5-PVT** [CJ15]. **generalized** [RBGC14]. **Generation** [XCS<sup>+19</sup>]. **Generators** [LTKP16]. **Genes** [AAFM13]. **Genetic** [MZR<sup>+14</sup>]. **genomics** [GN08]. **geographically** [AMVG12]. **Geometric** [DSB16]. **global** [XPD12]. **GPGPU** [WX15]. **GPU** [LLX<sup>+18a</sup>]. **GPU-Outperforming** [LLX<sup>+18a</sup>]. **GPUs** [ZCX<sup>+17</sup>]. **Grain** [SMT<sup>+17</sup>, MLK<sup>+08</sup>]. **Graph** [XCS<sup>+19</sup>]. **Graphene** [HC15, KHR<sup>+15</sup>, WZSC09]. **Graphene-based** [WZSC09]. **green** [AMVG12, PG12]. **greener** [GD12]. **Grid** [ZGSA15]. **Guarantees** [GYM<sup>+17</sup>]. **Guest** [CLKG17, Shu09, SK16, TSB15, TSMCB17, Ano18, CLSD18, FNO<sup>+19</sup>].

**H** [HCTK08]. **Hardening** [LBB<sup>+18</sup>]. **Hardware** [BSY<sup>+16</sup>, CLKG17, CLSD18, CCWCC15, CKWK18, GFZ13, HIH18, KCD15, LQYL19, LJL18, LCK19, PJSM17, SLC<sup>+17</sup>, XLW<sup>+18</sup>, TMM<sup>+07</sup>]. **Hardware-Based** [LQYL19]. **Harvesting** [RFDT15, ZSXY11, KP10, MCT10, WOW<sup>+10</sup>, WCSA10]. **HDL** [OSLT06]. **HDLQ** [OSLT06]. **Hermitian** [AHSZ16, HZSA14]. **Heterogeneous** [AAFM13, CTP14, HTMH18, KHR<sup>+15</sup>, LGL15, VK18]. **Heterojunction** [KCWL<sup>+16</sup>]. **Heuristic** [BM15, PT12]. **Hiding** [FHFK14]. **Hierarchical** [YXW<sup>+12</sup>]. **Hierarchy** [PHS<sup>+15</sup>, VSRR15]. **High** [ASP<sup>+18</sup>, BYHT18, BH17, CJ16, GN08, LTKP16, MTC<sup>+08</sup>, PAB<sup>+17</sup>, PSY<sup>+18</sup>, SC08, XLL<sup>+18</sup>, Bea11, BPH<sup>+11</sup>, CA11, LMC<sup>+11</sup>, MN06, PFOL07, RMBC12, WWJ09, ZS08, SM11]. **high-** [MP10]. **high-efficiency** [ZS08]. **High-level** [MTC<sup>+08</sup>, SC08]. **High-Performance** [ASP<sup>+18</sup>, BH17, CJ16, PSY<sup>+18</sup>, Bea11, BPH<sup>+11</sup>, LMC<sup>+11</sup>, WWJ09, SM11]. **High-Speed** [BYHT18, LTKP16, PAB<sup>+17</sup>, XLL<sup>+18</sup>]. **high-throughput** [CA11, RMBC12].

**Highlights** [DR11]. **Highly** [HN12].  
**History** [Ko12]. **HMC** [HTMH18]. **hosting** [AMVG12]. **Human** [KWWI17].  
**Human-Scale** [KWWI17]. **HW** [JRLR15].  
**HW/SW** [JRLR15]. **Hybrid** [DJ16, HH11, LQYL19, LWM<sup>+</sup>14, PHS<sup>+</sup>15, WDW13, YYPK17, YYBK19, CB09, CJ14b, LBGR08, LMC<sup>+</sup>11, RT07, SCI<sup>+</sup>09, ZJS09a, ZJS09c, ZJS09b, ZJS10].

**IC** [CH14]. **iConn** [LGL15]. **ICs** [ARLB18, CKC<sup>+</sup>18, FRB08, SCL17, TZS14, XS14].  
**identification** [CWT14]. **identify** [PT12].  
**Idle** [SLC<sup>+</sup>17]. **IEEE** [Shu09]. **IEEE/ACM** [Shu09]. **II** [ZJS09c]. **ILP** [ZMT13]. **Image** [PSR17, LM13]. **IMFlexCom** [PAF18].  
**Impact** [BSS16, DNHL11, KAKSP14, KKC17, MGK18]. **Implantable** [BY12, HLH<sup>+</sup>12, Ko12, MGS<sup>+</sup>12, SSN12, SCZ<sup>+</sup>12].  
**Implementation** [JOF<sup>+</sup>15, LLX<sup>+</sup>18b, LMM18, PCD<sup>+</sup>11, SSN12, XLW<sup>+</sup>18].  
**Implementations** [DBG<sup>+</sup>14].  
**Implementing** [SMR<sup>+</sup>12]. **Implicant** [PT14a]. **Implicant-Implicit** [PT14a].  
**implications** [VO06]. **Implicit** [PT14a].  
**Improve** [HSZM17]. **Improved** [DRSR14, PT14a, PSR17, ZJ11].  
**improvement** [ANR<sup>+</sup>14, FRB08].  
**Improving** [CMM<sup>+</sup>18, ON15, SCL17, YWF18].  
**In-Field** [BMB18]. **In-Memory** [NHL<sup>+</sup>17, PAF18]. **Incremental** [XLW<sup>+</sup>18].  
**independent** [Tah06]. **indoor** [WOW<sup>+</sup>10].  
**Induced** [VDB<sup>+</sup>16]. **Inductor** [TZS14].  
**Inductor-Based** [TZS14]. **inductors** [SXL<sup>+</sup>12]. **Inexact** [KT14]. **Information** [AAFM13, HLS14, DWL10].  
**information-theoretic** [DWL10].  
**Infrastructure** [LGL15, AMA<sup>+</sup>14].  
**Injection** [DDR<sup>+</sup>16a, JWJ<sup>+</sup>17]. **Inspired** [CZQK15, BY18, CQZK14]. **instability** [KCC<sup>+</sup>14]. **Integer** [DBG<sup>+</sup>14]. **integral** [KTW08]. **Integrated** [BS15, ISI<sup>+</sup>18, KKC17, NLK<sup>+</sup>13, TJ13b, XC08, XLL<sup>+</sup>18, ZXC10, Bea11, BCT<sup>+</sup>13, HCTK08, MN06, WFCX09, XCF08].

**Integration** [AAFM13, KWWI17, MLK<sup>+</sup>08, SX11].  
**Intelligence** [Dea14]. **Interaction** [CV11].  
**Interactions** [NPA<sup>+</sup>12]. **Interconnect** [BPS19, MN06, MTC<sup>+</sup>08]. **interconnection** [LJ10]. **Interconnects** [LLSO17, LKL<sup>+</sup>18, Bea11]. **Interface** [WKL16, XDX14]. **interference** [XHSC07].  
**Interpreting** [GCB14]. **interstitial** [SC06].  
**Introduction** [Ano18, AD14, BC08, Bah09, BY12, CLKG17, CLSD18, DR11, Edi14, FNO<sup>+</sup>19, Gui13, HN15, KP10, LC08, MSW14, PG12, PR13, SX11, SS15, SN11, WDT14].  
**Intrusion** [BYHT18]. **Investigating** [MLK<sup>+</sup>08]. **IoT** [STSG17]. **Iris** [LMC<sup>+</sup>11].  
**irregular** [LDL10]. **Irreversible** [HLS14].  
**Issue** [BY12, DMYT15, DR11, Gui13, HN15, MSW14, SS15, SK16, SN11, TSB15, TSMCB17, TV17, WDT14, AD14, BC08, CS07, Edi14, McK07, PG12, PR13, XCF08].

**JETC** [BC08, TV17]. **JETC/TODAES** [BC08]. **Job** [MNT14]. **joint** [BC08].  
**Junction** [VDB<sup>+</sup>16]. **Junctionless** [BSS16].

**Keeping** [ABS<sup>+</sup>12]. **Key** [BBB<sup>+</sup>16].  
**Kilocore** [ACJ17]. **Kogge** [BSL<sup>+</sup>18].

**L2** [PAB<sup>+</sup>17]. **lab** [ZXC10]. **lab-on-chip** [ZXC10]. **labeling** [EWKNW07]. **Language** [OBLD14]. **Large** [Bea11, KCD15, PDL15, SWK<sup>+</sup>16].  
**Large-Scale** [KCD15, Bea11]. **Laser** [DDR<sup>+</sup>16a, LKL<sup>+</sup>18]. **Lasers** [FC18].  
**Latency** [DKK<sup>+</sup>15, CA11]. **Layer** [BS15, VRBS16, DKK<sup>+</sup>15, LLSO17, PRG<sup>+</sup>15, SS15, ZGSA15]. **layout** [RMBC12]. **LC** [SXL<sup>+</sup>12]. **LDPC** [LPW18].  
**Leakage** [CMJ14, CJ16, CJ14b, GJ17, LSH14].  
**Leakage/Delay** [CMJ14]. **learnable**



[YYBK19]. **Learning** [AMF<sup>+15</sup>, CLKG17, CLSD18, CZQK15, KPPB17, KPFM16, PSR17, PSY<sup>+18</sup>, SPR18, ZY18, ZK18, CQZK14]. **Learning-Based** [ZY18]. **Level** [ARLB18, CCW18, CZW<sup>+19</sup>, DRL<sup>+19</sup>, JWJ<sup>+17</sup>, LLX<sup>+18b</sup>, MTC<sup>+08</sup>, MP10, Moh12, SC08]. **library** [LCJ14]. **life** [ZJT<sup>+14</sup>]. **light** [WOW<sup>+10</sup>]. **like** [HMS<sup>+05</sup>]. **Limit** [LCK19]. **limits** [GMM12]. **Literature** [AAF13]. **Loads** [ZSXY11]. **Locally** [DNHL11]. **Logic** [AHSZ16, CJ14a, CJ16, CNH12, GCO<sup>+11</sup>, GUP11, GVRR17, LCSP14, LP17, LMM18, MS17, NLL<sup>+17</sup>, PT14a, SSP14, SWK<sup>+16</sup>, VGZ11, ANR<sup>+14</sup>, CJ14b, DJ08, HMS<sup>+05</sup>, LJ14, LCT12, MTC<sup>+08</sup>, PT12, TR13, ZMT13]. **Logic-Based** [NLL<sup>+17</sup>, TR13]. **Long** [ZSPC19]. **Loop** [SSN12]. **Loss** [HLS14]. **Low** [CJ16, Che15, GBLD15, GLMG<sup>+15</sup>, KZW<sup>+15</sup>, KHR<sup>+15</sup>, KR18, MGS<sup>+12</sup>, MMJ09, PRG<sup>+15</sup>, RMW<sup>+17</sup>, SLC<sup>+17</sup>, STSG17, SGR<sup>+12</sup>, SSF<sup>+15</sup>, Tah09, TSB15, ZJS10, ZJ11, ABS<sup>+12</sup>, CJ14b, CA11, GJ17, KT14, LBGR08, LMC<sup>+11</sup>, MFA<sup>+13</sup>, WDH<sup>+09</sup>]. **low-cost** [LBGR08]. **low-latency** [CA11]. **Low-overhead** [Tah09]. **Low-Power** [GBLD15, GLMG<sup>+15</sup>, KHR<sup>+15</sup>, KR18, PRG<sup>+15</sup>, RMW<sup>+17</sup>, SGR<sup>+12</sup>, MMJ09, ZJS10, ABS<sup>+12</sup>, KT14, LBGR08, LMC<sup>+11</sup>, WDH<sup>+09</sup>]. **Low-Swing** [SSF<sup>+15</sup>]. **LTPS** [LBGR08].

**Machine** [KPPB17, KPFM16, YP17]. **Machine-Learning** [KPFM16]. **Magnetic** [LBJ<sup>+16</sup>, VDB<sup>+16</sup>, AKW<sup>+13</sup>, DK09]. **Main** [YYBK19, YXD<sup>+17</sup>]. **majority** [HMS<sup>+05</sup>]. **majority-like** [HMS<sup>+05</sup>]. **Management** [HTMH18, LHW<sup>+17</sup>, PHS<sup>+15</sup>, PRG<sup>+15</sup>, ZJ11, FRB08, GMM12, MP10, MCT10]. **manager** [AMVG12]. **Managing** [NPH18]. **Manufacturing** [CZW<sup>+19</sup>]. **Manufacturing-Based** [CZW<sup>+19</sup>]. **Many** [DMYT15, KPFM16]. **Many-Core** [DMYT15, KPFM16]. **Manycores** [PHS<sup>+15</sup>]. **Map** [RMG15]. **Mapping** [FC18, GCO<sup>+11</sup>, GUP11, ZMT13]. **March** [SN10]. **Markov** [GD12, KR18]. **Matching** [RDH14]. **MATE** [PHS<sup>+15</sup>]. **materials** [BPH<sup>+11</sup>]. **Matrix** [DD14, GCO<sup>+11</sup>, GUP11]. **Maximum** [KAKSP14]. **Measure** [BS15]. **mechanical** [LWH14, WCSA10]. **Mechanisms** [LBB<sup>+18</sup>]. **Memories** [CCWCC15, HH11, LBJ<sup>+16</sup>, SCZ<sup>+12</sup>, YYPK17, GRS05, RYT<sup>+07</sup>]. **Memory** [GLMG<sup>+15</sup>, GG17, HTMH18, HC15, KPPB17, KHR<sup>+15</sup>, KKKK18, LYWW13, MRR12, Mit17, NHL<sup>+17</sup>, PHS<sup>+15</sup>, PAF18, RMW<sup>+17</sup>, WDW13, WRWW17, WZL16, YYPK17, YYBK19, YXD<sup>+17</sup>, ZSPC19, ABS<sup>+12</sup>, AKW<sup>+13</sup>, CSKM13, KSG14, PR13, SKRX13, TCSV09, VMNI08, ZJS09a]. **Memory-Centric** [KPPB17]. **Memory-Storage** [YYPK17]. **Memristive** [CZQK15, GLMG<sup>+15</sup>, KZL15, MRR12, UMB<sup>+18</sup>, WKL16, YW13, ZK18]. **Memristor** [ASP<sup>+18</sup>, BYHT18]. **Memristor-Based** [BYHT18]. **Memristor-CMOS** [ASP<sup>+18</sup>]. **mesh** [EWKNW07]. **meshless** [KTW08]. **Method** [BBB<sup>+16</sup>, GCO<sup>+11</sup>, XYM18, YYBK19, ZSXY11, MHM<sup>+08</sup>]. **Methodology** [CMJ14, CH14, CB09]. **Methods** [CZQK15, TSMCB17, CCTP08]. **metric** [SMR<sup>+12</sup>]. **Metrics** [HSZM17]. **MFNW** [AM18]. **Microarchitectural** [GOGCK11]. **microarchitecture** [MLK<sup>+08</sup>]. **microarchitectures** [XCF08]. **Microarrays** [SKB13]. **Microdevices** [VMV13]. **Microfluidic** [BMB18, GCB14, HD14, LBB<sup>+18</sup>, MPM13, OGB18, DJRM09, DDM<sup>+06</sup>, RMBC12, RBGC14, SC08, XHSC07, XC08, YYC07, ZXC10]. **microfluidics** [CZ05, SC06]. **microfluidics-based** [CZ05, SC06]. **Millimeter** [MKW<sup>+14</sup>, KK12]. **Millimeter-Wave** [MKW<sup>+14</sup>]. **Million** [AVK16]. **Million-Qubit** [AVK16].

**Minimization** [CCH16, LJL18]. **Minimum** [LCSP14]. **MINLP** [BM15]. **Mitigation** [NLK<sup>+</sup>13]. **Mixed** [DRL<sup>+</sup>19]. **Mixed-Criticality** [DRL<sup>+</sup>19]. **mixing** [RBGC14]. **MLC** [AM18, LHW<sup>+</sup>17]. **MLC/TLC** [AM18]. **MN** [PHS<sup>+</sup>15]. **MN-MATE** [PHS<sup>+</sup>15]. **mNoC** [PDL15]. **Mobile** [TSMCB17, YYPK17, WDH<sup>+</sup>09]. **Mode** [BSS16, PAF18]. **Model** [BM15, CCWCC15, FYJ<sup>+</sup>17, MZR<sup>+</sup>14, DLWW08, MHL08, MTC<sup>+</sup>08, ZC07]. **Modeling** [LTKP16, MN06, SSN12, TGCJ16, TKBM12, ZF15, KCC<sup>+</sup>14, KSG14, PFOL07]. **Models** [KCD15, MHW14, FRB08]. **Modular** [MHW14]. **Modularization** [FHK14]. **Modulation** [MGK18]. **Module** [MPM13, LCJ14, ZS08]. **Module-Based** [MPM13]. **Modules** [TGCJ16]. **Molecular** [CNHL08, DPB11, GPW<sup>+</sup>15, PDL15, WDW13, KSG14, KTW08, MHL08, RYT<sup>+</sup>07]. **Monitoring** [MGS<sup>+</sup>12]. **Monolayer** [RMW<sup>+</sup>17]. **Monolithic** [CKC<sup>+</sup>18, KKC17, BCT<sup>+</sup>13, XDX14]. **MOS** [KZW<sup>+</sup>15]. **MRAM** [AKW<sup>+</sup>13, DSB16, PAF18, SFD17, STSG17, VDB<sup>+</sup>16]. **MRAM-Based** [VDB<sup>+</sup>16]. **MRAMs** [MFA<sup>+</sup>13, PFRR17]. **Muller** [LJ14]. **Multi** [DRL<sup>+</sup>19, LLSO17, LLX<sup>+</sup>18b, PRG<sup>+</sup>15, LM13]. **Multi-Abstraction-Level** [DRL<sup>+</sup>19]. **Multi-Layer** [LLSO17]. **Multi-Level-Optimization** [LLX<sup>+</sup>18b]. **multi-peak** [LM13]. **Multi-Processors** [PRG<sup>+</sup>15]. **Multicast** [CDP17]. **Multicast-Enabled** [CDP17]. **multicomputer** [VMNI08]. **Multicore** [CDP17, PCD<sup>+</sup>11, WXW<sup>+</sup>17, ZMC15, KWFH12, SLS<sup>+</sup>14]. **multidiscipline** [Moh12]. **Multilayer** [HC15, MHM<sup>+</sup>08, BPH<sup>+</sup>11]. **Multilevel** [MRR12, VSRR15, CWL<sup>+</sup>13, FGZ14]. **Multiparameter** [CJ16, GJ17]. **Multiple** [DDM<sup>+</sup>06, HZSA14, MMJ09]. **Multiple-Controlled** [HZSA14]. **Multiplexing** [XLL<sup>+</sup>18]. **Multiplication** [GP17]. **Multiplier** [LQYL19]. **Multipliers** [Mog14, SVA<sup>+</sup>18]. **Multiprocessor** [YXW<sup>+</sup>12, CJ14b, GMM12, LWX<sup>+</sup>14]. **multiprocessors** [BPH<sup>+</sup>11, CA11]. **Multistate** [KHR<sup>+</sup>15]. **multiwalled** [SXL<sup>+</sup>12]. **mW** [WOW<sup>+</sup>10]. **N** [AM18]. **NANA** [PDLS06]. **Nano** [GKT<sup>+</sup>18, YLF<sup>+</sup>17, CB09, LDL10, MP10, PDLS06, SCI<sup>+</sup>09, ZMT13, ZJS10, ZC07, MRR12, ZJS09c, ZJS09a, ZJS09b]. **nano-architectures** [ZMT13]. **nano-CMOS** [MP10, SCI<sup>+</sup>09, ZC07]. **Nano-Oscillator-Based** [YLF<sup>+</sup>17]. **Nano-Oscillators** [GKT<sup>+</sup>18]. **nano-scale** [LDL10, PDLS06]. **nano/CMOS** [ZJS10, ZJS09c, ZJS09a, ZJS09b]. **NANOARCH** [Bah09]. **NANOARCH07** [Shu09]. **NANOARCH'09** [DR11]. **nanoarchitectures** [Tah06, Tah09]. **Nanoarray** [FGZ14, GRS05]. **nanocomputing** [WWJ09]. **Nanocrossbar** [GUP11]. **Nanodevice** [GCO<sup>+</sup>11, WZSC09]. **Nanodevice-Based** [GCO<sup>+</sup>11]. **Nanodevices** [CZQK15]. **Nanoelectronic** [TSMCB17, YL14]. **nanofabrics** [DMR06]. **Nanomagnet** [CNH12]. **Nanomagnetic** [VGZ11]. **nanometer** [CCTP08]. **nanometer-scale** [CCTP08]. **Nanophotonic** [ISI<sup>+</sup>18, LLSO17, LKL<sup>+</sup>18, NPA<sup>+</sup>12, PDL15, XYM18, LMC<sup>+</sup>11, SX11]. **Nanopipelined** [PT14b]. **Nanoribbon** [HC15, KHR<sup>+</sup>15]. **Nanoribbon-CMOS** [KHR<sup>+</sup>15]. **Nanoscale** [JRC<sup>+</sup>13, NLK<sup>+</sup>13, Shu09, CQZK14, EWKNW07, Nar05, RT07, RT08, WZSC09]. **nanostructures** [HYWA09]. **nanosystem** [TWL09]. **Nanotube** [GRPT13, HC15, DLWW08, HZY<sup>+</sup>12, MN06, SXL<sup>+</sup>12]. **Nanotube-Based** [GRPT13, MN06]. **Nanowire** [Deh05, RKM15]. **Nanowire-based** [Deh05]. **nanowires** [SRD<sup>+</sup>06]. **NBTI**

[KCC<sup>+</sup>14, LSH14, SLS<sup>+</sup>14, YWH<sup>+</sup>13]. **NBTI-aware** [YWH<sup>+</sup>13]. **Near** [GVR17, KXY16, Mit16, NPA<sup>+</sup>12, SCL17]. **Near-** [GVR17]. **Near-Field** [NPA<sup>+</sup>12]. **Near-Threshold** [Mit16, SCL17]. **negative** [KCC<sup>+</sup>14]. **NEMS** [HN12]. **net** [BPB<sup>+</sup>12]. **net-zero** [BPB<sup>+</sup>12]. **Network** [BKJ19, Bis17, CMM<sup>+</sup>18, CDP17, CCWCC15, DJ16, KKKK18, LDK<sup>+</sup>18, LQYL19, LLX<sup>+</sup>18b, MSCS19, PDL15, VK18, VSM19, XYM18, ZSPC19, BPH<sup>+</sup>11, CDG<sup>+</sup>12, LMC<sup>+</sup>11, PDL06, PT14b, WVG13, ZFT13, YXW<sup>+</sup>12]. **network-enabled** [WVG13]. **Network-on-Chip** [BKJ19, Bis17, CMM<sup>+</sup>18, DJ16, LDK<sup>+</sup>18, MSCS19, PDL15, VK18, VSM19, BPH<sup>+</sup>11, CDG<sup>+</sup>12, WVG13, YXW<sup>+</sup>12]. **Networks** [AHS17, VRBS16, CKC<sup>+</sup>18, CTP14, Dea14, FNO<sup>+</sup>19, KCD15, LPB<sup>+</sup>15, LLX<sup>+</sup>18a, LJL18, PJSM17, PSY<sup>+</sup>18, SPR18, XLW<sup>+</sup>18, GD12, LJ10, LDL10, LWX<sup>+</sup>14, XPD12]. **Networks-on-Chip** [VRBS16, CTP14, FNO<sup>+</sup>19]. **Neural** [AHS17, CKC<sup>+</sup>18, CThG15, CCWCC15, KKKK18, KCD15, LLX<sup>+</sup>18a, LQYL19, LLX<sup>+</sup>18b, LJL18, SVA<sup>+</sup>18, SPR18, XLW<sup>+</sup>18]. **Neuro** [CZQK15, CQZK14]. **Neuro-Inspired** [CZQK15, CQZK14]. **Neuromorphic** [Aho18, AMF<sup>+</sup>15, HN15, KZL15, KCD15, MKSW17, PSY<sup>+</sup>18, RMG15, SPR18, WKL16, ZWL<sup>+</sup>15]. **Neuron** [HIH18]. **Neutral** [LPB<sup>+</sup>15]. **Next** [GFZ13, XCS<sup>+</sup>19]. **Next-Generation** [XCS<sup>+</sup>19]. **NML** [DNHL11]. **NoC** [ACJ17, DRL<sup>+</sup>19, KYEB15, MKW<sup>+</sup>14, ZF15]. **NoC-Based** [ZF15]. **NoCs** [FC18, GB18, LKC15, LCK19, SHAC19, ZY18]. **Node** [PHS<sup>+</sup>15, YWH<sup>+</sup>13]. **Nodes** [GVR17, LWM<sup>+</sup>14, TGCJ16]. **Non** [GKT<sup>+</sup>18, MCT18, STSG17, YYPK17, YXD<sup>+</sup>17]. **Non-Boolean** [GKT<sup>+</sup>18]. **Non-Restoring** [MCT18]. **Non-Volatile** [STSG17, YYPK17, YXD<sup>+</sup>17]. **Nonhierarchical** [PPM<sup>+</sup>13]. **Nonlinear** [KKKK18]. **Nonvolatile** [HC15, LBJ<sup>+</sup>16, SCZ<sup>+</sup>12, SKRX13]. **Novel** [DJ16, SKB13, TZS14, ZSXY11, RT08]. **NTC** [CV12]. **NUCA** [PAB<sup>+</sup>17]. **Number** [HH11, LTKP16]. **Obfuscation** [CZW<sup>+</sup>19]. **Objectives** [DWK<sup>+</sup>16]. **Observing** [TGCJ16]. **off** [ZFT13]. **Off-Chip** [WXW<sup>+</sup>17, ZFT13]. **Offline** [LKL<sup>+</sup>18, MT14]. **offs** [CDG<sup>+</sup>12]. **On-Chip** [CLKG17, CZQK15, CKC<sup>+</sup>18, LWM<sup>+</sup>14, TZS14, XYM18, CLSD18, CWL<sup>+</sup>13, LWX<sup>+</sup>14, CA11, LMC<sup>+</sup>11]. **On/Off** [WXW<sup>+</sup>17]. **On/Off-Chip** [WXW<sup>+</sup>17]. **One** [HSZM17, WRWW17]. **One-Step** [WRWW17]. **One-Way** [HSZM17]. **Online** [LJL18]. **Operation** [MPM13]. **Operations** [CVK15]. **Optical** [BPS19, VRBS16, DWK<sup>+</sup>16, GB18, NPA<sup>+</sup>12, PAB<sup>+</sup>17, XLL<sup>+</sup>18, YXW<sup>+</sup>12, ZY18, CA11]. **Optical-Electronic** [YXW<sup>+</sup>12]. **Optimization** [DKK<sup>+</sup>15, DWK<sup>+</sup>16, LDK<sup>+</sup>18, LLX<sup>+</sup>18b, LKL<sup>+</sup>18, PFRR17, TGCJ16, YJ18, ZY18, ZGSA15, DLWW08, LWH14, WFCX09, ZJS09c]. **optimizations** [CWL<sup>+</sup>13]. **Optimize** [DJ16]. **Optimized** [CCWCC15, KKKK18, MS17, MCT18, ON15]. **optimizing** [TR10]. **Oracle** [GCJ17]. **Order** [CKWK18]. **Organizing** [DK09, RMG15, LDL10, PDL07]. **Oscillator** [FYJ<sup>+</sup>17, YLF<sup>+</sup>17, SXL<sup>+</sup>12, ZFT13]. **Oscillator-Based** [FYJ<sup>+</sup>17]. **Oscillators** [GKT<sup>+</sup>18]. **Outperforming** [LLX<sup>+</sup>18a]. **outputs** [TR10]. **Overhead** [SLC<sup>+</sup>17, ZJ11, Tah09]. **Overlay** [PAB<sup>+</sup>17]. **p** [DPB11]. **p-QCA** [DPB11]. **Packet** [BYHT18]. **Packets** [Bis17]. **Page** [KXY16]. **PANE** [VSM19]. **Papers** [SN10]. **paradigm** [LBGR08, WZSC09]. **Parallel** [Dea14, ISI<sup>+</sup>18, DJRM09, STA<sup>+</sup>12]. **Parallelism** [JOF<sup>+</sup>15, GN08]. **parameter** [RYT<sup>+</sup>07]. **Parametric** [FRB08].

**Parasitics** [KCWL<sup>+</sup>16]. **Part** [ZJS09c, ZJS09b]. **Partial** [LKC15]. **Partitioning** [LRN05]. **Passive** [GSC17]. **Path** [CKWK18, GB18, VAK18, WRWW17, CWT14, ZXC10]. **Path-Setup** [GB18]. **paths** [ANR<sup>+</sup>14]. **Pattern** [HSZM17]. **Pauli** [HZSA14]. **PCM** [KXY16, LHW<sup>+</sup>17]. **peak** [LM13]. **Peres** [DJ08]. **Performance** [AVK16, ASP<sup>+</sup>18, BSS16, BH17, CDG<sup>+</sup>12, CKC<sup>+</sup>18, CJ16, DNHL11, HTMH18, LYWW13, MKW<sup>+</sup>14, ON15, PSY<sup>+</sup>18, SCL17, VAK18, YWF18, Bea11, BPH<sup>+</sup>11, DLWW08, LMC<sup>+</sup>11, LCT12, MN06, PFOL07, RT07, STA<sup>+</sup>12, WWJ09, SM11]. **performance-aware** [STA<sup>+</sup>12]. **Performance-Temperature** [HTMH18]. **Phase** [FYJ<sup>+</sup>17, SMT<sup>+</sup>17, WZL16, JRC<sup>+</sup>13]. **Phase-Change** [WZL16]. **Photonic** [ACJ17, BPH<sup>+</sup>11, CDP17, FC18, VK18]. **Photonics** [XNK18, Bea11]. **Physical** [LBB<sup>+</sup>18, UMB<sup>+</sup>18, BCT<sup>+</sup>13, HZY<sup>+</sup>12]. **PicoServer** [KSB<sup>+</sup>08]. **Piezoelectric** [RFDT15]. **pillar** [MFA<sup>+</sup>13]. **Pin** [WXW<sup>+</sup>17, XHSC07]. **pin-constrained** [XHSC07]. **Pipeline** [SM11]. **PLA** [CNH12]. **Placement** [BM15, VRBS16, BKJ19, LWH14, YYC07, LRN05]. **PLAs** [CHN09]. **Plasticity** [AMF<sup>+</sup>15]. **Pluggable** [VSM19]. **Point** [LYWW13, NV14]. **Pointing** [LBJ<sup>+</sup>16]. **Polarity** [MGZ<sup>+</sup>17]. **Policies** [ON15]. **Polynomials** [LP17]. **Pooling** [ZMC15]. **portability** [GN08]. **post** [XS14]. **post-bond** [XS14]. **Power** [CKC<sup>+</sup>18, Che15, FC18, GBLD15, GLMG<sup>+</sup>15, HN12, JRLR15, KZW<sup>+</sup>15, KHR<sup>+</sup>15, KR18, LBJ<sup>+</sup>16, LHW<sup>+</sup>17, LWM<sup>+</sup>14, LKL<sup>+</sup>18, MGS<sup>+</sup>12, PRG<sup>+</sup>15, RMW<sup>+</sup>17, STSG17, SGR<sup>+</sup>12, TGCJ16, TSB15, WXW<sup>+</sup>17, ZJ11, ZSXY11, ZY18, ZGSA15, ZF15, ABS<sup>+</sup>12, ANR<sup>+</sup>14, GMM12, KT14, KK12, LJ10, LBGR08, LMC<sup>+</sup>11, MMJ09, MP10, MFA<sup>+</sup>13, WD<sup>+</sup>09, XDX14, ZS08, ZJS10, ZFT13]. **power-efficient** [ANR<sup>+</sup>14]. **Power-Gating** [HN12, ZF15]. **Power-Utility-Driven** [LHW<sup>+</sup>17]. **Powered** [JRLR15, WCSA10]. **Powerful** [VMV13]. **PPU** [GYM<sup>+</sup>17]. **pre** [XS14]. **pre-bond** [XS14]. **Prediction** [MKSW17]. **Predictive** [DKK<sup>+</sup>15, ZC07]. **Prefetching** [YBKB19]. **Pressure** [MGS<sup>+</sup>12]. **Primitive** [GRPT13]. **Primitives** [BSY<sup>+</sup>16, HMS<sup>+</sup>05]. **Proactive** [PRG<sup>+</sup>15]. **Probabilistic** [KSG14, KT14]. **Probability** [VAK18]. **Probes** [SKB13]. **problem** [EWKNW07]. **Process** [GPW<sup>+</sup>15, KAKSP14, MGK18, SCL17, XYM18, XPD12]. **Process-Variation-Tolerant** [XYM18]. **Processing** [AL17, BH17, XCS<sup>+</sup>19, Gla14, KT14, LM13]. **processing-in-wire** [Gla14]. **Processor** [GKT<sup>+</sup>18, GYM<sup>+</sup>17, KZL15, Mit17, STSG17, WXW<sup>+</sup>17, YJ18]. **Processors** [KAKSP14, PRG<sup>+</sup>15, SLC<sup>+</sup>17, WKL16, ZMC15, ZWL<sup>+</sup>15]. **productivity** [SMR<sup>+</sup>12]. **Programmable** [AMF<sup>+</sup>15, DPB11, Deh05, WD<sup>+</sup>09]. **Project** [TMM<sup>+</sup>07]. **Promises** [YW13]. **Prospect** [PFOL07]. **Prosthesis** [SSN12]. **Protecting** [LCK19]. **Protein** [PPM<sup>+</sup>13]. **Protocol** [YWF18]. **PROTON** [VRBS16]. **Provide** [SLC<sup>+</sup>17]. **ProWATCH** [PRG<sup>+</sup>15]. **Pruning** [AHS17]. **PUF** [DSB16, VDB<sup>+</sup>16]. **PUFs** [IGR<sup>+</sup>16]. **PVFS** [JOF<sup>+</sup>15]. **PVT** [CMJ14, CJ14a, CJ15, TGCJ16, YJ18]. **QCA** [CNHL08, CHN09, DPB11, DK09, Gla14, GPW<sup>+</sup>15, HMS<sup>+</sup>05, LRN05, MHL08, OSLT06, SWJ07, SDSS14, TCSV09]. **QCA-based** [CHN09]. **QLib** [LCJ14]. **Quantifying** [HLS14, NPH18]. **Quantization** [XLW<sup>+</sup>18]. **Quantum** [AVK16, AHSZ16, BM15, BH17, CVK15, CV11, DD14, DPB11, GCJ17, HZSA14, HSZM17, LCSP14, LCJ14, MCT18, NV14, PSY<sup>+</sup>18, RDH14, VAK18, CV12, DWL10, MTC<sup>+</sup>08, TR10, VO06, VMNI08, WD<sup>+</sup>09]. **Quantum-Dot** [DPB11, DWL10].

**Quantum-Logic** [AHSZ16]. **Qubit** [AVK16, MCT18]. **QuickRecall** [JRLR15].  
**Radial** [SRD<sup>+</sup>06]. **Radix** [GUP11]. **RAM** [CWL<sup>+</sup>13, LPW18, RKM15, ZCX<sup>+</sup>17].  
**Random** [KR18, LTKP16, LBJ<sup>+</sup>16, AKW<sup>+</sup>13, CSKM13, SWJ07]. **Randomized** [SHAC19]. **Randomly** [CThG15]. **Read** [WRWW17, ZCX<sup>+</sup>17]. **Real** [DRL<sup>+</sup>19, GSC17, JWJ<sup>+</sup>17, KR18, KPFM16, LWX<sup>+</sup>14]. **Real-Time** [DRL<sup>+</sup>19, GSC17, JWJ<sup>+</sup>17, KR18, KPFM16, LWX<sup>+</sup>14]. **Realization** [BSL<sup>+</sup>18]. **Realizing** [SDSS14]. **reasonable** [CNHL08]. **Recognition** [CKC<sup>+</sup>18, PSR17]. **Reconfigurable** [CEW<sup>+</sup>13, CCH16, CDP17, CNH12, KPPB17, KZL15, NLL<sup>+</sup>17, VK18, EWKNW07, Sek07, SC06, Tah06, ZJS09a, ZJS09c, ZJS09b, ZJS10]. **Recorder** [SCZ<sup>+</sup>12]. **Recovery** [KCC<sup>+</sup>14, Sek07, ZXC10]. **Recurrent** [LJL18]. **REDELf** [LKC15]. **Redesign** [YXD<sup>+</sup>17]. **Reduced** [SGR<sup>+</sup>12]. **Reducing** [FC18, LBJ<sup>+</sup>16]. **reduction** [LSH14]. **Redundancy** [WDW13, SC06, WWJ09]. **Redundant** [HH11]. **Reed** [LJ14]. **Reference** [MGK18]. **Register** [CZW<sup>+</sup>19, WX15, ZCX<sup>+</sup>17, TCSV09]. **Regular** [DDR<sup>+</sup>16b]. **rejuvenation** [AMA<sup>+</sup>14, CNPR14, MNT14, ZJT<sup>+</sup>14]. **Relativistic** [MJ11]. **Release** [HLH<sup>+</sup>12]. **Release-on-Demand** [HLH<sup>+</sup>12]. **Reliability** [ANR<sup>+</sup>14, HCTK08, KYEB15, LYWW13, LBB<sup>+</sup>18, CWT14, DK09, Edi14, TMM<sup>+</sup>07]. **reliable** [McK07, WWJ09]. **Replacement** [ON15]. **replicating** [TMM<sup>+</sup>07]. **Reservoir** [BY18, LMM18]. **Residue** [HH11]. **Resiliency** [SFD17]. **Resilient** [LCT12]. **Resistance** [ZJ11]. **Resistive** [BSL<sup>+</sup>18, DSB16, KKKK18, WRWW17]. **resonant** [LM13]. **Resource** [AVK16, NV14, OGB18, PHS<sup>+</sup>15]. **Resource-Constrained** [OGB18]. **Resource-Efficient** [NV14]. **Response** [CMJ14]. **Restoring** [MCT18]. **Restricted** [YP17]. **Resulting** [SDSS14]. **Retail** [KK12]. **Rethinking** [WZL16]. **Retrieval** [BBB<sup>+</sup>16]. **Reuse** [CH14]. **Reverse** [CCW18, QCF<sup>+</sup>16]. **Reversible** [DRSR14, DBG<sup>+</sup>14, DDR<sup>+</sup>16b, DJ08, HM14, LCSP14, Mog14, NV14, SZSS10, SDSS14, SSP14, SWK<sup>+</sup>16, WDT14, CW08, LJ14, PSM<sup>+</sup>06, TR10, TR13]. **Review** [JLL<sup>+</sup>17]. **RF** [BSS16]. **RF/Analog** [BSS16]. **RIMEP2** [HM14]. **ring** [ZFT13]. **Ripple** [MGZ<sup>+</sup>17]. **Ripple-Carry** [MGZ<sup>+</sup>17]. **RMDDS** [LJ14]. **Robust** [BMB18, CQZK14, GRPT13, GJ17, MGK18, PPM<sup>+</sup>13, CB09, WVG13]. **Robustness** [BS15]. **Root** [MCT18]. **Router** [Bis17, DRL<sup>+</sup>19, KPFM16, CA11]. **Routing** [VRBS16, LKC15, LDL10, MKW<sup>+</sup>14, RT07, XC08]. **RRAM** [NHL<sup>+</sup>17]. **Rule** [OBLD14]. **Rule-Based** [OBLD14]. **runtime** [GMM12]. **Scalable** [BPS19, Che15, GB18, MT14]. **Scale** [KCD15, KWWI17, PDL15, Bea11, CCTP08, LDL10, PDL06]. **scaled** [LBGR08]. **Scaling** [BSS16, JOF<sup>+</sup>15, LYWW13, WCSA10]. **Scan** [WFCX09, HCTK08, XS14]. **Scan-chain** [WFCX09]. **Scheduling** [BM15, MSCS19, OGB18, STA<sup>+</sup>12, ZJT<sup>+</sup>14]. **Scheme** [GLMG<sup>+</sup>15, GB18, MGK18, WRWW17, XS14]. **schemes** [GD12]. **SCKVdd** [Che15]. **Scoring** [AAF13]. **SCT** [RT08]. **Searches** [MT14]. **Secret** [BBB<sup>+</sup>16]. **section** [Bah09, LC08, Moh12]. **Secure** [SK16]. **Security** [BSY<sup>+</sup>16, GSC17, IGR<sup>+</sup>16]. **Segment** [KXY16]. **Segment-Based** [KXY16]. **Seizure** [SGR<sup>+</sup>12]. **Self** [Che15, LCK19, MGK18, RMG15, TMM<sup>+</sup>07, YYBK19, LDL10, PDL07, WCSA10]. **Self-learnable** [YYBK19]. **Self-Organizing** [RMG15, LDL10, PDL07]. **Self-Protecting** [LCK19]. **Self-Reference**

[MGK18]. **Self-replicating** [TMM<sup>+</sup>07]. **Self-Stabilized** [Che15]. **self-timed** [WCSA10]. **Semi** [ZK18]. **Semi-Trained** [ZK18]. **Sense** [SFD17]. **Sensing** [MGK18]. **Sensitive** [ZY18]. **Sensitivity** [LDK<sup>+</sup>18]. **Sensitivity-based** [LDK<sup>+</sup>18]. **Sensor** [LPB<sup>+</sup>15, LWM<sup>+</sup>14, MGS<sup>+</sup>12, GD12, LWX<sup>+</sup>14, WOW<sup>+</sup>10]. **Separation** [KR18]. **Sequence** [PPM<sup>+</sup>13]. **Sequences** [MT14]. **Sequential** [NLL<sup>+</sup>17, CW08, TR10]. **SerDes** [XLL<sup>+</sup>18]. **serial** [Gla14]. **Series** [MKS17]. **server** [MNT14]. **servers** [ABS<sup>+</sup>12, KSB<sup>+</sup>08]. **Setup** [GB18]. **Shared** [PAB<sup>+</sup>17, VK18]. **Sharing** [CDP17, SSP14]. **SHARP** [VK18]. **Shielding** [ZCX<sup>+</sup>17]. **Shift** [VSRR15, TCSV09]. **Shift-Based** [VSRR15]. **shift-register-based** [TCSV09]. **shifter** [MP10]. **Short** [ZSPC19]. **Short-Term** [ZSPC19]. **Si** [HCTK08]. **Silicon** [CDP17, TZS14, XNK18, BPH<sup>+</sup>11]. **Silicon-Photonic** [CDP17]. **SIMD** [PDL07]. **Simple** [DDR<sup>+</sup>16b]. **Simplified** [FYJ<sup>+</sup>17]. **simplifying** [PSM<sup>+</sup>06]. **Simulation** [CJ14a, CJ15, FYJ<sup>+</sup>17, SWJ07, YLF<sup>+</sup>17, FGZ14]. **Simulator** [AVK16, VAK18, VSM19, HYWA09, LJ10]. **Simulators** [ZF15, KCC<sup>+</sup>14]. **Single** [VRBS16, CEW<sup>+</sup>13, CCH16, SXL<sup>+</sup>12]. **Single-Electron** [CEW<sup>+</sup>13, CCH16]. **single-walled** [SXL<sup>+</sup>12]. **Situ** [ZK18]. **sizing** [LSH14]. **Sketching** [AL17]. **Skew** [NPA<sup>+</sup>12]. **Small** [MKW<sup>+</sup>14]. **Small-World** [MKW<sup>+</sup>14]. **Sneak** [WRWW17]. **Sneak-Path** [WRWW17]. **SoC** [GSC17, HLH<sup>+</sup>12]. **soft** [LWX<sup>+</sup>14, SKRX13]. **soft-error** [LWX<sup>+</sup>14]. **Software** [AMA<sup>+</sup>14, WZL16, ZJT<sup>+</sup>14, CNPR14, MNT14]. **Solution** [BM15]. **Solutions** [LCK19, VGZ11, MN06, Moh12]. **solver** [KTW08]. **Sort** [GUP11]. **SOT** [PAF18]. **SOT-MRAM** [PAF18]. **Source** [Bis17, KR18]. **Space** [LDK<sup>+</sup>18, TJ13a, XLBB06, ZJS09a]. **SPARCNNet** [PJS17]. **Spare** [BKJ19]. **Sparse** [HIH18, PJS17, RMG15]. **Spatial** [KWFH12]. **Special** [BY12, DMYT15, DR11, Gui13, HN15, Moh12, MSW14, SS15, SK16, SN11, TSB15, TSMCB17, TV17, AD14, BC08, Bah09, CS07, Edi14, LC08, McK07, PG12, PR13, WDT14, XCF08]. **specialized** [BC08]. **Specific** [DKK<sup>+</sup>15, FC18]. **Specification** [OBLD14]. **spectrally** [KTW08]. **Speech** [CKC<sup>+</sup>18]. **Speed** [BYHT18, LTKP16, PAB<sup>+</sup>17, XLL<sup>+</sup>18]. **Speedup** [KAKSP14]. **SPICE** [KCC<sup>+</sup>14]. **SPICE-compatible** [KCC<sup>+</sup>14]. **Spike** [AMF<sup>+</sup>15, ZWL<sup>+</sup>15]. **Spike-Time-Dependent** [ZWL<sup>+</sup>15]. **Spike-Timing-Dependent** [AMF<sup>+</sup>15]. **Spiking** [CThG15, HIH18, KCD15, LJL18, SPR18]. **Spin** [AKW<sup>+</sup>13, MS17, VSRR15, YLF<sup>+</sup>17, CSKM13, CWL<sup>+</sup>13, EWKNW07, MFA<sup>+</sup>13]. **Spin-Torque** [YLF<sup>+</sup>17]. **Spin-transfer** [AKW<sup>+</sup>13, CWL<sup>+</sup>13, MFA<sup>+</sup>13]. **spin-transfer-torque** [CSKM13]. **spin-wave** [EWKNW07]. **SpiNNaker** [PCD<sup>+</sup>11]. **Spintronic** [IGR<sup>+</sup>16]. **Spintronics** [KZW<sup>+</sup>15]. **Split** [CZW<sup>+</sup>19]. **Splitters** [DWK<sup>+</sup>16]. **Square** [MCT18]. **SRAM** [GJ17, RKM15]. **SRAMs** [RMW<sup>+</sup>17]. **Stabilized** [Che15]. **stacked** [KWFH12, MHM<sup>+</sup>08, SKRX13, ZS08]. **stacked-Vdd** [ZS08]. **stacking** [KSB<sup>+</sup>08, MHM<sup>+</sup>08]. **Stage** [ZGSA15]. **Stand** [RFDT15]. **Stand-By** [RFDT15]. **Standard** [CMJ14, KCWL<sup>+</sup>16, MS17]. **state** [ABS<sup>+</sup>12]. **Statistical** [LTKP16, YJ18]. **STDP** [SPR18]. **STDP-based** [SPR18]. **Step** [WRWW17]. **Stochastic** [ACH<sup>+</sup>17, AL17, LQYL19, LP17, LMM18, MZR<sup>+</sup>14, MKSW17, NLL<sup>+</sup>17, NPH18]. **stochastically** [GRS05]. **Stone** [BSL<sup>+</sup>18]. **Storage** [SCZ<sup>+</sup>12, VSRR15, YYPK17]. **strain** [LWH14]. **Strategies** [SFD17, FRB08, GRS05]. **Strategy**

[MSCS19]. **Streaming** [GYM<sup>+</sup>17, KR18]. **stretching** [MRH12]. **Structure** [DDR<sup>+</sup>16b, YYPK17]. **Structured** [AHS17]. **structures** [PSM<sup>+</sup>06]. **STT** [AKW<sup>+</sup>13, LPW18, PFRR17, SFD17, VDB<sup>+</sup>16, ZCX<sup>+</sup>17]. **STT-MRAM** [AKW<sup>+</sup>13]. **STT-RAM** [LPW18]. **STTRAM** [GG17, MGK18, WX15]. **STTRAM-Based** [GG17, WX15]. **studies** [CNPR14]. **Study** [DDR<sup>+</sup>16a, PPM<sup>+</sup>13, PSY<sup>+</sup>18, YLF<sup>+</sup>17, CB09, HCTK08]. **styles** [CJ14b]. **Sub** [GVR17, ON15, RFDT15, WOW<sup>+</sup>10]. **Sub-** [RFDT15]. **Sub-10nm** [GVR17]. **Sub-Block** [ON15]. **sub-mW** [WOW<sup>+</sup>10]. **Subcrossbar** [YL14]. **Substrate** [PAB<sup>+</sup>17]. **Suite** [XCS<sup>+</sup>19]. **Super** [GVR17]. **Super-Threshold** [GVR17]. **Supercapacitor** [LPB<sup>+</sup>15]. **Supercapacitor-Based** [LPB<sup>+</sup>15]. **Supervised** [CZQK15]. **Supply** [LWM<sup>+</sup>14, MMJ09]. **Surface** [CMJ14, KTW08]. **Survey** [GBLD15, KK12, Mit16, Mit17, QCF<sup>+</sup>16, SFD17, CNPR14]. **sustainability** [KMD12]. **sustainable** [PG12]. **SW** [JRLR15]. **SWIFTNoC** [CDP17]. **Swing** [SSF<sup>+</sup>15]. **Switched** [GB18]. **Switching** [BSL<sup>+</sup>18]. **Symmetric** [DDR<sup>+</sup>16b]. **Symposium** [Shu09]. **Synapses** [WKL16, JRC<sup>+</sup>13]. **Synaptic** [KZL15, WKL16]. **Synchronous** [RFDT15]. **Synthesis** [AHSZ16, CEW<sup>+</sup>13, CH14, CCH16, CW08, DRSR14, DWK<sup>+</sup>16, DDR<sup>+</sup>16b, GCJ17, HSZM17, HD14, LCSP14, MPM13, PT14a, SSP14, SKB13, CCTP08, DJ08, LJ14, MMJ09, PT14b, SZSS10, SC08, XC08, ZXC10]. **Synthetic** [Dea14, FHF14, HD14, MHW14, MSW14, OBLD14, VMV13]. **System** [ARLB18, BY18, CJ15, HH11, JWJ<sup>+</sup>17, LBJ<sup>+</sup>16, LWM<sup>+</sup>14, MKSW17, QCF<sup>+</sup>16, SS15, SN11, SCZ<sup>+</sup>12, TSMCB17, WXW<sup>+</sup>17, CB09, MP10, YW13, ZJS09c, ZJS09b, PCD<sup>+</sup>11, YXW<sup>+</sup>12]. **System-Level** [ARLB18, JWJ<sup>+</sup>17, MP10]. **System-on-Chip** [PCD<sup>+</sup>11, YXW<sup>+</sup>12]. **Systems** [ACJ17, DMYT15, DRL<sup>+</sup>19, FYJ<sup>+</sup>17, GBLD15, HIH18, KZW<sup>+</sup>15, MSCS19, RMW<sup>+</sup>17, TSB15, TKBM12, TV17, WZL16, XNK18, ZSXY11, GMM12, LBGR08, LWX<sup>+</sup>14, Moh12, MCT10, PG12, STA<sup>+</sup>12, SLS<sup>+</sup>14, WOW<sup>+</sup>10, WCSA10]. **systems-on-chip** [GMM12, LWX<sup>+</sup>14]. **T** [MCT18]. **T-count** [MCT18]. **Targeting** [CKC<sup>+</sup>18, HSZM17]. **tasks** [STA<sup>+</sup>12]. **Taxonomy** [SFD17]. **Technique** [CCW18, Che15, HLH<sup>+</sup>12]. **Techniques** [Bis17, GBLD15, KP16, Mit16, Mit17, TJ13b, BCT<sup>+</sup>13, KP10]. **Technologies** [FNO<sup>+</sup>19, GBLD15, TSB15, BC08, Edi14, PR13, PUBV07, VO06, GN08]. **Technology** [BSY<sup>+</sup>16, CTP14, GMM12, GVR17, KZW<sup>+</sup>15, TGCJ16, KSB<sup>+</sup>08, MHM<sup>+</sup>08, SX11, XDX14, ZC07]. **Technology-Agnostic** [CTP14]. **Technology-Based** [BSY<sup>+</sup>16]. **Technology-driven** [GMM12]. **Temperature** [HTMH18, PRG<sup>+</sup>15, KCC<sup>+</sup>14, LWH14]. **Template** [RDH14]. **Templates** [SM11]. **temporal** [KWFH12]. **Term** [ZSPC19]. **Ternary** [GG17]. **Test** [MSCS19, TJ13b, XS14]. **Testability** [DDR<sup>+</sup>16b]. **Testable** [SDSS14, XDX14, LBGR08]. **Testing** [BMB18, KKC17, DJRM09, RT08, XS14, ZJT<sup>+</sup>14]. **TFET** [KCWL<sup>+</sup>16]. **TFT** [HCTK08, LWH14]. **TFTs** [LBGR08]. **theoretic** [DWL10]. **Theory** [RBGC14]. **Thermal** [ARLB18, MSCS19, TJ13b, ZY18, KWFH12, XS14]. **Thermal-aware** [MSCS19]. **thermal-driven** [XS14]. **Thermal-Sensitive** [ZY18]. **Threats** [GSC17]. **three** [MLK<sup>+</sup>08, WFCX09, XS14]. **three-dimensional** [MLK<sup>+</sup>08, WFCX09, XS14]. **Threshold** [GVR17, Mit16, PT14a, SCL17, MMJ09, PT12, PT14b, WDH<sup>+</sup>09].

**Through-Silicon-Via** [TZS14]. **throughput** [CA11, RMBC12]. **Tile** [HMS<sup>+</sup>05]. **Tile-based** [HMS<sup>+</sup>05]. **Tiled** [DPB11]. **Time** [DRL<sup>+</sup>19, GSC17, JWJ<sup>+</sup>17, KR18, KPFM16, LMM18, MKSW17, SHAC19, XLL<sup>+</sup>18, ZWL<sup>+</sup>15, LWX<sup>+</sup>14, MNT14, SPR18]. **Time-Randomized** [SHAC19]. **timed** [WCSA10]. **Timing** [AMF<sup>+</sup>15]. **TLC** [AM18]. **TODAES** [BC08]. **Tolerance** [SLC<sup>+</sup>17, WDW13, DWL10, LSH14, SCI<sup>+</sup>09, Tah06, Tah09, XC08]. **Tolerant** [BKJ19, CVK15, DJ16, GYM<sup>+</sup>17, HH11, LCK19, MGZ<sup>+</sup>17, XYM18, LWX<sup>+</sup>14, PDL07, TWL09, YYC07, ZMT13]. **Tool** [VRBS16, HZY<sup>+</sup>12]. **Torque** [YLF<sup>+</sup>17, AKW<sup>+</sup>13, CSKM13, CWL<sup>+</sup>13, MFA<sup>+</sup>13]. **Torus** [YXW<sup>+</sup>12]. **Torus-Based** [YXW<sup>+</sup>12]. **trade** [CDG<sup>+</sup>12]. **trade-offs** [CDG<sup>+</sup>12]. **Tradeoffs** [HTMH18, SFD17]. **Trading** [ACH<sup>+</sup>07]. **Trained** [ZK18]. **Transfer** [CZW<sup>+</sup>19, AKW<sup>+</sup>13, CSKM13, CWL<sup>+</sup>13, MFA<sup>+</sup>13]. **Transfer-Level** [CZW<sup>+</sup>19]. **Transform** [DBG<sup>+</sup>14]. **Transformations** [GOGCK11, BCT<sup>+</sup>13]. **transient** [ZFT13]. **Transiently** [JRLR15]. **Transistor** [CEW<sup>+</sup>13, CCH16, GLMG<sup>+</sup>15, HC15, RMW<sup>+</sup>17, DLWW08, HZY<sup>+</sup>12]. **Transistors** [HN12, MGZ<sup>+</sup>17, WDH<sup>+</sup>09]. **Transporters** [PPM<sup>+</sup>13]. **Tree** [CH14, GCJ17, YYC07]. **Trends** [TGCJ16]. **Trojan** [CKWK18]. **Trojans** [ZFT13]. **True** [LTKP16]. **Trust** [IGR<sup>+</sup>16]. **Trustworthy** [SK16]. **TSV** [KYEB15]. **TSVs** [ARLB18]. **Tunable** [GKT<sup>+</sup>18]. **Tunnel** [VDB<sup>+</sup>16]. **tunneling** [LM13]. **Two** [GUP11]. **Two-Dimensional** [GUP11]. **Type** [YJ18].

**ULS** [MP10]. **Ultra** [CJ16, CJ14b, GJ17, KZW<sup>+</sup>15, KT14, MGS<sup>+</sup>12, STSG17, TSB15]. **Ultra-Low** [TSB15]. **Ultra-Low-Leakage** [CJ16, CJ14b, GJ17]. **Ultra-Low-Power** [KZW<sup>+</sup>15, MGS<sup>+</sup>12, STSG17]. **Unclonable** [UMB<sup>+</sup>18]. **Underlapped** [GVERR17].

**Unified** [YYPK17]. **Uniform** [SMT<sup>+</sup>17]. **Unipolar** [LP17]. **Units** [BH17, Gla14]. **Universal** [CZQK15, CVK15, MP10]. **Unsupervised** [SPR18]. **Using** [AVK16, CJ16, CKWK18, DSB16, DPB11, GKT<sup>+</sup>18, GOGCK11, GUP11, GSC17, GJ17, HZSA14, HLH<sup>+</sup>12, KR18, KWWI17, LBJ<sup>+</sup>16, LQYL19, LP17, LMM18, Mit17, PFRR17, PT14a, PAF18, SCL17, VSRR15, YJ18, BSL<sup>+</sup>18, BPH<sup>+</sup>11, CMJ14, DRSR14, HMS<sup>+</sup>05, JRC<sup>+</sup>13, KT14, KK12, KCD15, LBGR08, LSH14, MMJ09, MHM<sup>+</sup>08, RBGC14, SZSS10, SPR18, SXL<sup>+</sup>12, SC06, YYC07, ZFT13, ZJT<sup>+</sup>14, KSB<sup>+</sup>08]. **Utility** [LHW<sup>+</sup>17]. **Utilizing** [WDH<sup>+</sup>09].

**Validation** [SSN12]. **Variability** [GPW<sup>+</sup>15, NLK<sup>+</sup>13, VDB<sup>+</sup>16]. **Variable** [DKK<sup>+</sup>15]. **Variable-Latency** [DKK<sup>+</sup>15]. **Variation** [GLMG<sup>+</sup>15, MGK18, XYM18, MRH12, ZMT13]. **Variation-Aware** [GLMG<sup>+</sup>15]. **variation/defect** [ZMT13]. **variation/defect-tolerant** [ZMT13]. **Variations** [CMJ14, CJ14a, CJ15, DSB16, KAKSP14, SCL17, TGCJ16, YJ18, RYT<sup>+</sup>07, XPD12]. **Vdd** [ZS08]. **Versus** [DDR<sup>+</sup>16a]. **Vertical** [KCWL<sup>+</sup>16, LKC15]. **Via** [TZS14, WWJ09, YWF18]. **vibration** [WCSA10]. **Viewpoint** [GFZ13]. **virtual** [Sek07]. **virtualized** [MNT14]. **VLIW** [SLC<sup>+</sup>17]. **VLSI** [AMF<sup>+</sup>15, DKK<sup>+</sup>15, MRH12, YP17]. **Volatile** [KHR<sup>+</sup>15, RKM15, STSG17, YYPK17, YXD<sup>+</sup>17]. **Voltage** [Che15, JOF<sup>+</sup>15, KKKK18, SCL17, SXL<sup>+</sup>12]. **voltages** [MMJ09, WDH<sup>+</sup>09]. **vs** [CJ14a, DWK<sup>+</sup>16]. **vulnerability** [SKRX13].

**Wafer** [KKC17, KWWI17, MHM<sup>+</sup>08]. **Wafer-Bonding** [KKC17]. **wafer-to-wafer** [MHM<sup>+</sup>08]. **Wall** [Mit17]. **walled** [SXL<sup>+</sup>12]. **Wave** [MKW<sup>+</sup>14, EWKNW07].



**Wavelength** [LKL<sup>+</sup>18]. **waves** [KK12].  
**Way** [HSZM17]. **Web** [AMVG12]. **Welded** [GCJ17]. **while** [RYT<sup>+</sup>07]. **Width** [BSS16].  
**wire** [Gla14, SXL<sup>+</sup>12]. **Wireless** [CMM<sup>+</sup>18, DJ16, LPB<sup>+</sup>15, LWM<sup>+</sup>14, MGS<sup>+</sup>12, MKW<sup>+</sup>14, TKBM12, CDG<sup>+</sup>12, GD12, WOW<sup>+</sup>10, WVGP13]. **wires** [DK09].  
**Within** [KXY16]. **Wordline** [LYWW13].  
**Wordline/Bitline** [LYWW13]. **Workload** [PRG<sup>+</sup>15, SLS<sup>+</sup>14]. **Workload-Aware** [PRG<sup>+</sup>15]. **World** [MKW<sup>+</sup>14]. **Wormhole** [SHAC19]. **WoSAR** [AD14]. **Write** [AM18, GLMG<sup>+</sup>15, KXY16, LHW<sup>+</sup>17, WX15].  
**Write-Aware** [WX15]. **Writes** [VSR15].

**Yield** [PFRR17, SC06, FRB08].

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[CV12]

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