

2012 General Europractice MPW runs Schedule and Prices

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Version 120101

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ON Semiconductor (formerly AMIS)

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---|----|----|----|----|----|----|---|----|----|---|----|---|
| AMIS 0.7µ C07M-D 2M/1P & AMIS 0.7µ C07M-A 2M/1P/Pdiff/HR | 30 | | | 2 | | 11 | | 27 | | | 5 | |
| AMIS 0.5µ C05M-D 3M/1P & AMIS 0.5µ C05M-A 3M/2P/HR | | | | | 21 | | | | | 1 | | |
| AMIS 0.5µ CMOS EEPROM C5F & C5N | 4 | | 12 | | 7 | | 9 | | 10 | | 21 | |
| AMIS 0.35µ C035M-D 5M/1P & AMIS 0.35µ C035M-A 5M/2P/HR | | | | | 21 | | | | | 1 | | |
| AMIS 0.35µ C035U 4M (3M & 5M optional) only thick top metal | | 13 | | 10 | | 18 | | | 17 | | | 3 |
| AMIS 0.7µ C07M-I2T100 100 V - 2M & 3M options | 30 | | | 2 | | 11 | | 27 | | | 5 | |
| AMIS 0.7µ C07M-I2T30 & I2T30E 30 V - 2M | 30 | | | 2 | | 11 | | 27 | | | 5 | |
| AMIS 0.35µ C035 - I3T80U 80 V 4M - 3M optional (5M on special request) | 9 | | | 2 | | | 2 | | | 8 | | |
| AMIS 0.35µ C035 - I3T50 50 V 4M - 3M optional (5M on special request) | | 20 | | | | | | 13 | | | 19 | |
| AMIS 0.35µ C035 - I3T25 3.3/25 V 4M (3M & 5M optional) only thick top metal | | 13 | | 10 | | 18 | | | 17 | | | 3 |

austriamicrosystems

| | J | F | M | A | M | J | J | A | S | O | N | D |
|--|---|----|----|----|----|---|----|----|---|----|----|---|
| austriamicrosystems 0.35µ CMOS C35B3C3 3M/2P/HR/5V IO | | 6 | 21 | | 21 | | 16 | 27 | | 29 | | 3 |
| austriamicrosystems 0.35µ CMOS C35B4C3 4M/2P/HR/5V IO | | 6 | 21 | | 21 | | 16 | 27 | | 29 | | 3 |
| austriamicrosystems 0.35µ CMOS C35OPTO 4M/2P/5V IO | | | 21 | | | | | | | 29 | | |
| austriamicrosystems 0.35µ HV CMOS H35 50V 3M & 4M | | 13 | | 24 | | | | 13 | | | 5 | |
| austriamicrosystems 0.35µ SiGe-BiCMOS S35 4M/4P | | 27 | | | | 4 | | | 3 | | 19 | |
| austriamicrosystems 0.18µ CMOS C18 6M or 4M/1P/MIM/1.8V/5V | | | | 10 | | | | 6 | | 1 | 26 | |
| austriamicrosystems 0.18µ HV CMOS H18 6M or 4M/50V/20V/5V/1.8V/MIM | | | | 3 | | | 30 | | | 1 | 26 | |

IHP

| | J | F | M | A | M | J | J | A | S | O | N | D |
|--|---|---|---|----|---|---|----|----|---|----|---|---|
| IHP SGB25V 0.25µ SiGe:C Ft=75GHz@BVCEO 2.4V | 2 | | | 23 | | | | 27 | | 29 | | |
| IHP SGB25VGD 0.25µ SiGe:C Ft=75GHz@BVCEO 2.4V + RF HV-LDMOS GOD-Module 22V | 2 | | | 23 | | | | 27 | | 29 | | |
| IHP SG25H1 0.25µ SiGe:C Ft/Fmax=190GHz/220GHz 5M/MIM | 2 | | | 23 | | | | 27 | | 29 | | |
| IHP SG25H3P 0.25µ Complementary SiGe:C Ft/Fmax (npn)110/180GHz / (pnp)90/120GHz 5M/MIM | 2 | | | 23 | | | | 27 | | 29 | | |
| IHP SG25H3 0.25µ SiGe:C Ft/Fmax= 110/180GHz 5M/MIM | 2 | | | 23 | | | | 27 | | 29 | | |
| IHP SG13S SiGe:C Bipolar/Analog/CMOS Ft/Fmax= 250/300GHz 7M/MIM | | | | 10 | | | 23 | | | | | 3 |
| IHP SG13C SiGe:C CMOS 7M/MIM | | | | 10 | | | 23 | | | | | 3 |
| IHP SG13G2 SiGe:C Bipolar/Analog Ft/Fmax= 300/500GHz 5M/MIM | | | | | | | 23 | | | | | 3 |
| BEOL SG25 (M1 and Metal Layers Above) | | | 5 | | | | | | | | | |
| BEOL SG13 (M1 and Metal Layers Above) | | | | | | | | | | 5 | | |

Bumping available for all IHP technologies with extra charge, limited to 200 bumps

LFoundry

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---------------------------|--|---|---|---|---|---|---|---|---|---|---|---|
| LFoundry LF150 0.15µ CMOS | No MPW runs scheduled as of publishing this price list, as LFoundry LF150 MPW run dates for 2012 not yet confirmed | | | | | | | | | | | |

| TSMC | J | F | M | A | M | J | J | A | S | O | N | D |
|--|----|-------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|
| TSMC 0.25µ CMOS General LOGIC, MS OR MS RF | 2 | 8 | 7 | 4 | 2 | 6 | 4 | 8 | 5 | 3 | 7 | 5 |
| TSMC 0.18µ CMOS General LOGIC, MS or MS RF (MIM: 1.0 or 2.0 fFum2 / UTM: 20kÅ) | 25 | 29 | 28 | 25 | 30 | 27 | 25 | 29 | 26 | 31 | 28 | 19 |
| 0.18 CMOS High Voltage Mixed-Signal (CV018LD 1.8/3.3/32V) – to be used in combination with imec SiGeMEMS | | 1 | | | 2 | | | 1 | | 31 | | |
| TSMC 0.13µ CMOS General LOGIC, MS or MS RF (8-inch) | 2 | | | 11 | | | 11 | | | 10 | | |
| TSMC 0.13µ CMOS General LOGIC, MS or MS RF (12-inch) | | 8 | 14 | | 9 | 13 | | 8 | 12 | | 14 | 12 |
| TSMC 90nm CMOS General or LP Logic , MS or MS/RF (12-inch) | 2 | 1 | 7 | 4 | 2 | 6 | 4 | 1 | 5 | 3 | 7 | 5 |
| TSMC 65nm CMOS General or LP MS/RF | 25 | 18,29 | 14,28 | 11,25 | 9,30 | 13,27 | 11,25 | 8,29 | 12,26 | 10,31 | 14,28 | 12,19 |
| TSMC 40nm CMOS General or LP MS/RF | 18 | 22 | 19 | 18 | 23 | 20 | 18 | 22 | 19 | 24 | 21 | 12 |

Note : runs in red color are preliminary and can be updated during 2012

| UMC | J | F | M | A | M | J | J | A | S | O | N | D |
|--|----|---|----|-----|----|----|-----|---|----|----|----|----|
| UMC L180 Logic GII - 1P6M - 1.8V/3.3V | 23 | | | 23 | | | 30 | | | 22 | | |
| UMC L180 Mixed-Mode/RF - 1P6M - 1.8V/3.3V | 23 | | | 23 | | | 30 | | | 22 | | |
| UMC L180 Low Leakage 1P6M - 1.8V/3.3V | 23 | | | 23 | | | 30 | | | 22 | | |
| UMC L180 CIS 1P4M – CONV diode | | | 12 | | | 11 | | | 10 | | | |
| UMC L180 CIS 2P4M – ULTRA diode | | | 12 | | | 11 | | | 10 | | | |
| UMC L130 Logic - 1P8M2T - 1.2V/3.3V | 23 | | | 30 | | | 30 | | | 29 | | |
| UMC L130 Mixed-Mode/RF - 1P8M2T - 1.2V/3.3V | 23 | | | 30 | | | 30 | | | 29 | | |
| UMC L110AE Logic/Mixed-Mode - 1P8M | 23 | | 12 | | 14 | | 16 | | 10 | | 12 | |
| UMC L90N Logic or Mixed-Mode/RF - 1P9M2T1F - 1.0V, 1.2V/2.5V | | | 19 | | | | 2 | | | | 5 | |
| UMC L65N Logic/Mixed-Mode LL 1P10M 1.2V/2.5V | 23 | | 5* | 23* | | 4 | 23* | | 3* | 22 | | 3* |
| UMC L65N LOGIC/MIXED-MODE65N - SP - 1P10M - 1.0V,1.1V/2.5V | 23 | | 5* | 23* | | 4 | 23* | | 3* | 22 | | 3* |

Note : runs in red color are preliminary and can be updated during 2012

* = Not all options available. To be confirmed before tapeout.

| options regular runs | Core | IO | MIM | topmetal | special remarks |
|--|------------|--|---------------|--------------------|---|
| UMC L65N LOGIC/MIXED-MODE65N - LL - 1P10M - 1.2V/2.5V | 1.2V | 1.8V / 2.5V / 2.5V_OD3.3V / 3.3V | 2fF | 8kA/32.5kA | Metallization recommendation on request. Redistribution to Al. |
| UMC L65N LOGIC/MIXED-MODE65N - SP - 1P10M - 1.0V,1.1V/2.5V | 1.0V, 1.1V | 1.8V / 2.5V / 2.5V_UD1.8V / 2.5V_OD3.3V / 3.3V | 2fF | 8kA/32.5kA | Metallization recommendation on request. Redistribution to Al. |
| UMC L90N Logic - 1P9M2T1F - 1.0V/2.5V | 1.0V, 1.2V | 1.8V / 2.5V / 2.5V_OD3.3V / 3.3V | / | 8kA | SP and LL devices allowed. Redistribution to Al. |
| UMC L90N Mixed-Mode/RF - 1P9M2T1F - 1.0V/2.5V | 1.0V, 1.2V | 1.8V / 2.5V / 2.5V_OD3.3V / 3.3V | 1.5fF/2fF | 8kA/32.5kA | SP and LL devices allowed. Redistribution to Al. |
| UMC L110AE LOGIC/MIXED-MODE - 1P8M | 1.2V | 3.3V | 1fF/1.5fF | 8kA/12kA/20kA/40kA | Al |
| UMC L130 Logic - 1P8M - 1.2V/3.3V | 1.2V | 3.3V | 1fF/1.5fF/2fF | 8kA | Two types (out of 3) of devices can be combined: HS,LL, SP. Redistribution to Al. |
| UMC L130 Mixed-Mode/RF - 1P8M - 1.2V/3.3V | 1.2V | 3.3V | 1fF/1.5fF/2fF | 8kA/20kA | Two types (out of 3) of devices can be combined: HS,LL, SP. Redistribution to Al. |
| UMC L180 Logic GII - 1P6M - 1.8V/3.3V | 1.8V | 3.3V | 1fF | 8kA | |
| UMC L180 Mixed-Mode/RF - 1P6M - 1.8V/3.3V | 1.8V | 3.3V | 1fF | 8kA/20kA | |
| UMC L180 Low Leakage - 1P6M - 1.8V/3.3V | 1.8V | 3.3V | / | 8kA | Cannot be combined with Logic GII |
| UMC CIS18 – CONV & ULTRA Diode | 1.8V | 3.3V | 1fF | 8kA | |

TRONICS Microsystems

| | J | F | M | A | M | J | J | A | S | O | N | D |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|
| MEMSOI | | | | | 2 | | | | | | 1 | |

MEMSCAP

| | J | F | M | A | M | J | J | A | S | O | N | D |
|------------|---|----|----|---|---|----|---|---|----|---|---|---|
| METALMUMPS | | 28 | | | | | | | 4 | | | |
| PolyMUMPS | 3 | | 27 | | | 20 | | | 25 | | | |
| SOIMUMPS | 3 | | 20 | | | 12 | | | 4 | | | |

imec

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|----|---|---|---|----|----|---|---|
| SiGeMEMS (passive) | | | | | | | | | 20 | | | |
| SiGeMEMS on top of 0.18u TSMC CMOS (active) | | | | | 10 | | | | | 25 | | |

Note : runs in red color are preliminary and can be updated during 2012

ePIXfab-imec

| | J | F | M | A | M | J | J | A | S | O | N | D |
|--------------------------------------|---|---|---|----|---|---|---|---|----|---|---|---|
| ePIXfab-imec SiPhotonics | | | | 30 | | | | | | | | 3 |
| ePIXfab-imec SiPhotonics with Heater | | | | | | | | | 17 | | | |

2012 General Europractice MPW runs – Pricelist

Accessible for universities, research institutes and companies
 Prices and conditions may change at any time without prior notice

STANDARD price : normal price

DISCOUNTED price : only applies to EURO PRACTICE registered (who paid their annual full membership fee) Academic and Research Members from all 27 EU countries and Norway, Iceland, Liechtenstein, Israel, Croatia, Serbia, Macedonia, Albania, Montenegro, Bosnia&Herzegovina, Switzerland, Turkey who submit designs for **educational or publicly funded research use only**

Prices are given for the delivery of unpackaged, untested prototypes. Encapsulation and testing will be charged separately.

Number of prototypes

OnSemi: 30 samples
 austriamicrosystems , IHP : 40 samples
 UMC : >45 samples
 TSMC : 8-inch : 40 samples, 12-inch : 100 samples
 If you need more prototype samples, please ask for a quotation

Plots

You can order plots/PDF of your designs
 - first plot/PDF costs 50 euro
 - next plots cost 20 euro each

Packaging : see separate prices and available packages

PRICES IN EURO

ON Semiconductor (formerly AMIS)

| | STANDARD Price/mm ² | DISCOUNTED Price/mm ² |
|---|--------------------------------|----------------------------------|
| AMIS 0.7μ C07M-D 2M/1P | 360 ² | 320 ² |
| AMIS 0.7μ C07M-A 2M/1P/PdiffC/HR | 400 ² | 360 ² |
| AMIS 0.5μ C05M-D 3M/1P | 420 ³ | 370 ³ |
| AMIS 0.5μ C05M-A 3M/2P/HR | 480 ³ | 430 ³ |
| AMIS 0.5μ CMOS EEPROM C5F & C5N | 1150 ² | 1100 ² |
| AMIS 0.35μ C035M-D 5M/1P | 620 ³ | 570 ³ |
| AMIS 0.35μ C035M-A 5M/2P/HR | 680 ³ | 630 ³ |
| AMIS 0.35μ C035U 4M (default) including analog options | 720 ¹ | 670 ¹ |
| AMIS 0.35μ C035U 3M (optional) including analog options | 700 ¹ | 650 ¹ |
| AMIS 0.35μ C035U 5M (optional) including analog options | 800 ¹ | 750 ¹ |
| AMIS 0.7μ C07M-I2T100 100 V - 2M | 550 ¹ | 500 ¹ |
| AMIS 0.7μ C07M-I2T100 100 V - 3M | 600 ¹ | 550 ¹ |
| AMIS 0.7μ C07M-I2T30 30 V - 2M | 440 ³ | 390 ³ |
| AMIS 0.7μ C07M-I2T30E 30 V - 2M | 500 ³ | 450 ³ |
| AMIS 0.35μ C035 - I3T80U 80 V 3M | 850 ¹ | 800 ¹ |
| AMIS 0.35μ C035 - I3T80U 80 V 4M | 990 ¹ | 940 ¹ |
| AMIS 0.35μ C035 - I3T80U 80 V 5M | 1145 ¹ | 1075 ¹ |
| AMIS 0.35μ C035 - I3T50 50 V 3M | 850 ¹ | 800 ¹ |
| AMIS 0.35μ C035 - I3T50 50 V 4M | 990 ¹ | 940 ¹ |
| AMIS 0.35μ C035 - I3T50 50 V 5M | 1145 ¹ | 1075 ¹ |
| AMIS 0.35μ C035 - I3T25 3.3/25 V 3M (optional) | 750 ¹ | 700 ¹ |
| AMIS 0.35μ C035 - I3T25 3.3/25 V 4M (default) | 770 ¹ | 720 ¹ |
| AMIS 0.35μ C035 - I3T25 3.3/25 V 5M (optional) | 850 ¹ | 800 ¹ |

austriamicrosystems

| | STANDARD Price/mm ² | DISCOUNTED Price/mm ² |
|--|--------------------------------|----------------------------------|
| austriamicrosystems 0.35μ CMOS C35B3C3 3M/2P/HR/5V IO | 720 ⁴ | 580 ⁴ |
| austriamicrosystems 0.35μ CMOS C35B4C3 4M/2P/HR/5V IO | 720 ⁴ | 580 ⁴ |
| austriamicrosystems 0.35μ CMOS C35OPTO 4M/2P/5V IO | 850 ⁴ | 700 ⁴ |
| austriamicrosystems 0.35μ HV CMOS H35 50V 3M & 4M | 1000 ⁴ | 900 ⁴ |
| austriamicrosystems 0.35μ SiGe-BiCMOS S35 4M/4P | 1000 ⁴ | 900 ⁴ |
| austriamicrosystems 0.18μ CMOS C18 6M or 4M/1P/MIM/1.8V/5V | 1200 ¹ | 1100 ¹ |
| austriamicrosystems 0.18μ HV CMOS H18 6M or 4M/50V/20V/5V/1.8V/MIM | 1320 ¹ | 1200 ¹ |

IHP

| | STANDARD Price/mm ² | DISCOUNTED Price/mm ² |
|--|-----------------------------------|-----------------------------------|
| IHP SGB25V 0.25μ SiGe:C Ft=30GHz@BVCEO>7V 5M | 2500 ¹ | 1875 ¹ |
| IHP SGB25VGD 0.25μ SiGe:C Ft=75GHz@BVCEO 2.4V + RF HV-LDMOS GD-Module 22V | 2950 ¹ | 2212 ¹ |
| IHP SG25H1 0.25μ SiGe:C Ft/Fmax=190GHz/220GHz 5M/MIM | 6800 ¹ | 5100 ¹ |
| IHP SG25H3P 0.25μ Complementary SiGe:C Ft/Fmax (npn)120/180GHz / (pnp)90/120GHz 5M/MIM | 5800 ¹ | 4200 ¹ |
| IHP SG25H3 0.25μ SiGe:C Ft/Fmax= 120/180GHz 5M/MIM | 3800 ¹ | 2850 ¹ |
| IHP SG13G2 SiGe:C Bipolar/Analog Fmax= 400GHz 5M/MIM | 7500 ² | 5625 ^{2,14} |
| IHP SG13G2 SiGe:C Bipolar/Analog Fmax= 400GHz 5M/MIM | 7500 ² | 4500 ^{2,13} |
| IHP SG13S SiGe:C Bipolar/Analog/CMOS Ft/Fmax= 250/300GHz 7M/MIM | 7200 ⁸ | 5400 ^{8,14} |
| IHP SG13S SiGe:C Bipolar/Analog/CMOS Ft/Fmax= 250/300GHz 7M/MIM | 7200 ⁸ | 4320 ^{8,13} |
| IHP SG13C SiGe:C CMOS 7M/MIM | 4500 ⁸ | 3375 ⁸ |
| BEOL SG25 (M1 and Metal Layers Above) | 800 | 600 |
| BEOL SG13 (M1 and Metal Layers Above) | 1000 | 750 |
| bumping for all IHP technologies | One-off fee of 3000 ¹⁰ | One-off fee of 2000 ¹⁰ |
| localized back side etching for all IHP technologies (per design) | One-off fee of 5000 | One-off fee of 2500 |
| RF-MEMS switch for SG25H1 and SG25H3 (per design) | One-off fee of 10000 | One-off fee of 2500 |

| LFoundry | STANDARD Price/mm² | DISCOUNTED Price/mm² |
|---|--|--|
| LFoundry LF150 0.15 μ CMOS all technologies | | |

| TSMC | STANDARD Price/mm² | DISCOUNTED Price/mm² |
|---|--|--|
| TSMC 0.25 μ CMOS General LOGIC, MS OR MS RF | Upon request ⁷ | Upon request ⁷ |
| TSMC 0.18 μ CMOS General LOGIC, MS OR MS RF | Upon request ⁷ | Upon request ⁷ |
| TSMC 0.13 μ CMOS General LOGIC, MS or MS RF (8-inch) | Upon request ⁷ | Upon request ⁷ |
| TSMC 0.13 μ CMOS General LOGIC, MS or MS RF (12-inch) | Upon request ⁷ | Upon request ⁷ |
| TSMC 90nm CMOS General or LP Logic (12-inch) | Upon request ⁷ | Upon request ⁷ |
| TSMC 90nm CMOS General or LP MS RF (12-inch) | Upon request ⁷ | Upon request ⁷ |
| TSMC 65nm CMOS General or LP MS RF (12-inch) | Upon request ⁷ | Upon request ⁷ |
| TSMC 40nm CMOS General or LP MS RF (12-inch) | Upon request ⁷ | Upon request ⁷ |

| UMC | STANDARD Price/block | DISCOUNTED Price/block |
|--|---------------------------------|-----------------------------------|
| UMC L180 Logic GII, Mixed-Mode/RF, Low Leakage | 16000 ⁵ | 14800 ⁵ |
| UMC L180 CIS 1P4M CONV or 2P4M ULTRA | 21600 ⁵ | 20400 ⁵ |
| UMC L130 Logic, Mixed-Mode/RF | 30900 ⁵ | 29100 ⁵ |
| UMC L110AE LOGIC/MIXED-MODE | 30900 ⁵ | 29100 ⁵ |
| UMC L90N Logic, Mixed-Mode/RF | 47200 ⁶ | 44700 ⁶ |
| UMC 65nm Logic, MM/technologies | 48100 ⁶ | 45100 ⁶ |

| TRONICS Microsystems | STANDARD Price/block | DISCOUNTED Price/block |
|-------------------------------|---------------------------------|-----------------------------------|
| MEMSOI – 4x4 mm ¹¹ | 2500 | 2375 |
| MEMSOI – 4x8 mm ¹¹ | 3500 | 3225 |
| MEMSOI – 8x8 mm ¹¹ | 5000 | 4500 |

| MEMSCAP | STANDARD Price/block | DISCOUNTED Price/block |
|------------------------------------|---------------------------------|-----------------------------------|
| METALMUMPS – 10x10mm ¹¹ | 3100 | 3000 |
| PolyMUMPS – 10x10mm ¹¹ | 3100 | 3000 |
| SOIMUMPS – 10x10mm ¹¹ | 3100 | 3000 |

| imec | STANDARD Price/block | DISCOUNTED Price/block |
|--|---------------------------------|-----------------------------------|
| SiGeMEMS – 5x5mm (passive) | 4250 ⁵ | 4000 ⁵ |
| SiGeMEMS on top of 0.18 μ TSMC CMOS – 5x5mm (active) | 28500 ⁵ | 27000 ⁵ |

| ePIXfab-imec SiPhotonics | STANDARD Price | DISCOUNTED Price | |
|---------------------------------|---------------------------|-----------------------------|-------|
| 1 block | 6.3 x 3.1 mm | 3700 | 3515 |
| 2 blocks - vertical | 6.3 x 6.33 mm | 6000 | 5700 |
| 2 blocks - horizontal | 12.73 x 3.1 mm | 6000 | 5700 |
| 4 blocks | 12.73 x 6.33 mm | 10700 | 10165 |

(Companies should contact the ePIXfab directly)

Notes

- 1) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 10 mm²
- 2) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 5 mm²
- 3) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 8 mm²
- 4) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 7 mm²
- 5) Price = per block of 5x5mm needed to fit the design in
- 6) Price = per block of 4x4mm needed to fit the design in
- 7) Price can be calculated through http://www.europractice-ic.com/TSMC_request_prices.php
- 8) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 3 mm²
- 9) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 12 mm²
- 10) Price = per submitted design (no size limit, bumping limited to 200 bumps)
- 11) Cost for extra services like structures release, subdicing, ... please refer to http://www.europractice-ic.com/mems_runschedule.php#MEMS_prices
- 12) Price = area (mm²) * price/mm² with min. fabrication cost equivalent to 4 mm²
- 13) Only European universities with Axxxx membership number
- 14) Only European R&D institutes with Rxxxx membership number

Contacts

imec, Belgium (C. Das, tel: +32 16 281248, fax: +32 16 281584, e-mail: mpc@imec.be)
Fraunhofer IIS, Germany (W. McKinley, tel : +49 9131 776 4413, fax: +49 9131 776 4499, e-mail: europrac@iis.fraunhofer.de)