

Presentation of the SiC action.

General proposal

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Organization of SiC action

- **Bring together several interested to analyze the SiC markets**
- **Make a complete and in-depth description of this area and provide specific answers to the participants of this action**
- **Schedule :**
 - **Starting point : at the signature of the contract**
 - **Duration : 6 months**
- **Have 5 companies involved, suppliers of this industry**
- **Share the cost between the different companies : budget per company of 25 kEuro.**

SiC action : objectives

- **General objectives, common to each company :**
 - Describe the applications and markets for the period 2004-2010 of SiC components
 - Analyze the industrial food chain of this fields : material manufactures, service providers, components manufacturers, capital equipment manufacturers
 - Analyze and describe the technologies for the manufacturing of SiC components (major bottlenecks, major achievements ...)
 - Description of all the companies and major research labs involved in this field
- **Specific objectives for each company :**
 - Answer specific technical, marketing and commercial questions linked to the development of the SiC business

Areas covered

- **SiC materials manufacturers:**

- Cree (US), SiCrystal (D), TDI (US), II-IV (US), Okmetic (SW), NovaSiC (F), Nippon Steel (J), HOYA (J), Dow Corning (USA), Bridgestone (J), Sixon (J), Bandgap (US), Soitec (F) ...

- **Optical devices using SiC :**

- Cree, Osram

- **Power devices using SiC :**

- Cree, STM, Infineon-SiCed, International Rectifier, Rockwell, Fuji Electric, Matsushita, Toshiba, Hitachi, DaimlerChrysler, Rohm ...

- **RF devices using SiC :**

- Rockwell, Cree, Northrop Grumman, PowerSicel, Thalès, SemiSouth Sirenza...

- **Mems devices:**

- Boston microsystems, Caldis semiconductor, FLX Micro, GE, SVT Associates, Zin technologies, Daimler, Gefran, Schlumberger, S-sense, Acreo, ...

Description of the common work to be done

- **Description of the industrial food chain :**
 - **Wafer manufacturers** : who is producing what, type of products, development stage, production level today and in the future, major characteristics of the process (if available)
 - **Capital equipment manufacturers** : major world manufacturers for the major process steps in the SiC business, characteristics of the activity and of the offer
 - **Service providers** : major world service providers for the major process steps in the SiC business, characteristics of the activity and of the offer
 - **Components manufacturers** : who is producing what, type of products for which applications, development stage, production level today and in the future, major characteristics of the process (technology, cost, yield ... if available)

Description of the common work to be done (2)

- **Analyze and describe the specific technologies for the manufacturing of SiC components :**
 - **Process steps for the manufacturing of the different SiC devices**
 - **Major bottlenecks**
 - **Major achievements**
 - **Major R&D organizations on a world basis**
 - **Technology roadmap for the different products and process**
 - **Who is developing what ?**
 - **Wafer diameter evolution**
 - **Competing technologies/materials per applications and situation of the SiC materials/components**

Description of the common work to be done (3)

- **Define a segmentation for the SiC devices applications**
- **Specific analysis per segment/application :**
 - **Market size in volume (number of pieces) and value (M\$) for 2004 and projection for 2010**
 - **SWOT analysis of SiC devices on this application**
 - **Specificities of the segment in term of technology (need of epitaxy, thermal treatment ...)**
 - **SiC wafer diameter and characteristics (4H/6H, quality ...)**
 - **Competing situation of the SiC materials/components on this application**
 - **Roadmap of products**
 - **Price roadmap for the devices**
 - **Description of industrial players in each segment**

Description of the common work to be done (4)

- **Description of all industrial players involved in the SiC business in Europe, North America and Asia (standard profile of Yole)**
- **Description of the major R&D labs**
- **Typical profile : (see next slide)**

Company profile

- **Company name and address**
- **Key managers and/or contacts**
- **Company Overview, market and customers, agreements and Alliances**
- **Financial data**
 - **Investors**
 - **Sales and benefit last 3 years**
 - **Capital investment forecast**
 - **Number of employees**
- **Main Products, main Technologies**
- **Manufacturing Facilities:**
 - **Activity of the plant**
 - **Status of the plant**
 - **Total Investment**
 - **Type of material**
 - **Wafer size (mm)**
 - **Clean room size (m²), clean room class**
 - **Production capacity (wpw)**
 - **Staff involved in production**

Specific work for each company involved

- **To be defined for each company**
- **Can include :**
 - **Specific market analysis for a specific material, equipment, service ...**
 - **Specific analysis of a company (customer or competitor) with an enhanced profile**
 - **...**

Schedule

- **Starting point : at the signature of the contract**
 - Analysis of the company offers (for each company involved in this action)
 - Definition of the different review meetings
 - Specific objectives, timing ...
 - Definition of the companies to be met and why
 - Definition of the information gathering tools : presentation of your company, interview guide
- **Duration : 6 months**
- **Several meetings will be set-up, approximately every 7 weeks, with each company in order to make the status of the search of information, get feed back on the results ...**
- **Final synthesis in 2 rounds in order to take care of important new questions.**

Methodology

- **Direct contact with each targeted company (face-to-face meeting) with the different persons important for our analysis :**
 - **R&D manager, purchasing manager, fab manager, marketing manager ...**
 - **Several contact per company is feasible due to the different companies involved in this action**
 - **Several meetings in a company is feasible in order to analyze different points**
 - **Contacts with key technical and marketing experts**
- **Approximately 40 companies will be met, chosen at the beginning of the action and regularly updated**
- **Presence at the main conferences and exhibitions**
- **More generally analysis of the literature, web, scientific publications ...**

Methodology (2)

- **Strong interaction with each company is key to the success (meeting every 7 weeks)**
- **Synthesis made in common (general segmentation of the SiC market)**
- **Specific analysis made for each company with the team of Yole and the team of the company :**
 - **Marketing analysis**
 - **Synthesis of the action for the company**
 - **Proposal of actions**
- **Key persons of YOLE Développement :**
 - **P. Roussel, responsible of the semiconductor equipment markets**
 - **JC Eloy, director**

Budget

- **Budget per company : 25.000,00 Euro**
- **This budget includes :**
 - **Time spend on the global and specific analysis**
 - **Travel expenses and cost linked to the gathering of the information**
- **Yole Développement will be able to reuse part of the information for communication purpose**
- **This information will be validated by the participant before publication**

Other possible actions

- **Specific actions could be planned, depending of the willingness of each organization involved :**
 - **Common meetings in order to exchange information between the companies involved in the SiC action**
 - **Specific customer focus meeting with different companies involved in the SiC action**
 - **...**
- **This will be determined during the action**

General conditions

- **Term of payment (to be defined with each company) :**
 - **30% at the beginning of the action**
 - **40% after 2 months**
 - **30% at the end of the action**
- **An NDA agreement will be signed between Yole Développement and each customer in order to keep the confidentiality of the exchanges**

Presentation of Yole Développement

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- **World leader in market research in the Mems fields**
- **First European marketing consulting company in the micro/nano technologies and compound semiconductor business**
- **18 consultants based in :**
 - **Lyon (France, headquarters)**
 - **Frankfurt (Germany)**
 - **Cambridge (United Kingdom)**
- **Worldwide activities since 1998**
- **Different different activities :**
 - **Custom strategic and market research analysis**
 - **Edition of reports**
 - **Edition of a monthly newsletter :**



Main areas of activities

- **Mems, micro and nanotechnologies**
- **Compound semiconductor : GaN, SiC, SOI**
- **Instrumentation for life science**
- **Energy harvesting technology and products :**
 - **Micro fuel cell**

Added value of Yole Développement

- **Development of specific methodologies in order to analyse and evaluate markets linked to new technologies**
- **In-depth knowledge of the different fields of specialities of Yole Développement, with strong network of contacts worldwide.**

For more information ...

Take a look at our web site

www.yole.fr

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