



## **AvantQuest Technologies Announces the Availability of Industry Standard Model for Nanometric Transistors**

### ***AvantQuest and DOLPHIN Integration bring BSIM4v3 for Nanometric Transistors to SMASH users in the Western United States***

Anaheim, California – Tuesday April 26, 2005 – AvantQuest Technologies, Inc., a provider of Analog-Mixed Signal electronics software solutions and design services, today announced that DOLPHIN Integration's SMASH product support transistors at the deep nanometric regime. SMASH support of BSIM3v3 has been celebrated for the diagnostic of severe modeling bugs. With the added capability of automatic selection of BSIM4 model version according to foundry parameters, SMASH delivers the industry standard BSIM4v3 for advanced modeling of stress effects and superior accuracy in modeling of sub-0.13 micron MOSFET devices in advanced RF and high-frequency analog and high-speed digital CMOS circuit simulation.

BSIM4 extends the performances developed by the BSIM Research Group of the University of California at Berkeley, towards the MOSFET physical effects into sub-100 nm regimes of CMOS. It is a physics-based, accurate, scalable, robust and predictive SPICE model. To date, the physical BSIM3v3.2 provided adequate accuracy and became accepted as the industry standard model for deep sub-micron CMOS circuit design. It has been rapidly adopted by IC designers and silicon foundries for devices down to 0.25  $\mu\text{m}$ .

SMASH is now operational for nanometric devices down to the threshold of Quantum Physics at 10 nm, for which the physical mechanisms to be better characterized include:

- Stress effect model
- Velocity overshoot
- Holistic noise model enhancement
- Better modeling of weak inversion charges
- Gate bias dependent source and drain series resistance of LDD MOSFETs
- More physical investigation of narrow width effects
- Carrier quantization of MOSFET inversion layers
- Model functionality (geometry-dependent parasitics)

Due to broad compatibility with all standard languages and major specialized simulators, mixed signal multi-level, SMASH is now positioned as the best means of communication of device behavior for technology sharing and productivity through IP transfer.

#### **About DOLPHIN Integration**

DOLPHIN Integration was founded as early as 1985 to offer Mixed Signal IC Design Services and has evolved into a Chipless Microelectronics Development Provider. Dolphin has established a solid reputation in the design of library cells, mixed analog/digital or pure logic IC's, and as a Fabless supplier of custom IC's. It launched SMASH as early as 1988, to ensure its mastery for simulating circuits realistically for one-pass designs and high fabrication yield. It is now on a growth course with an innovative product strategy in dual markets: Virtual Components of Intellectual Property and the Missing Electronic Design Automation Links, under the acronym MEDAL™, including SMASH. Additional information on Dolphin Integration and its offerings can be found at: <http://www.dolphin-ip.com>.



**About AvantQuest Technologies**

AvantQuest Technologies, Inc. is a leading provider of Analog-Mixed Signal electronics software and design services. The company delivers an optimized mix of design software, custom design services and silicon IPs to augment the design flow and enable our customers to achieve required design targets. At AvantQuest, our credo is to partner with every customer. Additional information about AvantQuest electronics software and design service may be obtained at [www.avantquest.com](http://www.avantquest.com) or by emailing [sales@avantquest.com](mailto:sales@avantquest.com).

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