**2013 Moldex3D Global Innovation Talent Award**

**Registration and Concept Introduction Form**

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| **Name of Entry** |  | **Registration No.** | (Leave it for the host) |
| **Name and Title of Team Leader** |  | **Category** | □ Student □ Professional |
| **Name of Team Member** |  |
| **Organization / Corporation** |  |
| **Email Address** |  | **Contact Number**  |  |
| **Concept Introduction of Entry (Below is an example)** |
| 1. **Executive Summary**

As Gas-assisted injection molding (GAIM) process has been widely used in the mold industry to reduce energy use and costs, Lite-on Technology, a professional provider of imaging products, enclosures, power supplies and LEDs, applies this process to its products and verifies the process with Moldex3D GAIM module. Lite-on Technology adjusts and optimizes the process parameters prior to real manufacturing to understand the penetration length of the gas, resulting in saving costs of material and time.1. **Challenge**

The flatness of the paper feed tray plays a crucial role in the function of ADF scanner. As uneven shrinkage will have direct impact on the feeding process, it’s necessary to resolve the deformation problem in advance. However, how to visualize 3D gas penetration behaviors inside the cavity to avoid any potential issues is definitely a challenge. Therefore, Lite-on must find an appropriate solution to assure product quality and reduce costly real mold trials. 1. **Solution**

To achieve its goal of better product quality, Lite-on Technology verified the GAIM process with Moldex3D GAIM module in early stage and compared the outcomes between the simulation analysis and the mold trial. By evaluating the simulation result, Lite-on Technology is able to identify the allowable displacement values and control the flatness of Z axis around ±0.3mm.1. **Case Study**

The objective is to determine the best gas needle location and the gas penetration status via gas assisted simulation analysis in order to reduce the warpage problems on both sides and middle of the part. While the high temperature zone was in the end of the flow channel, the gas needles are placed in the left and right sides of the flow end with lower temperate to enable the gas easily penetrate into the areas with higher temperature and lower pressure. In this case, Lite-on Technology identifies ideal gas needle locations and eliminates warpage problems with the unique capability that Moldex3D GAIM provides, which allows users to determine parameters including gas enter time and delay time, gas injection points, overflow regions, etc. Verifying the result by Moldex3D GAIM simulation, Lite-on ensures that the gas penetrated into the higher temperature region near the gate and reached the ideal results. With the help of Moldex3D, Lite-on Technology can thoroughly examine the original design and clarify the variance between the analysis and actuality via practical mold trial.1. **Benefits**

Through Moldex3D GAIM simulation, Lite-on Technology significantly reduces warpage to meet the requirement for dimensional stability. As a result, the X-displacement has been reduced by almost 45%; the Y-displacement has been reduced by 40%; and the Z- displacement has been reduced by 64%. Moreover, the analysis also demonstrates an agreement with simulation and molding trials for the secondary penetration phenomena.  |

1. To enter the competition, all participants must comply with the entry requirements. The participant acknowledges that failure to comply with the rules may result in his or her disqualification from the competition.
2. Participants shall declare that they own the copy right of their entries.