

## Case Study

# Evaporation of organic solvents after synthesis



### Customer: Global Research Center for Environment and Energy based on Nanomaterials Science, GREEN, Japan

The company was established in 1990 as a domestic paper distributor. Hi-Tech Paper Company Limited was set up to produce uncoated paper and now produces 41,000 tons of paper per year. The company was the pilot mill and the foundation of the successful pulp and paper industry that has since been established in Thailand. On March 2nd, 2001, the company was certified under the quality management standard ISO 9001:2000 by AJA EQS, England, by authority of UKAS (UNITED KINGDOM ACCREDITATION SERVICE).

### Application: Evaporation of organic solvents

GREEN performs various syntheses for the development of new functional materials. All their reactants are solved in different organic solvents. Thus, it is essential to completely remove these solvents safely after the reaction is finished. This is one step in purifying the compounds.

### Equipment: Rotavapor® R-210, Vacuum pump V-700 + V-850

GREEN uses four vacuum pumps with vacuum controllers on top. Each vacuum pump is connected to a BUCHI Rotavapor R-210.

### Benefit / Conclusion: Rapid and nondestructive method

Before GREEN started to use this vacuum system, they very often faced the problem of how to prevent bumping during the evaporation. Thanks to the vacuum controller and the vacuum pump with speed controlled, hysteresis-free operation, it became easy and smooth to control the vacuum level.

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*“As it simplifies the evaporation task, we can entrust the purification process with the evaporation and vacuum system to lab assistants. Thus, we can dedicate ourselves to other tasks.”*

Dr. Yasuhiro Shirai, Group Leader Photovoltaic Polymer Materials

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