

ABSTRACT

ENVIRONMENTAL SYSTEM INCLUDING VACUUM SCAVANGE FOR AN IMMERSION LITHOGRAPHY APPARATUS

An environmental system (26) for controlling an environment in a gap (246) between an optical assembly (16) and a device (30) includes a fluid barrier (254) and an immersion fluid system (252). The fluid barrier (254) is positioned near the device (30). The immersion fluid system (252) delivers an immersion fluid (248) that fills the gap (246). The immersion fluid system (252) collects the immersion fluid (248) that is directly between the fluid barrier (254) and the device (30). The fluid barrier (254) can include a scavenge inlet (286) that is positioned near the device (30), and the immersion fluid system (252) can include a low pressure source (392A) that is in fluid communication with the scavenge inlet (286). The fluid barrier (254) confines any vapor (249) of the immersion fluid (248) and prevents it from perturbing a measurement system (22). Additionally, the environmental system (26) can include a bearing fluid source (290B) that directs a bearing fluid (290C) between the fluid barrier (254) and the device (30) to support the fluid barrier (254) relative to the device (30).

[FIGURE 1]