

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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**Ex parte** CRAIG M. CARPENTER and RAYNALD B. CANTIN

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Appeal No. 2006-0595  
Application No. 09/932,860

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ON BRIEF

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Before WALTZ, JEFFREY T. SMITH, and FRANKLIN, **Administrative Patent Judges**.

WALTZ, **Administrative Patent Judge**.

**DECISION ON APPEAL**

This is a decision on an appeal from the primary examiner's non-final rejection of claims 1 through 5 and 7 through 13, which are the only claims pending in this application. Although the action appealed from is a non-final rejection, we have jurisdiction since the claims have been twice presented and rejected. See 35 U.S.C. § 134 (2003); *Ex parte Lemoine*, 46 USPQ2d 1420, 1422-23 (Bd. Pat. App. & Int. 1998).

According to appellants, the invention is directed to a deposition chamber, such as for chemical vapor deposition (CVD)

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or atomic layer deposition (ALD), where the chamber includes a chamber body, a chamber lid, a chamber cavity, a vapor delivery head, with a gas delivery path traveling through the chamber body via a feedthrough device (Brief, page 3).<sup>1</sup> A heating device which includes at least one resistor element having at least a portion thereof disposed within a thermally conductive sheathing is associated with the feedthrough device, a layer of thermal insulation is disposed between at least a portion of the sheathing and the chamber body, and a temperature sensing device is disposed between the layer of insulation and the longitudinal body portion of the feedthrough device (Brief, pages 3-4). A copy of representative independent claim 1 may be found in Appendix A attached to appellants' Brief.

The examiner has relied upon the following references as evidence of obviousness:

Whitney	4,638,150	Jan. 20, 1987
Fukuda et al. (Fukuda)	5,496,410	Mar. 05, 1996
Sajoto et al. (Sajoto)	6,056,823	May 02, 2000

The claims on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sajoto in view of Whitney and Fukuda (Office action dated Jan. 10, 2005, page 5; Brief, page 4, paragraph 6;

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<sup>1</sup>We refer to and cite from the Supplemental Brief dated April 13, 2005.

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and the Answer, page 2, paragraph 6). We reverse the rejection on appeal essentially for the reasons stated in the Brief, Reply Brief, and those reasons set forth below.

#### **OPINION**

The examiner sets forth the findings of fact based on the disclosure of Sajoto (Office action dated Jan. 10, 2005, pages 5-6). The examiner finds that Sajoto does *not* teach at least six elements (*id.* at page 6). The examiner applies Whitney for the teaching of a flexible wire heater device with electrical resistance leads and thermal insulation disposed within a portion of thermally conductive sheathing (*id.* at pages 6-7). The examiner relies on Fukuda for the teaching of a gas line heating device which includes a thermocouple positioned adjacent the gas line heater (*id.* at page 7). From these findings, the examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of appellants' invention "to replace Sajoto's heater with Whitney's heater and Fukuda's thermocouple" by either adhering or welding Whitney's heater to Sajoto's feedthrough device, thus permitting a length of Whitney's layer of thermal insulation to be contiguous with Sajoto's longitudinal body portion (*id.* at page 7).

As correctly argued by appellants, the references relied upon by the examiner fail to teach or suggest all of the claimed limitations (Brief, page 6). Specifically, the combination of references fail to teach or suggest a temperature sensing device that is disposed between the layer of insulation and the longitudinal body portion of the feedthrough device as required by claim 1 on appeal (Brief, page 8; Reply Brief, page 5). As correctly argued by appellants, Sajoto discloses a thermocouple disposed externally to the radiation shield (i.e., insulation layer) (Brief, page 10; see Sajoto, Figure 3A, thermocouple 66).<sup>2</sup> The examiner relies on Fukuda for the teaching of a gas line heating device for a gas conduit which includes a thermocouple 54a "positioned adjacent Fukuda's gas line heater" (see the Office action dated Jan. 10, 2005, page 7, citing Figure 5). However, the temperature sensor 54a of Fukuda is disclosed and shown as located *in* the conduit or introduction tube 11a (see Figure 5 and col. 7, ll. 1-4; Brief, page 10). Accordingly, the examiner has failed to establish why one of ordinary skill in this art would have located the thermocouple or temperature

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<sup>2</sup>We note that Sajoto also suggests insertion of the thermocouple **66** in the heated gas delivery feedthrough **40** to monitor the temperature (col. 6, ll. 39-41).

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sensor of Fukuda between the layer of insulation and portion of the feedthrough device in the deposition chamber of Sajoto, using the heater taught by Whitney.

For the reasons stated above, we determine that the examiner has not established a *prima facie* case of obviousness. Therefore we cannot sustain the examiner's rejection of claims 1-5 and 7-13 under 35 U.S.C. § 103(a) over Sajoto in view of Whitney and Fukuda.

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The decision of the examiner is reversed.

**REVERSED**

THOMAS A. WALTZ	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
JEFFREY T. SMITH	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
BEVERLY A. FRANKLIN	)	
Administrative Patent Judge	)	

TAW:hh

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