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61/773,135 5 March 2013 (05.03.2013) US(71) Applicant: **ADVANCED TECHNOLOGY MATERIALS, INC.** [US/US]; 7 Commerce Drive, Danbury, CT 06810 (US).(72) Inventors: **BYL, Oleg**; 81 Pascoe Drive, Southbury, CT 06488 (US). **SWEENEY, Joseph, D.**; 9 Lancelane, New Milford, CT 06776 (US). **TANG, Ying**; 8 Hollis Drive, Brookfield, CT 06804 (US). **RAY, Richard, S.**; 21 Concord Way, New Milford, CT 06776 (US).(74) Agent: **HULTQUIST, Steven, J.**; HULTQUIST IP, P.O. Box 14329, Research Triangle Park, NC 27709 (US).

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(54) Title: ION IMPLANTATION COMPOSITIONS, SYSTEMS, AND METHODS

(57) Abstract: Ion implantation compositions, systems and methods are described, for implantation of dopant species. Specific selenium dopant source compositions are described, as well as the use of co-flow gases to achieve advantages in implant system characteristics such as recipe transition, beam stability, source life, beam uniformity, beam current, and cost of ownership.

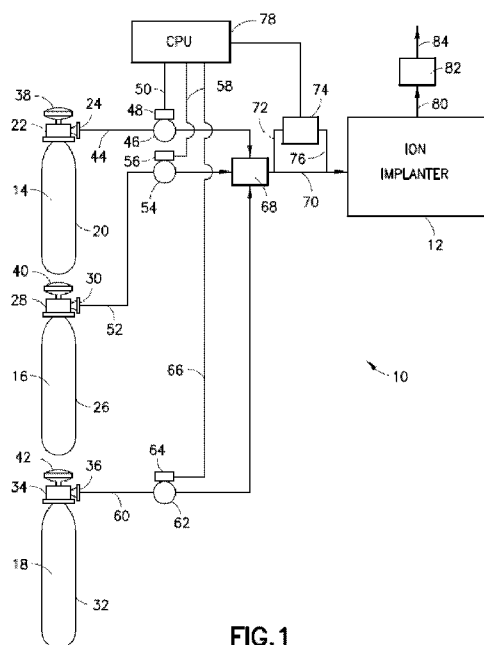


FIG. 1



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, **Published:**
KM, ML, MR, NE, SN, TD, TG).

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Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*