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(74) Agents: **MANNING, Gavin N.** et al.; Oyen Wiggs Green
& Mutala LLP, 480 - The Station, 601 West Cordova Street,
Vancouver, British Columbia V6B 1G1 (CA).

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(71) Applicant (for all designated States except US):
ANGSTROM POWER INCORPORATED [CA/CA];
106 - 980 West 1st Street, North Vancouver, British
Columbia V7P 3N4 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MCLEAN, Gerard**,
Francis [CA/CA]; 3895 Marine Drive, West Vancouver,
British Columbia V7V 1N3 (CA). **NGO, Tran** [CA/CA];
905 - 3755 Bartlett Court, Burnaby, British Columbia
V3J 7G7 (CA). **DJILALI, Ned** [CA/CA]; 2110 Wen-
man Drive, Victoria, British Columbia V8N 2S2 (CA).
STUKAS, Anna [CA/CA]; 1536 Vining Street, Victo-
ria, British Columbia V8R 1R1 (CA). **SCHROOTEN**,
Jeremy [US/CA]; 8653 Henderson Street, Mission, British
Columbia V2V 7P9 (CA).

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(57) Abstract: One aspect of the invention provides an ion-conducting membrane comprising an ion-conducting region and a non-ion-conducting region. The ion-conducting region is formed by a plurality of ion-conducting passageways that extend through the membrane. The passageways are filled with ion-conducting material and may be surrounded by non-ion conducting material. The membrane may comprise a substrate of non-ion-conducting material that is penetrated by openings, each opening providing a corresponding one of the passageways.



WO 2005/106992 A1