

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 August 2004 (19.08.2004)

PCT

(10) International Publication Number
WO 2004/070745 A1

(51) International Patent Classification⁷: **H01F 1/22**,
1/24, 1/26, 41/02, 1/147

(74) Agent: **ROBIC**; Leger Robic Richard, CDP Capital Cen-
ter, 1001, Victoria Square, Bloc E - 8th Floor, Montreal,
Quebec H2Z 2B7 (CA).

(21) International Application Number:
PCT/CA2004/000147

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(22) International Filing Date: 4 February 2004 (04.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2,418,497 5 February 2003 (05.02.2003) CA

(71) Applicant (for all designated States except US): **CORPO-
RATION IMFINE CANADA INC.** [CA/CA]; 75, boul.
de Mortagne, Bureau 119, Boucherville, Québec J4B 6Y4
(CA).

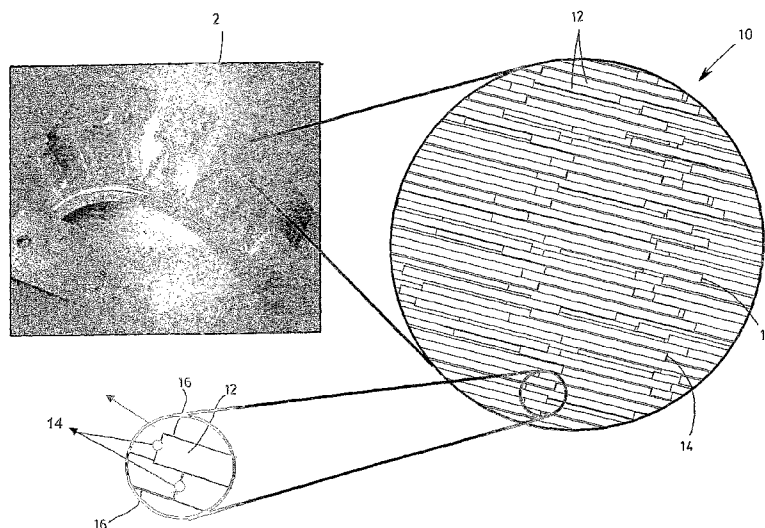
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **LEMIEUX, Patrick**
[CA/CA]; 500, rue des Capucines, Ste-Julie, Quebec J3E
1V8 (CA).

[Continued on next page]

(54) Title: HIGH PERFORMANCE MAGNETIC COMPOSITE FOR AC APPLICATIONS AND A PROCESS FOR MANUFAC-
TURING THE SAME



(57) Abstract: A magnetic composite for AC applications with improved magnetic properties (i.e. low hysteresis losses and low eddy current losses) is disclosed. The composite comprises a consolidation of magnetizable metallic microlamellar particles each having a top and bottom surfaces and opposite ends. The top and bottom surfaces are coated with a dielectric coating for increasing the resistivity of the composite and reducing eddy current losses. The dielectric coating is made of a refractory material and the ends of the lamellar particles are metallurgically bonded to each other to reduce hysteresis losses of the composite. A process for manufacturing the same is also disclosed. The composite is suitable for manufacturing devices for AC applications such as transformers, stator and rotor of motors, generators, alternators, field concentrators, chokes, relays, electromechanical actuators, synchroresolvers, etc....

WO 2004/070745 A1

**Published:**

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.