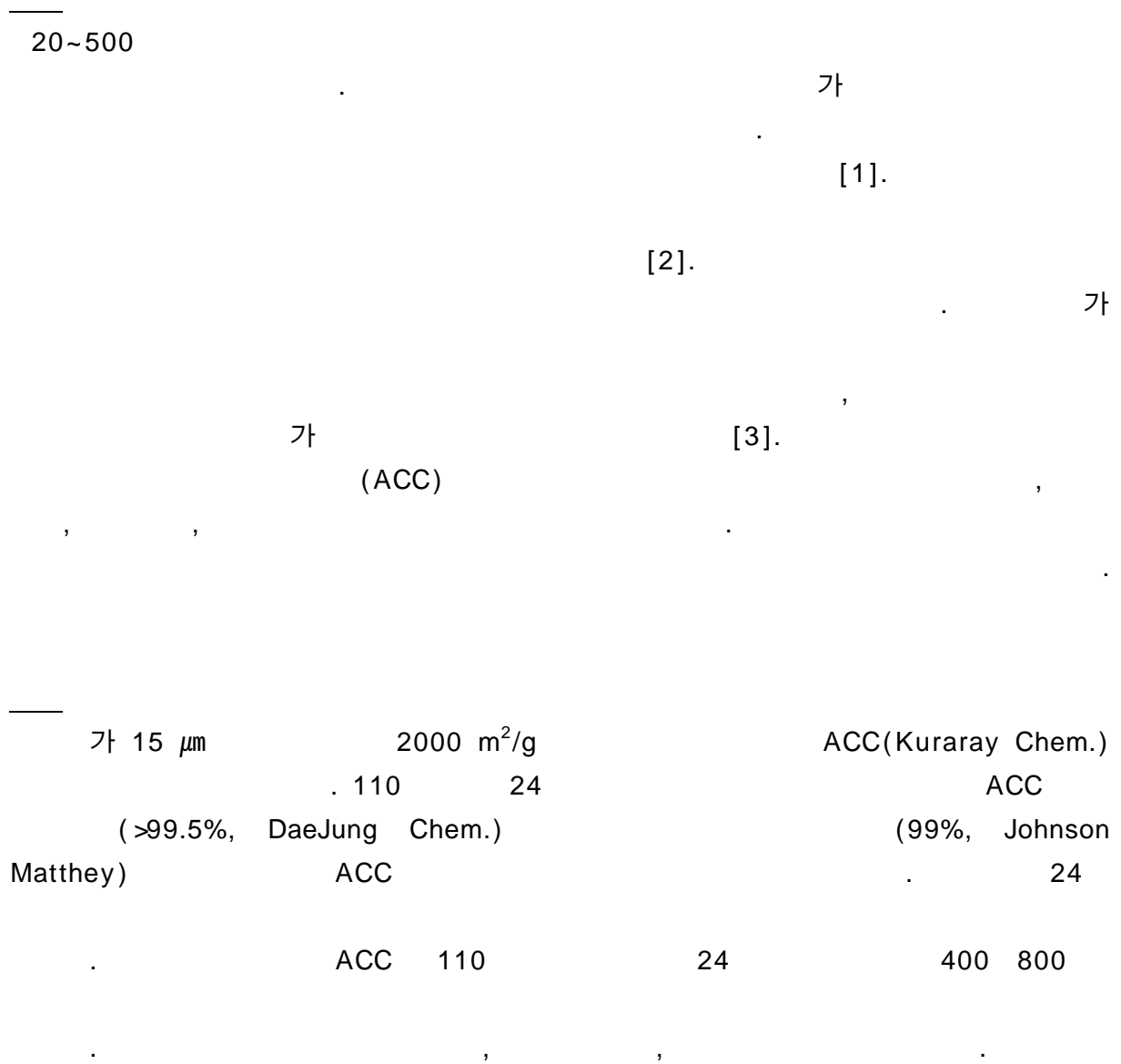_____,   ,   ,   ,   ,

Preparation of Macrostructured Metal Oxide Tube by a Casting Method

Min-Woong RYOO, Jong-Ho KIM, Wan-Jin LEE, Moo Sung LEE, Kap Seung YANG, Gon SEO
Department of Applied Chemistry, College of Engineering,,
Chonnam National University

20~ 500

.

.

[1].

[2].

.

,

[3].

(ACC)   ,

,   ,   .

.

15   2000 m^2/g   ACC(Kuraray Chem.)
                    . 110   24   ACC
        (>99.5%,   DaeJung   Chem.)   (99%,   Johnson
Matthey)   ACC   .   24

        .   ACC   110   24   400   800

        .   ,   ,   .

3000 m^2/g   (MSC- 30, Kansai Coke)

   ACC   TGA(TA2000, Seico), FE- SEM/EDX
(S- 4700, Hitachi), XRD(DMAX- 1200, Rugaku), Laser Raman(SPEX- 1403), XPS
(PHI- 5700)   .

         /   .

                        UV- VIS   (U- 3501, Hitachi)

        .

                      2 x 2 cm^2

UV- black light   (2000 ppm)   .

                                                                    FT- IR(FTS-
175C, BIO- RAD)   .

─────────────

                   ACC   .

XPS   Laser Raman   ACC   4

                    .   ACC

        ,

                  .

      1   ACC
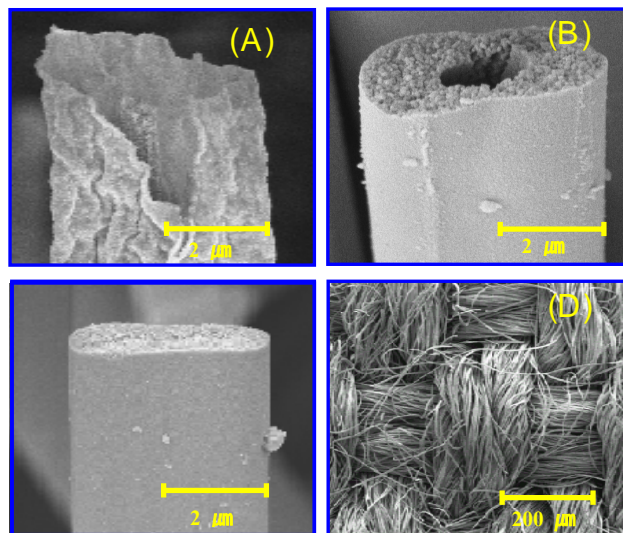
            . 600

Fig. 1. FE-SEM images of macroporous titania tube. (A); titania tube manufactured from
Ti(8.4)/ACC, (B); that from Ti(18.6)/ACC, (c) titania filament from Ti(18.6)/ACC, and (D);
all overall view of titania tube (B).

,   1(A)
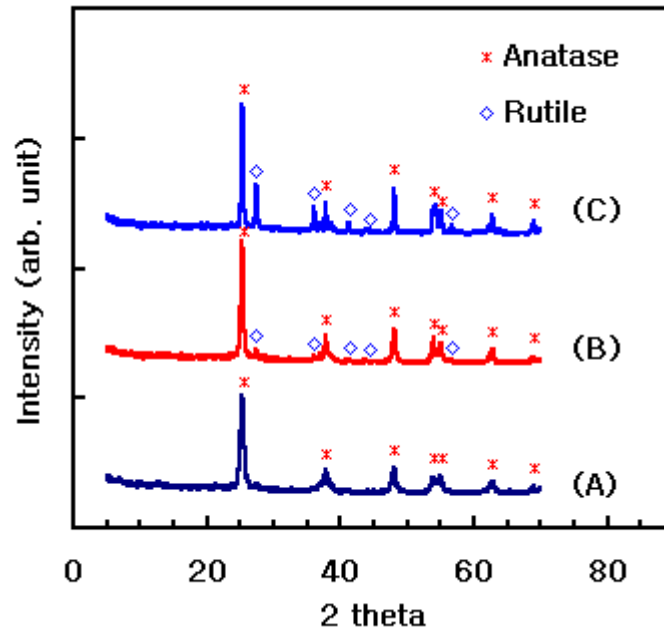
1(B)   .

                                          ,

1(B)   .

                                    . ACC

                              ACC

1(D)   .   ,   ,

                                    .

                                                            .   2

               600

(anatase)   700   800   (rutile)

      .

   Fig. 2. XRD patterns of macroporous titania tubes manufactured from Ti(18.6)/ACC. (A), (B), and
(C) are titania tubes calcined at 600   , 700   and 800   , respectively.

                                                                  (P- 25,
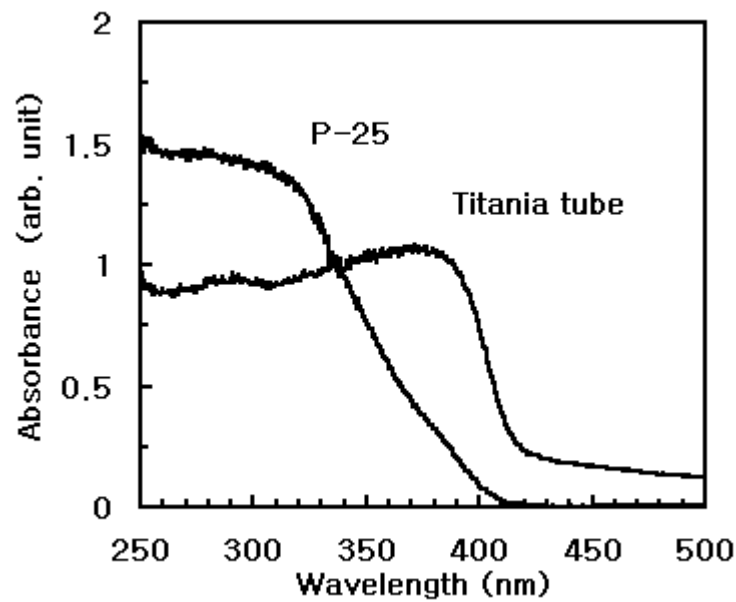
Degussa)   .   3   UV- VIS

         P- 25   400 nm   .

                                                                  ,

                              .

.

Fig. 3. Reflectance UV-VIS spectra of macroporous titania tube and a commercial titania (P-25).

. ACC   3

25~ 50

.

.

:   (2000- 2- 31800- 002- 3)   .

1. C.T. Kresge, M.E. Leonowicz, W.J. Roth, J.C. Vartuli, and J.S. Beck, *Nature*, **359**, 710(1992).

2. R. Ryoo and S.H. Joo, *3rd Intern. Mesostructured Materials Symp*., Jeju, Korea, 2002, p.16.

3. F. Schüth, *Chem. Mater.*, **13**, 3184(2001)