PVC/MPOE/

[1]　　　　　　[1]　　　　　　[2]

1　　　　　　　　　　　　　　　　　　510640

2　　　　　　　　　　　　　　　　528318

MPOE

PVC　　　　　　　　1

PVC

"　　　"

"

PVC/MPOE　　　POE　／

21　　　PVC/MPOE/

CPE　　　PVC　POE　　　　　　11

0　　　4.2　　　　　　　　　2

2

25　　PVC/MPOE/

60%　　　　　　　　　　10

PVC/MPOE/

1   1   2

1   510640

2   528318

E-mail: psjqzhao@scut.edu.cn

MPOE

PVC   1

PVC   [1 2]

"   "

[3]

"

"

PVC/MPOE   POE /

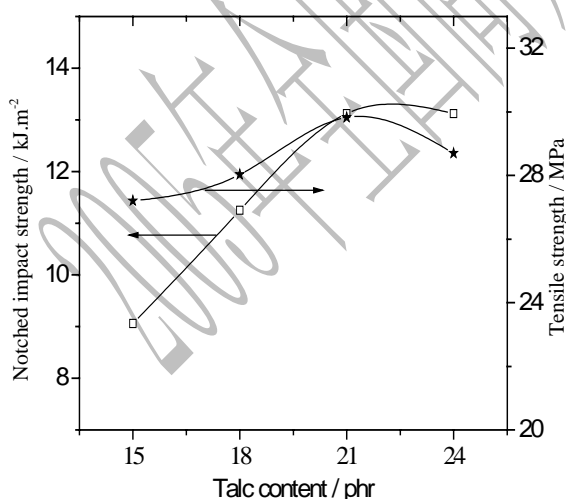15 18 21 24   (PVC   100   ) PVC/MPOE/

1

21

Fig 1 Effect of talc content on the
mechanical properties of blends
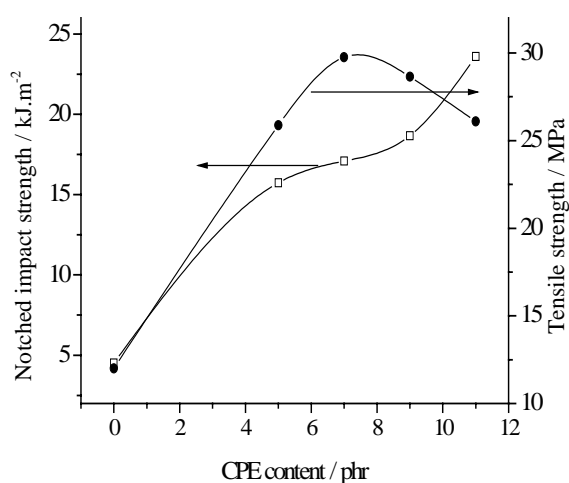
Fig 2 Effect of CPE content on the
mechanical properties of blends

PVC   MPOE   CPE

21   CPE   0 5 7 9 11   PVC/MPOE/
                  11   4.2   2
                              "   "

                                                                0 1   2   3
                                                    MPOE
          PVC/MPOE/   3   2

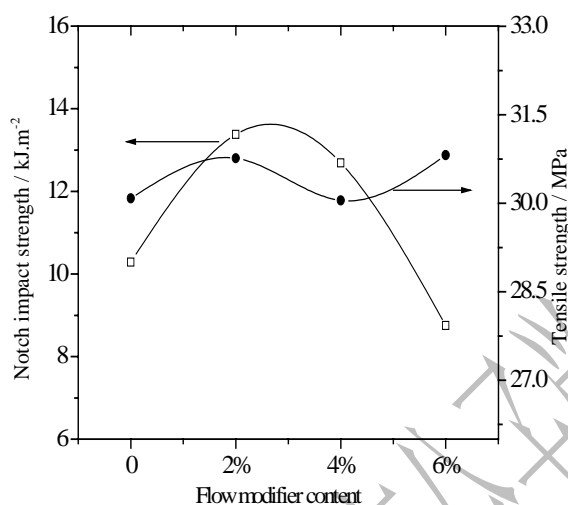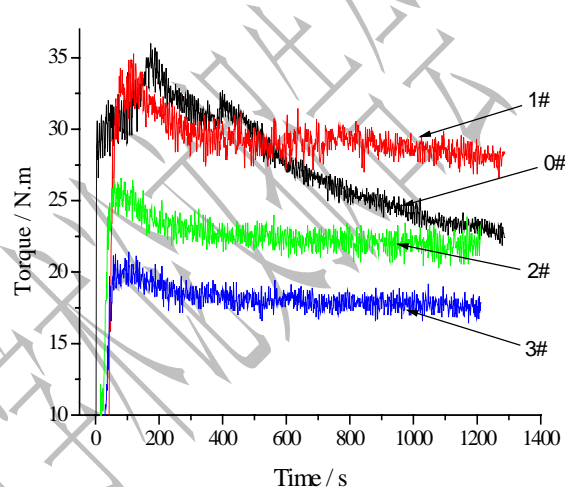Fig 3 Effect of flow modifier on the mechanical properties of blends

Fig 4 Rheological curves of master batch with different fluidity modifier content

0#   0   1   1   2   2   3   3

                          1
                67.1%   58.4%

Table 1 Comparing between two-step processing way and one-step processing way

	wt%	(kJ/m^2)	(Mpa)	(Mpa)
1#	70	7.9	33.2	61.2
1-1#	70	13.2	29.8	54.6
2#	80	7.7	31.8	62.1
2-2#	80	12.2	29.5	55.5

          1   2   1-1#   2-2#

[1] PVC/CPE/POE , 2001 14 9 293 297

[2] PVC/POE 2003 19 2 131 134

[3] YU-CHUN OU, TING-TAI GUO, XIAO-PING FANG, Toughening and reinforcing polypropylene with core-shell structured fillers, journal of applied polymer science, v74, 1999:2397-2403

Study on the mechanism property of PVC/MPOE/inorganic filler

Jiandong Zuo[1], Jianqing Zhao[1], Guonan Chen[2]

1. College of Materials Science and Engineering, South China University of Technology, Guangdong Guangzhou, 510641; 2. Guangdong Liansu technology industrial Co. Ltd, Guangdong Shunde, 528318

Thermoplastics elastomers were usually used to modify rigid PVC products, and Ethylene-1-octylene copolymer had good combination properties and processability. But PVC/POE was seldom been studied. Filled master batch way two-step processing way was a good way of improving the compatibility and interface cohesion of polymers and inorganic filler. The core-shell structure particles were made by two-step processing way and the mechanical properties of PVC/MPOE (modified POE)/inorganic filler were studied. The results showed that when talc content in the filled master batch was 21 phr, the mechanical properties of blends were best. CPE could improve the compatibility of PVC and MPOE. When the content of CPE was 11 phr, notched impact strength increased by 4.2 times and tensile strength increased 25% than those of blends without CPE. Fluidity modifier content was 2%, the torque of the blends decreased 25% and the mechanical properties of blends were best. Comparing with one-step processing way, notched impact strength of the blends by two-step processing way increased about 60%, and tensile strength decreased slightly.

Key words: MPOE inorganic filler core-shell