

LAMPIRAN

A. HASIL OLAH DATA PENELITIAN

1. Hasil uji Normalitas

Tests of Normality

| Kelompok | Kolmogorov-Smirnov(a) | | | Shapiro-Wilk | | |
|---------------|-----------------------|----|---------|--------------|----|------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Kekerasan 60% | ,253 | 5 | ,200(*) | ,956 | 5 | ,781 |
| 65% | ,189 | 5 | ,200(*) | ,982 | 5 | ,946 |
| 70% | ,192 | 5 | ,200(*) | ,925 | 5 | ,561 |
| RK kontrol | ,231 | 5 | ,200(*) | ,881 | 5 | ,313 |

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Test of Homogeneity of Variances

Kekerasan

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| 4,936 | 3 | 16 | ,013 |

2. Uji statistik non parametrik Kruskal Wallis

Ranks

| Perlakuan | N | Mean Rank |
|-----------------------|----|-----------|
| uji_kekera san 60% | 5 | 3.80 |
| 65% | 5 | 12.60 |
| 70% | 5 | 7.60 |
| Resin Komposit | 5 | 18.00 |
| Total | 20 | |

Test Statistics(a,b)

| | uji_kekera san |
|-------------|-------------------|
| Chi-Square | 16.292 |
| df | 3 |
| Asymp. Sig. | .001 |

a Kruskal Wallis Test

b Grouping Variable: Perlakuan

3. Uji statistik nonparametrik Man- whitney

**MANN-WHITNEY
KEKERASAN**

| VARIABEL | VARIABEL | | | |
|----------|----------|--------|--------|--------|
| | 60wt% | 65wt% | 70wt% | Z350 |
| 60wt% | - | 0,047* | 0,347 | 0,009* |
| 65wt% | 0,047* | - | 0,028* | 0,009* |
| 70wt% | 0,347 | 0,028* | - | 0,009* |
| Z350 | 0,009* | 0,009* | 0,009* | - |

***terdapat perbedaan yg bermakna (p<0,05)**

UJI NONPARAMETRIK MANN-WHITNEY

Ranks

| | Perlakuan | N | Mean Rank | Sum of Ranks |
|---------------|----------------|----|-----------|--------------|
| uji_kekerasan | 60% | 5 | 3.00 | 15.00 |
| | Resin Komposit | 5 | 8.00 | 40.00 |
| | Total | 10 | | |

Test Statistics^b

| | uji kekerasan |
|--------------------------------|-------------------|
| Mann-Whitney U | .000 |
| Wilcoxon W | 15.000 |
| Z | -2.611 |
| Asymp. Sig. (2-tailed) | .009 |
| Exact Sig. [2*(1-tailed Sig.)] | .008 ^a |

a. Not corrected for ties.

b. Grouping Variable: Perlakuan

Ranks

| | Perlakuan | N | Mean Rank | Sum of Ranks |
|---------------|-----------|----|-----------|--------------|
| uji_kekerasan | 60% | 5 | 4.60 | 23.00 |
| | 70% | 5 | 6.40 | 32.00 |
| | Total | 10 | | |

Test Statistics^b

| | uji_ kekerasan |
|--------------------------------|-------------------|
| Mann-Whitney U | 8.000 |
| Wilcoxon W | 23.000 |
| Z | -.940 |
| Asy mp. Sig. (2-tailed) | .347 |
| Exact Sig. [2*(1-tailed Sig.)] | .421 ^a |

a. Not corrected for ties.

b. Grouping Variable: Perlakuan

Ranks

| | Perlakuan | N | Mean Rank | Sum of Ranks |
|----------------|-----------|----|-----------|--------------|
| uji_ kekerasan | 60% | 5 | 3.60 | 18.00 |
| | 65% | 5 | 7.40 | 37.00 |
| | Total | 10 | | |

Test Statistics^b

| | uji_ kekerasan |
|--------------------------------|-------------------|
| Mann-Whitney U | 3.000 |
| Wilcoxon W | 18.000 |
| Z | -1.984 |
| Asy mp. Sig. (2-tailed) | .047 |
| Exact Sig. [2*(1-tailed Sig.)] | .056 ^a |

a. Not corrected for ties.

b. Grouping Variable: Perlakuan

Ranks

| | Perlakuan | N | Mean Rank | Sum of Ranks |
|----------------|-----------|----|-----------|--------------|
| uji_ kekerasan | 65% | 5 | 7.60 | 38.00 |
| | 70% | 5 | 3.40 | 17.00 |
| | Total | 10 | | |

Test Statistics^b

| | uji kekerasan |
|--------------------------------|-------------------|
| Mann-Whitney U | 2.000 |
| Wilcoxon W | 17.000 |
| Z | -2.193 |
| Asy mp. Sig. (2-tailed) | .028 |
| Exact Sig. [2*(1-tailed Sig.)] | .032 ^a |

a. Not corrected for ties.

b. Grouping Variable: Perlakuan

Ranks

| | Perlakuan | N | Mean Rank | Sum of Ranks |
|---------------|----------------|----|-----------|--------------|
| uji_kekerasan | 65% | 5 | 3.00 | 15.00 |
| | Resin Komposit | 5 | 8.00 | 40.00 |
| | Total | 10 | | |

Test Statistics^b

| | uji kekerasan |
|--------------------------------|-------------------|
| Mann-Whitney U | .000 |
| Wilcoxon W | 15.000 |
| Z | -2.611 |
| Asy mp. Sig. (2-tailed) | .009 |
| Exact Sig. [2*(1-tailed Sig.)] | .008 ^a |

a. Not corrected for ties.

b. Grouping Variable: Perlakuan

Ranks

| | Perlakuan | N | Mean Rank | Sum of Ranks |
|---------------|----------------|----|-----------|--------------|
| uji_kekerasan | 70% | 5 | 3.00 | 15.00 |
| | Resin Komposit | 5 | 8.00 | 40.00 |
| | Total | 10 | | |

Test Statistics^b

| | uji kekerasan |
|--------------------------------|-------------------|
| Mann-Whitney U | .000 |
| Wilcoxon W | 15.000 |
| Z | -2.611 |
| Asymp. Sig. (2-tailed) | .009 |
| Exact Sig. [2*(1-tailed Sig.)] | .008 ^a |

a. Not corrected for ties.

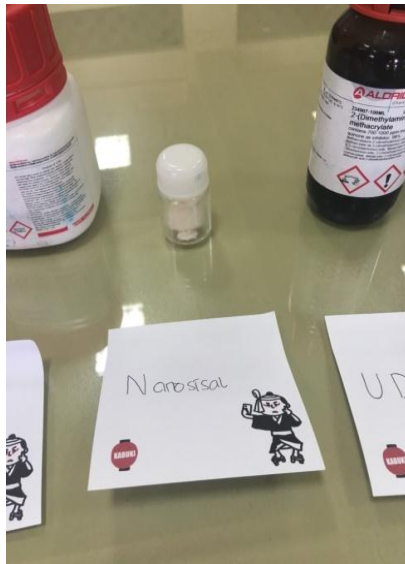
b. Grouping Variable: Perlakuan

B.DOKUMENTASI PENELITIAN

1. Alat dan Bahan



SISAL



Nanosisal



Resin Komposit filtek Z350



Timbangan digital



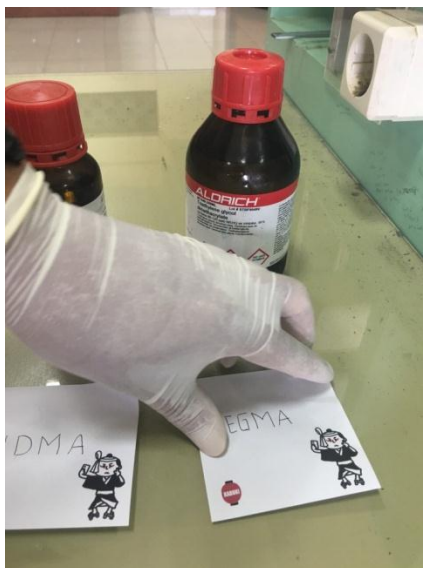
Light cured



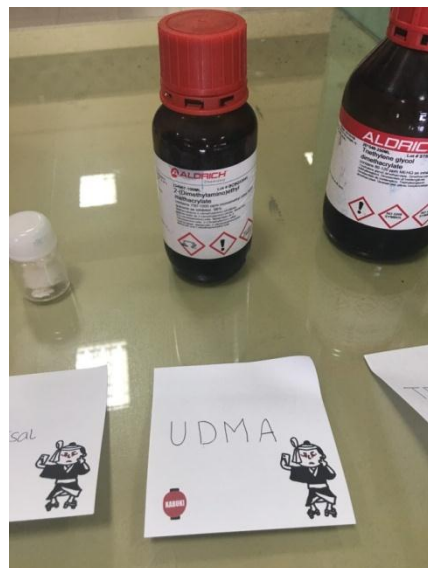
Cetakan resin komposit



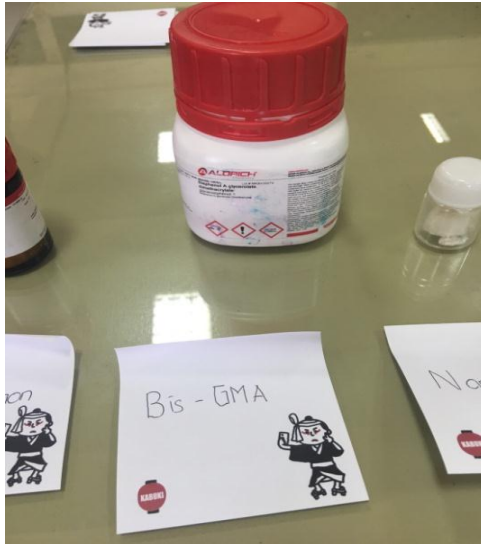
Proses pembuatan resin komposit nanosisal



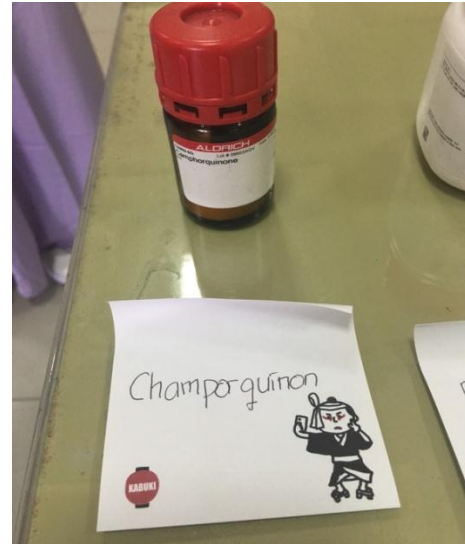
TEGMA



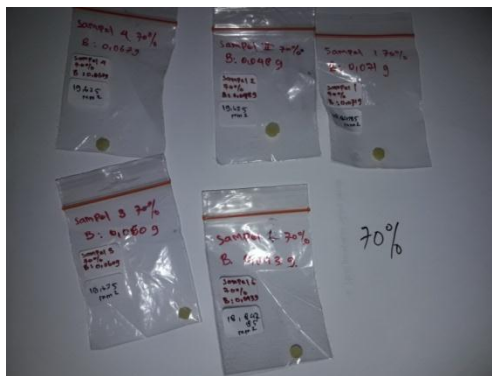
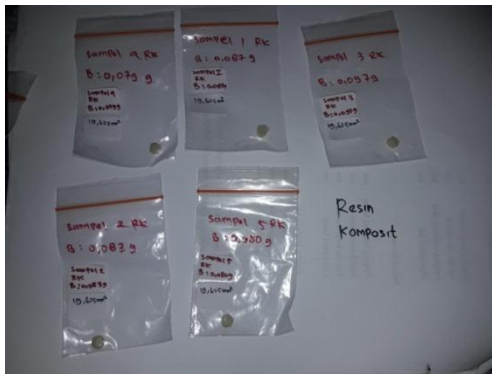
UDMA



Bis-GMA



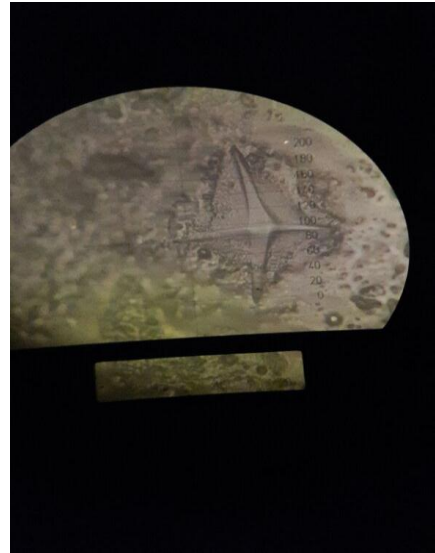
Champorquinone



Sampel resin komposit filtek Z350, nanosisal 60wt%, 65wt%, dan resin komposit nanosisal 70wt%



Alat uji kekerasan *Vickers*



gambaran mikroskopi uji kekerasan vickers



**Fakultas Kedokteran dan Ilmu Kesehatan
Universitas Muhammadiyah Yogyakarta**

Nomor : 331/C6-III/PN-FKIK UMY/V/2017
Hal : **Permohonan Ijin Penelitian dan Pengambilan Data**

Kepada Yth :
Ketua Jurusan Diploma Teknik Mesin
Sekolah Vokasi Universitas Gadjah Mada
Jalan Yacaranda Sekip Unit IV, Catur Tunggal, Kec. Depok, Sleman

Assalamu'alaikum Wr. Wb

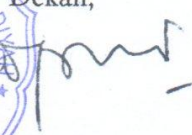
Bersama ini kami sampaikan dengan hormat, bahwa untuk memperoleh derajat Sarjana mahasiswa Fakultas Kedokteran dan Ilmu Kesehatan Universitas Muhammadiyah Yogyakarta diberi tugas Penulisan Karya Tulis Ilmiah (KTI). Untuk keperluan penelitian untuk mendapatkan kebenaran dalam penulisan.

Sehubungan dengan hal tersebut, kami mohon Mahasiswa tersebut di bawah ini dapat diijinkan untuk melakukan **penelitian dan pengambilan data** guna mendapatkan informasi sebagai bahan penyusunan Karya Tulis Ilmiah.

Nama Peneliti : Fadilah Hepy Hapsari
NIM : 20130340095
Judul KTI : Pengaruh Jumlah Volume Filler wt% terhadap Kekerasan Resin Komposit Nanosisal
Pembimbing : drg. Dwi Aji Nugroho, MDSc

Demikian surat permohonan ini kami ajukan, atas terkabulnya serta kerjasamanya yang baik kami ucapkan terima kasih.

Wassalamu'alaikum Wr. Wb.

Yogyakarta, 27 Mei 2017
Dekan,

dr. H. Ardi Pramono, Sp.An., M.Kes



LABORATORIUM BAHAN TEKNIK
DEPARTEMEN TEKNIK MESIN SEKOLAH VOKASI
UNIVERSITAS GADJAH MADA

HASIL UJI KEKERASAN

Spesimen Nano Sisal

| No | Spesimen | D1 μm | D2 μm | Drata-rata μm | Kekerasan VHN | FINAL |
|----|----------|----------|----------|------------------|------------------|-------|
| 1 | 70%_1 | 120 | 118 | 119 | 13 | 13 |
| 2 | | 120 | 122 | 121 | 13 | |
| 3 | | 120 | 116 | 118 | 13 | |
| 4 | 70%_2 | 124 | 122 | 123 | 12 | 10.33 |
| 5 | | 140 | 130 | 135 | 10 | |
| 6 | | 142 | 144 | 143 | 9 | |
| 7 | 70%_3 | 110 | 108 | 109 | 16 | 15.67 |
| 8 | | 140 | 144 | 142 | 9 | |
| 9 | | 90 | 92 | 91 | 22 | |
| 10 | 70%_4 | 100 | 102 | 101 | 18 | 16 |
| 11 | | 120 | 118 | 119 | 13 | |
| 12 | | 105 | 102 | 103.5 | 17 | |
| 13 | 70%_5 | 118 | 115 | 116.5 | 14 | 14 |
| 14 | | 120 | 118 | 119 | 13 | |
| 15 | | 110 | 112 | 111 | 15 | |

Lembar asli, tidak untuk digandakan

| No | Spesimen | D1 μm | D2 μm | Drata-rata μm | Kekerasan VHN | FINAL |
|----|----------|----------|----------|------------------|------------------|-------|
| 1 | RK_1 | 80 | 80 | 80 | 29 | 30.33 |
| 2 | | 72 | 74 | 73 | 35 | |
| 3 | | 84 | 83 | 83.5 | 27 | |
| 4 | RK_2 | 75 | 74 | 74.5 | 33 | 41 |
| 5 | | 65 | 64 | 64.5 | 45 | |
| 6 | | 65 | 63 | 64 | 45 | |
| 7 | RK_3 | 60 | 63 | 61.5 | 49 | 47.67 |
| 8 | | 63 | 62 | 62.5 | 47 | |
| 9 | | 63 | 62 | 62.5 | 47 | |
| 10 | RK_4 | 58 | 59 | 58.5 | 54 | 51.67 |
| 11 | | 62 | 61 | 61.5 | 49 | |
| 12 | | 60 | 59 | 59.5 | 52 | |
| 13 | RK_5 | 58 | 59 | 58.5 | 54 | 52.33 |
| 14 | | 60 | 60 | 60 | 52 | |
| 15 | | 60 | 61 | 60.5 | 51 | |

Keterangan:

1. Pengujian dilaksanakan tanggal 18 Maret 2017
2. Beban yang digunakan 100 gf





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UNIVERSITAS GADJAH MADA

HASIL UJI KEKERASAN

Spesimen Nano Sisal

| No | Spesimen | D1 μm | D2 μm | Drata-rata μm | Kekerasan VHN | FINAL |
|----|----------|---------------------|---------------------|-----------------------------|------------------|-------|
| 1 | 60%_1 | 120 | 122 | 121 | 13 | 13.33 |
| 2 | | 120 | 124 | 122 | 12 | |
| 3 | | 110 | 115 | 112.5 | 15 | |
| 4 | 60%_2 | 120 | 130 | 125 | 12 | 8.67 |
| 5 | | 200 | 200 | 200 | 5 | |
| 6 | | 140 | 150 | 145 | 9 | |
| 7 | 60%_3 | 135 | 130 | 132.5 | 11 | 10 |
| 8 | | 140 | 140 | 140 | 9 | |
| 9 | | 135 | 140 | 137.5 | 10 | |
| 10 | 60%_4 | 140 | 142 | 141 | 9 | 11 |
| 11 | | 120 | 110 | 115 | 14 | |
| 12 | | 130 | 140 | 135 | 10 | |
| 13 | 60%_5 | 130 | 125 | 127.5 | 11 | 11 |
| 14 | | 140 | 135 | 137.5 | 10 | |
| 15 | | 120 | 125 | 122.5 | 12 | |

Lembar asli, tidak untuk digandakan

| No | Spesimen | D1 μm | D2 μm | Drata-rata μm | Kekerasan VHN | FINAL |
|----|----------|---------------------|---------------------|-----------------------------|------------------|-------|
| 1 | 65%_1 | 110 | 115 | 112.5 | 15 | 14.33 |
| 2 | | 110 | 115 | 112.5 | 15 | |
| 3 | | 116 | 120 | 118 | 13 | |
| 4 | 65%_2 | 82 | 80 | 81 | 28 | 27 |
| 5 | | 80 | 75 | 77.5 | 31 | |
| 6 | | 90 | 92 | 91 | 22 | |
| 7 | 65%_3 | 100 | 98 | 99 | 19 | 19.33 |
| 8 | | 95 | 92 | 93.5 | 21 | |
| 9 | | 102 | 100 | 101 | 18 | |
| 10 | 65%_4 | 80 | 75 | 77.5 | 31 | 22.67 |
| 11 | | 105 | 100 | 102.5 | 18 | |
| 12 | | 100 | 100 | 100 | 19 | |
| 13 | 65%_5 | 100 | 98 | 99 | 19 | 18.67 |
| 14 | | 100 | 105 | 102.5 | 18 | |
| 15 | | 100 | 96 | 98 | 19 | |

Keterangan:

1. Pengujian dilaksanakan tanggal 18 Maret 2017
2. Beban yang digunakan 100 gf

